

CONTENTS

	Editorial	8
I	Section – 1 <i>Spiritual Organisations</i>	13 - 70
II	Section – 2 <i>Brilliant Individuals - National Heroes</i>	79 - 120
III	Section – 3 <i>Shining Institutions - National Treasures</i>	129 - 197
IV	Section – 4 <i>India's Achievements</i>	207 - 295

Editorial

THE VISION OF SWAMI VIVEKANANDA

Swami Vivekananda believed that India lives on the strength of her spirituality. He defined Indian nationalism as “Bringing together and uniting the scattered spiritual forces of the country”. It was one of his fundamental articles of faith that every nation has a special character of its own and the nation would live only so long as that character – the national ideal - is cherished, protected and preserved. For India, that idea was spiritualism. He unhesitatingly called ours a spiritual nation and defined it as Hindu nation. He was one of the first renaissance thinkers who popularized the term Hindu Nation – a legacy which was carried forward by seers and statesmen like Shri Aurobindo, Lok Manya Tilak, Savarkar, Dr. Hedgewar and others. As a matter of fact, Swami Vivekananda was the “Manthra Drushta” of Hindu Nation. Vivekananda Kendra is trying to propagate and bring to life this seed idea through its multifarious activities, like Yoga Varga, Samskara Varga etc..

Today the very concept of Nation is being viewed with suspicion. There are many so called modern historians who studiously propagate that nationhood in India is a post-British phenomenon, imported from Europe. This is totally unacceptable to Swami Vivekananda. According to him India as a nation existed even before history as we know it, was not known. History in fact is the recorded or unrecorded memory of the Nation about its past. Origin of Hindu Nation goes beyond the realm of recorded history.

Swamiji insisted that a proper study of history alone will instill a sense of pride and self respect in the new generation. One of Swamiji’s serious criticisms about the British education system was that it gave a much distorted picture of the history of our country and filled the student with a sense of shame and inferiority complex. Therefore Swamiji wanted a thorough overhauling of the system of education. To quote “The education that you are getting now has some good points, but it has a tremendous disadvantage which is so great that the good things are all weighed down. In the first place it is not a man making education, it is merely and entirely a negative education. A negative education or any training that is based on negation is worse than death. The child is taken to school and the first thing he learns is that his father is a fool, the second thing that his grandfather is a lunatic, the third thing that all his teachers are hypocrites, the fourth that all the sacred books are lies! By the time he is sixteen he is a mass of negation, lifeless and boneless..... Education is not the amount of information that is put into your brain and runs riot there, undigested all your life. We must have life building, man – making, character – making assimilation of ideas. If you have assimilated five ideas and made them your life and character, you have more education than any man who has got by heart a whole library. If education is identical with information, the libraries are the greatest sages in the world, and encyclopedias are the Rishis. The ideal, therefore, is that we must have the whole

education of our country, spiritual and secular, in our own hands, and it must be on national lines, through national methods as far as practical”.

Swamiji's vision was all-inclusive. Economic prosperity was as essential to nation's progress as spiritual enlightenment. The poverty of the country appalled him. He could not tolerate a religion preaching Vedanta to empty stomachs. He was prepared to go to any length to ameliorate the sufferings of the masses. At one time he suggested Socialism as a possible remedy but he also cautioned that unless it is based on Vedanta, it could not survive. He insisted upon the abolition of all privileges. Desperately short of funds, he even called upon his brother monks to sell away Belur Mutt and serve the cholera stricken slum dwellers of Kolkota.. He visualized that new India will arise from the people of the lowest level of society. One of his revolutionary concepts was that of the Sudra Raj, though he was not unaware of its pitfalls and drawbacks. Swami Vivekananda was never tired of repeating that the cause for the downfall of our country was neglect of women and the backward sections of the people. He called upon those who are responsible for this, should come forward to make amends for the sin.

One important aspect of Swamiji's vision that has not received sufficient attention is his approach to the question of scientific and technological developments. He was keenly aware of the role of science and technology

in the phenomenal progress of the West. Swamiji wanted India to make rapid strides in this sphere. There is documented evidence to show that Jamshedji Tata, the father of Steel in India and also the founder of Indian Institute of Science and Technology, Bangalore, was directly inspired by Swami Vivekananda while they were sailing together from Tokyo to Chicago. Later on Tata had written a personal letter to Swamiji requesting him to write a pamphlet exhorting people to support him in his new venture of scientific research.. Swamiji wrote an article in Prabudha Bharatha commending Tata's efforts.

Thus we find in Swami Vivekananda a great visionary who has given us in so many words the future India which was his dream. Though times have changed the clarity and grandeur of the vision still endures. Most of the things he wanted to accomplish still remain unaccomplished. It is time to ask the searching question – where have we gone wrong? Have we been loyal to the vision and tried to put it in practice? The answer is obvious. If we had been loyal, the picture today would have been totally different. But it is never too late. Vivekananda Kendra is a humble attempt to carry the message of Swamiji to every nook and corner of Bharath, to seek the help and support of every true Bharatheeya to dedicate himself to study and practice, individually and collectively, the life and message of Swami Vivekananda which will lighten up the path not only for India but for the whole World. That is the need of the hour.

P.Parameswaran

TSUNAMI RELIEF WORK BY VIVEKANANDA KENDRA

Vivekananda Kendra provided material assistance worth about Rs.4 lakhs and this was distributed on three days, viz., 29, 30 & 31 December. Shri A. Balakrishnanji, Vice President, Shri Bhanudasji, General Secretary, Sister Shantha, Secretary, RDP, Shri P. Thangaswamiji, Administrative Officer, Shri Avinashji, Public Relations

Officer, and many social workers of RDP took part in the functions. The local officials and the general public also extended their cooperation and participated. Vivekananda Kendra has taken up a massive total rehabilitation of 1,000 affected families in Kanyakumari & Tirunelveli Dts, supported by the Help-age India.

Relief provided for the affected

SI No	Affected village	Benefitted families	Materials provide
1	Kanyakumari District Sambasivapuram village, Collachel. (Kurunthankode Block)	70	Sarees, Skirts,Dhoties, Towels,Plates, Tumblers, Soaps, Oil, etc
2	Muttam & Azhikal villages Vellichanthai (Kurunthankode Block)	240	-do-
3	Melathurai & Pillaithoppu villages, Thalavaipuram (Kurunthancode Block),	195	-do-
4	Veerabagupathi and Keelaputhalam villages, Rajakkamangalam Block	39	-do-
5	Tirunelveli District Idinthakarai village, Radhapuram Block.	98	Sarees, Skirts, Dhoties, Mats, Bed sheets, Towels, Plates, Tumblers, Soaps, Oil.

Details of Materials distributed

SI No	Camp site	Material supplied	Value
1	Periavillai village, Kurunthancode Block	Two bags of rice, other provisions, vegetables, bread & biscuits	Rs.5000/-
2	Vellichanthai Kurunthancode Block	Milk powder, Bread and Biscuits, Phenol, Bleaching powder	Rs.2000/-
3	Thalavaipuram Kurunthancode Block	-do-	Rs.2000/-
4	DVD Govt. Hr. Sec. School, Nagercoil	-do-	Rs.2000/-

CHENNAI AREA

300 Families were given a kit consisting : a big plastic bucket, a mug, twp plates, a glass, a stove, a mat, a bed sheet, two vessels, a ladle - in the villages of Karikaattu kuppam, Kovalam, Nadu kuppama and Palaverkadu. The total value will be Rs. 2,50,000/-

300 Families near Cuddalore were given the above kits worth Rs. 2,00,000/-

3500 persons were fed on 26th in a community kitchen.

For Andaman & Nicobar Islands:

Consignments worth Rs. 8,00,000/- in the form of clothing and food material was sent. The Kendra branches at Vadodara has sent a consignment consisting food, clothing and household vessels of 2 lorries for the relief work.

Fishing nets worth Rs. 8,00,000/- were distributed in the villages of NTO Kuppam, Eranavoor, Ennore Chinna Kuppam, Ennore Periya Kuppam, Kovalam and Semanjeri.

Proposals :

1. Temples and community halls (for tailoring classes, samaya vahuppu, bhajans, etc.)
2. Plantation of bamboos, casuarinas, mangroves on sea coast
3. Dairy scheme – cow, buffalo, goat, etc.
4. Poultry farm
5. Bio-diesel farming like katamanakku, castor, etc.
6. Cottage industries – soap, candle, craft
7. Housing with drainage, roads, ground, rain water harvesting, kitchen garden
8. Tailoring unit

9. Counseling – yoga, bhajans, spiritual discourses, doctors' visit, cultural programmes, exhibitions
10. Palm, coconut tree leaf for kidugu, chippam, donnai, etc.
11. Mobile dispensary – medical camps, siddha camp
12. Coir works – handmade and machine made – through SHG, Co-operative
13. Water scheme for the village
14. Adoption of children – anbu illam
15. Catamarans, fishing nets, boats
16. Assistance in obtaining Documents like school certificates, pass port, ration card, land records, etc.
17. Chuna – artificial shell production
18. Community hall in the village on raised platform – Shelter house

The Schools in Andaman and Nicobar Islands

In Andamans Kendra workers and other sister organizations have engaged themselves relief works in a big way. We have 9 schools in Andamans and the available reports show the effect of the Earth Quake/Tsunami as follows:

VKV-Hut Bay:

This Vidyalaya is the worst affected. As there were some personal works for the teachers, all except the In-Charge of the school (Shri Dinesan K V) were in Port Blair when the incident occurred. Shri Dinesan was alone. Water due to the tsunami waves entered the campus and the buildings were under water within no time. We have lost all 3 computers (the systems and printer), Telephones, Television, Tape recorder, Library books, School records and many of the furniture. Some of the portions of the school are partially damaged too. As the area was getting filled with sea-water and there was no time to assess further, Shri Dinesan also ran out and escaped with the only cloth he

was wearing. The next two days & nights he was staying in the jungle along with some of the people who could escape luckily. They could watch dead bodies of human beings and cattle floating in and around including our school campus. The school may not function even by the end of this month (Jan.) as the Boat Jetty is not serviceable or other communication is not restored yet. The situation is returning to normalcy.

VKV-Port Blair

The school has got many cracks in the walls of almost 30 class rooms and newly built office block. The old Assembly hall which was being used for primary section's assembly till last week has partially collapsed. Now that building is not useful for any further use and it needs to be demolished immediately to avoid any threat to children. Water supply lines are broken. The repairing is being done. 2 computers fell down and broke. Almost all the glass racks of office, library, staff rooms and laboratory are broken.

No casualty for any staff or students. Father of one of the class XI students has drowned when he went on special duty for a week to Nicobar. Around 30 students of our school have lost many of their personal belongings, text books, note books and house hold items as water has entered their houses, taken away so many of their things.

VKVs at Rangat, Chouldari, Diglipur, Kadamtala, Pahalgaon, Basantipur and VKV Nagar Palika at Port Blair

The buildings in all these Vidyalayas have developed cracks and they need urgent repairs.

FUNDS AND OTHER MATERIALS :

Vivekananda Kendra through its 181 branch centres all around the country, the well wishers and the donors in the society is raising funds to meet these huge expenditure which may run in crores. Based on the funds received from the donors, we shall take up the work.

Plans for Rehabilitation

1. Adoption of boys : To adopt 25 boys between the age group of 5-8 years in Tamil Nadu and 25 boys from Andaman and Nicobar islands will be selected and accommodated in the Port Blair school. All their needs and education will be taken care of by the Kendra.
2. The livelihoods of the villagers : we are engaged in securing fishing nets, repairing boats and motors of the fishermen and creating awareness about insurance coverage for their material holdings.
3. The average cost of a boat, a fishing net and equipments works out to Rs 1 lakh per unit.
4. Rehabilitation — Financial assistance and construction materials for the 2250 affected families.
5. Education for the orphan and destitute children.
6. Financial assistance or supply of provisions for 2250 families of fishermen for the next 3 months.

SYNOPSIS VOL. 34 NO.2

SAMARTHA BHARATA

This issue of the Vivekananda Kendra Patrika on Samartha Bharata is a continuation of the last issue (Vol. 34 No.1).

Bharat has made great strides in all the fields contributing to the growth and development. The upsurge is unstoppable and remarkable. As a nation the whole country is cruising towards 'Vision-2020'. An individual as a citizen of India has a major role to the total development of India - Samagra Vikas to chisel the Nation as a Samartha Bharat.

The heritage of Bharat is a shining example of art, literature and sculpture. The men and the spirit behind these unparallel creations are unseen and unheard. India has set standards to the world in the fields of art, literature and sculpture to be followed by generations to come. The next Kendra Patrika (Vol. 34 No.2) will contain such topics which instil a sense of pride and self-confidence by discovering the Spirit of Bharat. Some of the forth coming issues of the Vivekananda Kendra Patrika will have core themes such as :

Cultural Nationalism, Handicrafts, Journalism in India, Christianity in India, Terrorism in India, Ancient sages and their Teachings, Islam in India, Great Builders of Educational Institutions etc.

SECTION - 1 SPIRITUAL ORGANISATIONS

Unity in variety is the plan of nature, and the Hindu has recognised it. Every other religion lays down certain fixed dogmas, and tries to force society to adopt them. It places before society only one coat which must fit Jack and John and Henry, all alike. If it does not fit John or Henry, he must go without a coat to cover his body. The Hindus have discovered that the absolute can only be realised, or thought of, or stated, through the relative, and the images, crosses, and crescents are simply so many symbols — so many pegs to hang the spiritual ideas on. It is not that this help is necessary for every one, but those that do not need it have no right to say that it is wrong. Nor is it compulsory in Hinduism.

- Swami Vivekananda





Thus Spake Swami Vivekananda

If a man can realise his divine nature with the help of an image, would it be right to call that a sin? Nor even when he has passed that stage, should he call it an error. To the Hindu, man is not travelling from error to truth, but from truth to truth, from lower to higher truth. To him all the religions, from the lowest fetishism to the highest absolutism, mean so many attempts of the human soul to grasp and realise the Infinite, each determined by the conditions of its birth and association, and each of these marks a stage of progress; and every soul is a young eagle soaring higher and higher, gathering more and more strength, till it reaches the Glorious Sun.

THE SPIRITUAL STRENGTH OF MODERN INDIA

While great attempts are being made to make Bharat Samartha in all walks of life, the spiritual and religious fields have not lagged behind. In fact they underlie all other facets of development.

Even in the pre-1947 years, our leaders knew that Free India's spiritual goals and programmes should take great importance and form the foundation of our public and private lives.

The ancient movements, maths, adheenams and ashrams founded by our Great Acharyas and Nayanmars have been functioning for a thousand years or more.

Organizations and movements like the RamaKrishna Math, R.S.S. and the Gandhian organisations have been continuing to carry out their great work and have become part of the Indian skyline.

Free India saw the emergence of a large number of new organizations, inspired by saints carrying out spiritual training, religious propaganda and spiritually oriented Social Service.

This section emphasizes mostly on post – 1947 organizations of religious and spiritual importance which have made Bharat Samartha in this unique field, which is Bharat's speciality, its identity.



‘NO ECONOMIC STRUCTURE WITHOUT A SPIRITUAL FOUNDATION’

“Healthy economic development is possible only in a society based on ethics, morality and integrity as there can be no strong economic structure without a spiritual foundation,” said Raja J.Chelliah, Chairman of the Madras School of Economics.

Mr.Chelliah said a society based on spiritual values could achieve good results in the economic sphere because in an economy one had to work together and establish rules for sharing the common output. The more moral and spiritual the society was, the greater the peace and healthy cooperation and the higher would be the output.

He said though the country had come a long way in the path of economic progress, there was still darkness as nearly 200 million people were living below the poverty line. The literacy rate was less than 70 per cent. In the next phase of development, the country had to pay more attention to these issues than to raising the overall rate of growth. For this the country needed strong spiritual guidance from seers like Kanchi Acharyas, he said.

SPIRITUALITY & PROSPERITY

Karmayogi

The Nation's Growing Wealth is personal Prosperity

A rich nation has rich citizens. People become rich not by being dependent on others, or the family or even their organization. He who leads others, heads the family, or proves innovative in the organization makes himself successful and rich. A nation thus becomes wealthy. Such people are called entrepreneurs. What are the characteristics of an entrepreneur? In short, one who does not conform to the social codes is an entrepreneur. Can we make it more explicit? Let us divide the population into two parts, leaders and followers. Our subject here is the leaders.

A nation becomes wealthy, rich, prosperous and famous by those who are willing to die happily for her, to give their all, who do not calculate or think of the future only, who never count their chickens, who HAVE in their hearts the glory of Mother India. Are you one of these? Are you willing to throw away your job and walk naked in the street? In 1920 Gandhiji asked people to leave the British schools, British courts, and British offices. Many followed him. Some became glorious leaders; others became volunteers. Even after freedom, they remained poor volunteers. That was before 1956, before the descent of the Force. I invite you to throw away a lucrative bank job and start an industry. If you are an entrepreneur, I assure you your several thousand rupee salary will become several thousand crores of business.



At least one person listened to me, opposed his family, resigned a government job, and did what I asked him. **Today he has as many crores as he was earning in rupees as salary.** He is a tireless worker, has never deserted a friend, and not for one moment wavered in his loyalty to his duty. He is a top industrialist in the country. He started an unconventional energy project, introduced the latest agriculture technology, and sponsored ways of life that will inspire youngsters. He was betrayed by almost everyone. He had the Great Good Sense to say, "What they do is up to them. Let me do what is right and good". **He knows how to face every difficulty. Even his most virulent enemy was forced to change his attitude towards him.** He is an entrepreneur. India needs NOT salaried employees. India needs patriotic leaders. Everyone is a leader. Will you lead the leaders? **(The New Indian Express)**



SRI SATHYA SAI BABA AND HIS MISSION

Bhagawan Sri Sathya Sai baba, hailed as an avatar by millions of his followers was born on 23/11/1928 in Puttaparthi in Andhra Pradesh.

Very early in his life he recognised his mission of leading all mankind to bliss, to lead them to goodness, to remove the suffering of the poor, and to teach equanimity.

Bhagawan's mission spread rapidly after the construction of Prashanti Nilayam, (the abode of supreme peace) the head quarters of his mission.

His main messages are 1. Sathya 2. Dharma 3. Santhi 4. Prema and 5. Ahimsa.

Sanathana Sarathi, the mission's mouth-piece is published in English, Tamil, Telugu and a number of world languages, carrying the Bhagawan's message of love.

His speeches have been collected and published in more than 30 volumes.

Sri Sathya Sai Organization started in 1965 has now branches in 180 countries all over the world.

In 1981 Sathya Sai institute of higher learning came up. Sri Sathya Sai Super-speciality Hospital came up in 1991. The famous drinking water projects of Anantapur



came up in 1995. Medak and Mehboob Nagar Districts are also being covered.

His Sathya Sai education in Human values has gone to remote villages in India. It has also been taken to many countries across the seas.

Sri Bhagawan lays great stress on girls'-education.

Sri Bhagawan's medical works has the following policy a) Globalisation of medicine b) Decommmercialisation of medicine c) Human values in medical care d) Spiritual well-being as a medical concept.

Bhagawan Baba's work involves crores of followers across the globe. From children

His Holiness Pramukh Swami Maharaj : A Hindu spiritual leader from Gujarat, who has won a place in the Guinness Book of World Records for building maximum number of temples.

onwards, his mission covers the entire cross-section of people.

His spirit of unity concerts attract millions of people.

Bhagawan Baba's work is veritably the work of Sanathana Sarathi.

His Spirituality Expresses itself in Service: For example:

Anantapur District in Rayalaseema area in Andhra Pradesh was a notoriously drought-prone area. With Bhagawan Sathya Sai Baba's blessings, the massive drinking water programme was undertaken, funded by the devotees. Its success inspired similar a work in Medak and Mehaboob Nagar Districts also.

	Anantapur Dt.	- Medak-Mahaboob Nagar
No. of Villages benefited	731	270
Population benefited	9 lakhs	-
Project Cost	250—300 crores	66 crores
Pipelines	2500 km	900 km
Overhead reservoirs	268 Numbers	30
Ground level	145	65
Treatment Plants	64	9

Bhagawan Sathya Sai Temple of healing, Super speciality hospital has the following Specialities: 1. Cardiology 2. Orthothoracic Surgery 3. Uro-nephrology (including Kidney transplantation) 4. Ophthalmology 5. Litho tripsy.

In this manner, the Spiritual, educational and service programmes strengthen India and take India's spiritual message to the whole world. (From Sanathana Sarathi)

A SHAIVAITE MATH

His holiness Sri Balagangadhara Nathaswami is the 71st pontiff of Adi Chunchanagiri Math near Bangalore. His is South India's largest monastery. He has also a large congregation of householder devotees. He runs a dynamic and extensive Hindu mission comprising hospitals, educational facilities at all levels, schools for the blind, hostels, orphanages, shelters for destitute women, programmes and centres that serve Dharma to millions throughout Karnataka.

SERVING THE CAUSE OF INDIAN CULTURE - THE UNBROKEN TRADITION

Munrshiram Manoharlal Publishers Year of Founding 1870. Titles in print 1500. New Titles per year 50-60. Print Run 1000-5000.

Motilal Banarsi Das Publishers Year of Founding 1903. Titles in Print 2000. New Titles per year 150. Print Run 500-2000.

THE CHINMAYA MISSION-A GLOBAL MOVEMENT

Swami Chinmayanandaji, the inspired Master, was the disciple of Swami Shivananda of Rishikesh and received instructions in the sublime aspects of Arsha Vidya from the Himalayan Tapasvi, Tapovanji Maharaj.



Swamiji Chinmayananda unleashed a tremendous amount of spiritual energy in the world with the commencement of the great spiritual movement in 1951.

In the last 53 years the movement has trained thousands of Sannyasins and Brahmacharis. The sadhus of the mission led by the noble example of the master, have conducted thousands of Gita Jnana Yagnas in all parts of the globe. The Upanishads and other Vedanta classes are equally inspiring and popular.

Apart from the general public, special groups have been formed to tap the spiritual energies, social concern, patriotic fervour, and human love in the hearts of men, ladies, youths and children and channelise them into doubly blessed inner growth and outer welfare activities.

Swami Chinmayananda's disciples have fanned out into Australia (3 centres), New Zealand (2 centres), Singapore (1), Indonesia (1), Philippines (1), Hong Kong (1), United States of America (21 centres), Canada (5 centres), Mexico (1), Trinidad and Tobago

(1), England (1), France (1), Switzerland (1), South Africa (1), Kenya (2), Mauritius (1), Nigeria-Lagos (1), Tanzania (1), Reunion Islands (1), Bahrain (1), Muscat (1), Abu Dhabi (1), Dubai (1), Kuwait (1), Nepal (2) and Sri Lanka (2).

Within India, Andaman & Nicobar islands have one centre. Andhra Pradesh (54 centres), Assam (2 centres), Bihar-Jharkhand (6), Delhi (1), Goa (6), Gujarat (6), Karnataka (14), Kerala (30), Madhya Pradesh and Chattisgarh (6), Maharashtra (28), Meghalaya (2), Orissa (8), Punjab (2), Rajasthan (1), Sikkim (1), Tamil Nadu (15), UP and Uttaranchal (15), and West Bengal (1) Centres function well.

Swami Chinmayanandaji and his band of missionaries use all the tools of communication, to carry the Vedantic message to the common man, to the specialist, the foreigner, the politician, the scientist, the manager, the women, youth and children. Formal and informal education, training courses, Gurukulas, Service activities, modern print and electronic media, all have been pressed into service to propagate the wise sayings of the Rishis.

A genuine love for India shines through the speeches and writings of Swamiji.

Books by the Swamiji and other Sadhus of the mission are very popular as are the mission's journals in various languages.

Swamiji's innovative scheme of publishing only future books as souvenirs of his Gita Jnana Yagnas, has gifted the Nation with books with excellent themes. His National Yagnas are great integrators bringing people of all languages and states together in Spiritual Unity.

After Swami Chinmayanandaji Mahasamadhi, the mantle of heading the great mission has fallen on Swami Tejomayanandaji. While keeping alive the spirit of his great guru, Swami Tejomayanandaji feels that the only way to stabilise is to grow. A great amount of consolidation and growth is being done in the mission now.

During the Kargil conflict the head of the Chinmaya Mission, not only instructed all the branches of the mission to collect Kargil

Fund, but, as an expression of responsible and proactive patriotism, personally went to the Prime Minister to handover the amount. Thereby he sent the message to the world that patriotism and Vedanta are two sides of the same coin.

The mission has started Vedanta courses in all Indian languages to bring Vedanta nearer to everyone.

The Chinmaya Mission is a fine example to prove modern India's love for Vedanta-and the Sanatana Dharma.

Saints like Swami Chinmayananda encapsule the spirit of our Sanatana Dharma-Nitya-nutana-Sanatana *The Eternal message is ever fresh.*

(Compiled from The Mission Publications)

CHINMAYA MISSION

1. International Residential schools
2. Sanskrit / Scriptural / textual research centres
3. Cultural centres
4. Archives
5. Temples / campsites
6. International level competitions on Gita, Awakening Indian to India, programmes.
7. Special awareness programmes for Youth, Children and Devis to make them understand Indian Culture better.
8. International Youth / Student exchange programmes
9. Special cultural training programmes for NRIS.
10. Teacher training programmes.

THE MEDIA EXTOL INDIAN STRENGTH

A number of magazines devoted exclusively to Hindu Religion and spirituality have appeared in the market. They are found to be commercially viable also. Today commercial publishers dedicate magazines to this purpose. Specialist magazines for Jyotisha, temple and pilgrimages, have come up. Virtually every newspaper or magazine of general interest also allots space for religion, spirituality and discourses by religious and spiritual leaders. Dozens of magazines and journals have sprung up exclusively reporting on Yoga, Yoga research and Yoga therapy.



The economic growth of India, its technical strength, the large number of yoga teachers, intellectuals and artists hailing from India and working in the West, have inspired the writers in the west to produce books on India and Hindu Dharma. These books seek to introduce our Dharma and our culture to the average westerner.

Books exclusively studying India's military strength, food production, technical man power, intellectual wealth and educational patterns have appeared in dozens in the book bazaars in the aftermath India's achievements. There is a natural enquiry into India's Cultural and Spiritual roots which energise its creative, scientific, economic, industrial and other growth. (Compiled)

SPIRITUALITY AND SERVICE - REMOTE AREAS

The years after freedom saw great and large spiritually oriented organizations taking our National values to remote, backward and Tribal areas to bring spirituality in concrete terms to our brethren. Kalyan Ashram, with its network of hostels and schools, service projects and medical centres has fanned out into the Tribal Areas.



Vivekananda Kendra has established a web of Schools and Service-centres in remote areas and has led its workers to live with the people whom they seek to serve.

Ekal Vidyalaya Foundation has an intensely penetrating network of one-teacher schools, health and rural development projects in all parts of the country. The Foundation has also been training a large number of itinerent Ramkatha and Krishnakatha tellers so that these men and women can go to the tribal belts to tell them the stories which the people want to hear. Great Pauranikas like Saint Moraribapu have associated themselves with such projects. The Vishwa Hindu parishad has trained thousands of Pujaris in Tamil Nadu. All these activities have strengthened the social, moral and economic growth of our country. (Compiled)

VIVEKANANDA ASHRAM

Finding proper religious instruction as the best way to consolidate Hindu forces and to prevent religious conversion, Swami Madhuranandaji Maharaj of Vivekananda Ashram, Vellimalai founded the Hindu Dharma Vidya Peetham. The Vidya Peetham, by writing books for systematic religious instruction in five grades, and by training local volunteers for conducting weekly classes in villages, has done great service to the cause of Nationalism and



spirituality. Hundreds of classes involving thousands of children are held every weekend to give moral and religious instruction to them, through, stories, songs, lessons and games. Equally significant are women's organizations conducting systematic Deepa Puja in villages. Deepa Pujas have brought lakhs of women together and have given them a religious identity and training. Swami Madhuranandaji's programmes are being taken up in the neighbouring districts of Tamil Nadu and in other countries where Tamil Hindus live.

VIVEKANANDA ASHRAM
VELLIMALAI, KANYAKUMARI DT.

MORARI BAPU AND OTHER RELIGIOUS PREACHERS

Sant Morari Bapu, Dongreji Maharaj, Kripananda Variar, Anjam Madhawan Numboodri, Sant Keshavadas, Pulavar Keeran, Sengalipuram Ananta Rama Dikshitar and a large number of Pauranikas, tell the public, the stories of the Ramayana, the Mahabharata, the Bhagawatam and the stories of Nayanmars. Moral lessons, spiritual training, practice of Bhakti and consolidation of the social forces are the benefits that accrue to the society. Modern communication facilities have made it possible for millions of people assemble at one place and build up an atmosphere of devotion, wisdom, and togetherness, which all reflect the strength of India.



SANNYASINIS OF TIRUENGOIMALAI

Tiru Engoi Malai is a temple town on the Trichy-Salem high way in Tamil Nadu. It has a tradition of Sannyasinis worshipping Lalitha-Parasakthi. This old tradition of Sannyasinis has been praised by saints like Swami Shivananda of the Divine Life Society.

Women taking to spiritual life as renunciates, have grown in numbers in free India. The Ramakrishna Sarada Math and Mission, Swami Chidbhavananda-established Sarada Mission, Sannyasinis of Divine Life Society, Chinmaya Mission and Arsha Vidya Gurukulam, and a number of large and small organizations have created and enlarged women's space in the spiritual and religious spheres.

VAISHNO DEVI, TIRUPATHI

In recent years the Vaishno Devi Temple at Katra in Jammu and Kashmir State has assumed great religious and spiritual significance. In 2004 Navaratri festival time 50 lakhs of pilgrims visited the Devi temple. While Amarnath is very difficult to reach, the government restrictions limiting the number of pilgrims to a few lakhs, temples in Vaishno Devi and Tirupathi attract millions of pilgrims every year, sustaining the spiritual fervour, and the religious discipline of the people. Better travelling facilities in the last 50 years have made, Kashi, Puri, Dwaraka, Rameswaram and other major pilgrim centres easily approachable for men, women and children. The average Indian has put all science and technology to religious and spiritual applications.

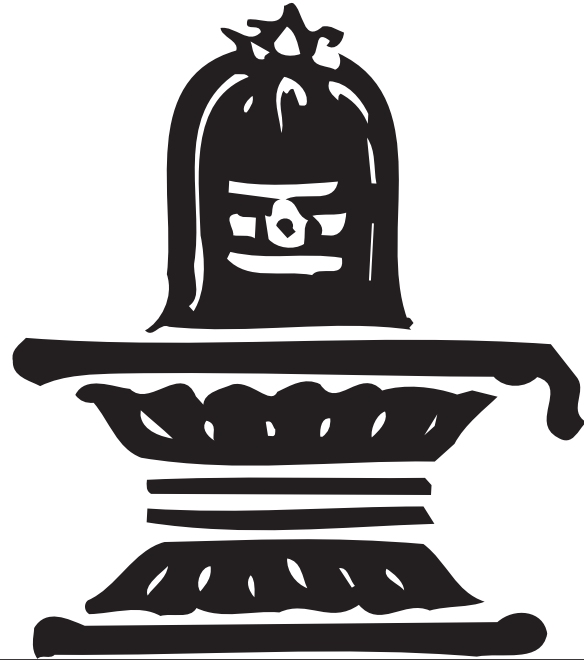


SADHGURU JAGGI VASUDEV AND THE DHYANALINGA

The Dhyanalinga situated in Coimbatore district in Tamil Nadu, is very much a part of India's glorious tradition of Siddhas, Seers, Sages and Enlightened beings.

The Dhyanalinga was consecrated by Sadhguru Jaggi Varudev a realised Master. The primary purpose of Dhyanalinga is spiritual liberation.

Nadha Aradhana, Omkara Diksha, Water and Milk abhisheka to Dhyanalinga on Amavasya and Pournami days and the celebration of Mahasivaratri are the special methods of spiritual practice in this Isha Yoga Center.



SHRI PANDURANG SHASTRI ATHAVALE

Shri Athavale (19-10-1920 to 25-10-2003) known respectfully as Dada by his co-workers began *bhav-pheri* (devotional visits) in 1954. With less than 20 helpers, he went to the villages around Mumbai to spread the message of love for God, and love for all people, considered by the workers to be God's children. Believing in self-knowledge as the preliminary condition for an inner growth that leads to a loving, enlightened social concern and outreach, Athavale initiated the practice of *Swadhyaya*-Self-Study.

Swadhyaya has spread to nearly 100,000 villages across India, and is estimated to have directly improved the lives of 20 million people. Athavale's Hindu philosophical beliefs ask people to recognize the inner presence of God which leads to a sense of self-esteem as well as an awareness of the divine presence within all persons. This belief has led to the betterment of individuals and communities around the world.

He secured the 1997 Templeton Prize for progress in Religion.

Shri Athavale's concepts in practice and action of right living are:

1. *Bhaktiferi* – Devotional visits to spread the healing message of love to all communities.
2. *Amrutalayam* (Village temples) Built by joint efforts of the villagers for people from all religions, castes, and economic strata to worship together.
3. *Yogeshwar Krushis*-farms of God where the villagers give a few days of labour a year to show their devotion to God, with the village's needy sharing the produce.
4. *Matsyagandhas* (floating temples of God) – fishing boats on which the fishermen give their time for a few days a year, as devotion to God, and share the harvest with the needy.
5. *Vrikshamandirs*-orchard temples which are cultivated impersonally by the villagers and the produce is given to the needy.
6. *Jeevan Sampada* (Wealth of Life) is an ingenious activity. Religious songs are recorded and distributed, related to each *Swadhyaya* activity.
7. *Gauras* (home dairies) are village-level milk cooperatives.
8. *Bahna Kendra*-ladies centres.
9. Bal-Sanksar Kendras-Children's value centres.
10. *Dhananjay Kreedas*-Arjuna's sports groups.
11. *Tattvajnana Vidyapeeth*-philosophic knowledge centres. Sri Athavaleji used Bhagawad Gita as the tool for reaching people in large numbers.

USA alone has 350 *Swadhyaya* centres (15000 followers) in 38 centres.

But it is his work among the fishermen of Western India that is very important to Samartha Bharata.

(With inputs from "Hinduism Today" 2003)

SRI SARADA MATH A CONSERVATIVE REVOLUTION

A new and significant chapter was added to the cultural and religious history of India, when Swami Vivekananda's prophetic vision of establishing a monastic order for women was at last fulfilled and Sri Sarada Math came into existence in 1953, the centenary year of Holy Mother Sarada Devi.

In 1952, the Sri Ramakrishna Math and Mission formed a group of dedicated women workers. They were to be helped through reasonable stages to form as early as possible an independent organisation of their own.

On 2/12/1954 Sri Sarada Math was formally opened with Sarala Devi a direct disciple of Sri Sarada Devi as its first president.

In 1959, the first batch of Sannyasinis were ordained by the then President of Sri R.K.Math.

Then was established Ramakrishna Sarada Math Association with the object of carrying -out educational, cultural, charitable and similar activities among women and children looking upon them as veritable manifestations of the divine, irrespective of

caste, creed, colour or nationality. Sri Sarada Math emphasises religious activities and preaching. Ramakrishna Sarada Mission is concerned mainly with welfare activities for children and women.

The math and the mission carry out the following activities.

1. Educational work: Primary and Secondary schools, Colleges, hostels, computer classes, spoken English classes, Sanskrit classes and free libraries.

2. Medical Services, A maternity hospital, medical clinics, homeopathic clinics, old-age homes, and periodical medical camps.

3. Rural uplift work. There are three branch centres in the rural areas of West Bengal and one in Arunachal Pradesh. Other centres also provide various kinds of service in nearby rural areas.

4. Relief and help to the needy was rendered for example, to the Kargil war-wounded soldiers, to the migrants from Jammu and Kashmir, to the victims of Orissa Cyclone and Gujarat earth quake.

5. Spread of cultural and spiritual ideas. This is done by regular preaching in India and abroad, study circles, scriptural classes,



publication of books, English Semi-annual journal, Samvit, and the Bengali quarterly journal, Nibodhata

The math and mission centres function in Uttaranchal, Karnataka, Orissa, Tamil Nadu, Kerala, Andhra Pradesh, Madhya Pradesh, Arunachal Pradesh, Delhi, Maharashtra,

Gujarat, Uttar Pradesh, West Bengal (10 centres) and in Sydney in Australia.

Sri Sarada Math has blazed a new trail in the spiritual history of our Ancient Nation by helping the emergence of a formal order of Sannyasinis.

(Adapted from-From SAMVIT)

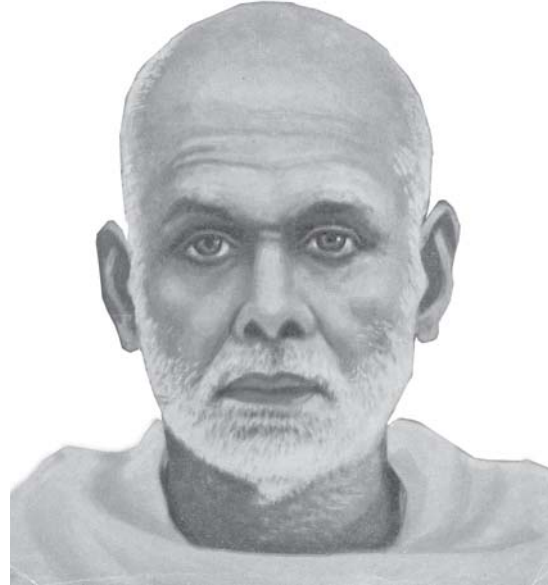


THE VITALITY OF NATIVE GENIUS

Shri Narayana Guru was one in the Galaxy of great men who gave rise in India, to an era of rich creativity in every field of our National Life. Born in the erstwhile State of Travancore as a member of the depressed Ezhava Community, he rose to supreme spiritual heights. Within the span of his own life time, he brought about a peaceful revolution in the condition of the down-trodden people of Kerala, an accomplishment rarely equalled, much less surpassed. It won for the Guru, the unreserved appreciation of men like Tagore, Swami Shraddhananda and Mahatma Gandhi.

Really Shri Narayana Guru is a Prophet of our National Renaissance. He consecrated the temples at Aruvipuram, Jagannath temple at Tellicherry, Sree Kanteshwarar temple at Calicut. He founded the SNDP yogam in 1903 and registered the Sree Narayana Dharma Sangham in 1928.

Shri Guru left a rich treasure of literature, both philosophical work and prayer songs



in Malayalam and Sanskrit. His followers continue the great work of the Guru, by running temples, schools, monasteries and hospitals, and for the spiritual and social upliftment of the followers of the Guru and for the whole Nation.

(Collected from various sources including 'Shri Narayana Guru' by P.Parameswaran)



KANCHI PARAMACHARYA

Living the full Upanishadic life-span of 100 years, Kanchi Paramacharya, was a great source of strength to India, in its troubled days. He repeatedly told our masses as well as our National leaders, that the Eternal values of India's Sanatana Dharma, can find application in diverse fields of our national life, in our polity, education and community life.



He was the first to recognize and urge people to interpret secularism as equal respect for all methods of worship. Secularism for him did not mean to be 'Dharma Nirapekshata'. It means to be 'Pant-Nirapekshata'. He was a golden link between the ancient India of our seers and the modern Nation.

BLACKSHIRTS! NO! IT IS A GREAT SPIRITUAL AND RELIGIOUS MOVEMENT

Come November-December-January, millions of devotees clad in black with the auspicious Irumudi (pair of knots) with shouts of 'Sharanam Ayyappa' will start moving towards Sabarimalai in South central Kerala, the abode of Sabarigirisha, Ayyappa Shasta as the Lord is variously called.

Millions of devotees, poor and rich, learned as well as unlettered, go through a 41 day penance abstaining from sex, meat and intoxicating drinks. They then undertake the arduous trek towards the temple, crossing forested mountains. Modern facilities have eased the strain of the pilgrimage, but that has not diluted the devotion of the faithful. Mystical, devotional, spiritual, religious, the Ayyappa movement is phenomenal. From what was a strenuous trek for a few thousand pilgrims, in a restricted period in the calendar, it has now grown into an great movement involving crores of devotees, spreading across states and countries.

If spontaneity is the hallmark of Spirituality, the Ayyappa movement is the most spontaneous spiritual upheaval. It is not 'managed' from

above, there is no central organization, and there are few facilitators.

Ayyappa is called Dharma Shasta,- one who upholds and t e a c h e s Dharma. Ayyappa is the child of Mohini

(Vishnu's female Avatar assumed for apportioning Nectar at the time of churning the ocean of milk) and Lord Shiva.

The Ayyappa movement has all the ingredients of a full scale spiritual movement. It has rituals, it has legends and puranas and it has philosophy, the philosophy of absolute surrender to the ultimate power. The movement has built itself into a brotherhood, All India Ayyappa Seva Sangham, a huge organisation has come up. But essentially the movement has remained a commonman's movement-of devotion, penance and surrender. (From inputs from various sources)



BANGARU ADIGALAR OF SIDDHA PEETHAM

Sri Bangaru Adigalar, a well-known Siddha Purusha of Melmaruvathur in Northern Tamil Nadu, is a great source of religious inspiration to millions of devotees in the southern states of India. His devotees have spread all over the world. Among the devotees, women wear red sarees and men sport red shirts. The movement is affectionately called the 'Red dress' movement. The devotees worship 'Shakti', accept Sri Bangaru Adigalar's divinity and meet systematically every Thursday to worship the deity in the local temple. These are called weekly worship groups.

Religious devotion, character building, organization of devotees, systematic and

sincere worship, coupled with proper religious and moral training have made the Red dress movement literally a Revolution. It brings people of various castes, various economic strata and social levels together.

The movement also has blossomed into a significant service movement, with schools, colleges, medical programmes and magazines.

Sri Bangaru Adigalar's Adi Parashakti fellowship is a important factor in strengthening the society and giving religious fervour, a discipline and a system.

(Compiled from 'Shakti Oli' Tamil)



ACHARYA SABHA

The meeting of the Hindu Dharma Acharya, Sabha held at Chennai on Nov.29, 30 Dec-1, 2003 passed the following resolutions.

1. It defined religious freedom as the freedom to follow one's own religion or faith and peaceful practices but does not include the right to denigrate any other religion.
2. It rejected the theory of religious conversion that converts by denigration of other religions.
3. The Sabha said the welfare of temples and use of funds and property of temples are of matters of great importance. Now the

income is spent by the governments' general budget and the funds lose their sacred identity.

4. The Sabha called for enacting common civil code for the country.
5. It urged the government and the society to ban cow slaughter.
6. It established Hindu Acharya Dharma Sabha and Dharma Samstha Pramukh Sabha, the federation of Dharmic institutions, engaged in economic and social upliftment of the Hindu populace.

(Adapted from Arsha Vidya Ashram News letter)



DR.PICHAJ SIVACHARYA

Dr.Pichai Sivacharya (53) of Pillaiyarpatti, Sivaganga district, Tamilnadu has been chosen for Hindu Renaissance award 2004, for bringing about a significant revolution among the priests of the South Indian traditions. His two schools in Pillaiyarpatti are turning out highly trained priests who undergo a stringent five year study programme. They are so knowledgeable, especially in the Agamas, that they have raised the standards of every temple in which they serve. And in a real innovation, Dr.Pichai has opened his school to non-brahmins. He has rendered exemplary service to Hinduism by reinvigorating the priesthood, and extending the *gurukula* system to Hindus born in other lands and in other castes.

There was a time when priests would not allow their bright children to be trained in the family profession. It was neither paying nor carrying much social respect. But when well-educated Hindus went to the west to make their fortunes, they felt the need for their temples and their attendant grandeur. They established hundreds of temples across the west, then sent for priests to India to serve the temples. Temple work in the West was paying well by Indian standards, and carried with it more respect. Those Western temples too wanted grand ceremony and started bringing priests by the dozens for their events.

This was a big change. Dr.Pichai's work started in 1980 began showing real promise. Good priests were in high demand and he was an expert in turning them out. Discipline at the school is exemplary. Students consider Dr.Pichai not only as a skilled teacher, but as their spiritual master and guru, an inspiring, powerfully motivated, leader.

Dr.Pichai discovered that the performance of grand *yagnas* and like rituals involving dozens of his students at a time, were very popular in India and a significant source of income for his schools which now has 220 students.

Such events were also held in the temples in the West, with the temple trustees demanding the quality seen in India. The graduates of Dr.Pichai's school are providing that highest quality world wide, with a resulting backwash, prestige and concerted effort on the part of many temples in India to improve their own ritual observances.

Dr.Pichai's students are trained well in the mystical arts of opening a door from this world to the higher worlds, through which the blessings of Gods and Goddesses pour out upon the devotees.

Dr.Pichai turns out such well and broadly trained priest by the dozens.

(From Hinduism Today Oct-Nov-Dec 2004)



SWAMI PRANAVANANDA AND THE BHARAT SEVASHRAM SANGH

Brahmachari Vinod (b 1897 d 1941) turned Swami Pranavanandaji Maharaj, the founder of Bharat Sevashram Sangha was an unusual person. He was variously described by his learned contemporaries as an epoch maker, possessor of limitless powers, seer, superman and omniscient, a creator unusually strong, divine personality of the age, seer of glorious India, a farsighted seer, a missionary for Hindu Regeneration, rebuilder of modern Hinduism, a great man of peerless talent and spiritual power, a beacon light, a person with the strength of the spirit, a true servant of India, a man with solution for the National problems, a Nation builder, a missionary in human service, a preceptor of the age, and the great apostle of selfless service.

To guard India from impending communal dangers, Swamiji founded Bharat Sevashram Sangha and planned to build Hindu Milan Mandirs and Rakshi Dals.

The organization did great service to Hindus who have been victims of communal riots before and on the eve of independence.

He was born in the village of Bajitpur in the district of Faridpur in present Bangladesh.

Reconstruction of dormant Hindu Society on the basis of ancient Indian heritage became the life's aim of this young saint. In the field of National reconstruction, Swamiji followed a method of his own. He did not approve of a political movement bereft of religion. He

realised that real awakening of a Nation would easily come through selfless service, celibacy and practice of one's own religion.

He built up the character of his disciples on sound moral foundation. He was a living example before them. He inspired them to pay special stress upon the reconstruction of the Hindu Society. They were to propagate the lofty ideals of Hinduism to humanity at large. He realised the necessity of building up a systematic organisation throughout the length and breadth of the country, in order to remove age-old defects in the Hindu Society. These units became the common platform for all Hindus.

The ultimate object of the Sangha is the reorganisation of the vast heterogeneous Indian masses into a homogeneous one, a compact and powerful Nation, rebuilt on the basis of its ancient spiritual and cultural ideals and traditions, skilfully readjusted and readapted to suit the changed circumstances of the present scientific age.

With this object in view, the Sangha undertook a comprehensive plan of work. The multifarious activities of the Sangha that gradually run through the entire rank and file of the society can be classified into some distinct lines.

- a) Propagation of the Traditional spiritual and cultural ideals in India and outside, through individual sannyasin preachers and also through

SECTION - 1

- organised preaching parties of the monks and selfless workers. Restitution of the spiritual and religious atmosphere there.
- b) Reformation of the holy places of India
 - c) Spread of education based on Indian moral and spiritual idealism
 - d) Humanitarian services of all kinds
 - e) Reorganization of the disintegrated Indian masses and reconstruction works of the Indian society (including removal of untouchability, welfare of the backward classes, uplift of the tribals as an integral part of the Indian Society and defence party organisations.
 - c) Students' Homes under the guidance of the Sannyasins of the Sangha.
 - d) A department for producing and circulating character building type of literature.
 - e) Organising discourses and lectures to create an atmosphere for introducing a system of ideal education in the schools and colleges.
 - f) Bringing students and youth in personal touch with the Sangha.

The Sangha since its inception has been running its educational activities in various ways.

- a) Brahmacharya Vidyalayas, run according to the ancient Gurukul system of India.
- b) Free primary schools, Night schools, Junior high and multilateral Higher Secondary Schools.

Now the Sangha has established itself as a Nationwide organisation doing great service to make India Samartha. Bharat Sevashram Sangha has activities in Suriname, Jamaica, Barbados, Trinidad, and Guyana.

The other centres are in Canada, USA, Trinidad, Guyana, Bangladesh and 40 centres in India.

(Adapted from "Acharya Pranavananda in the Eyes of the learned" – Swami Shantananda, Bharat Sevashram Sangh, Hyderabad 29 – 1975 and Ideals of Indian Education and culture, Swami Vijoyananda, Bharat Sevashram Sangha Calcutta 19, 1962-)



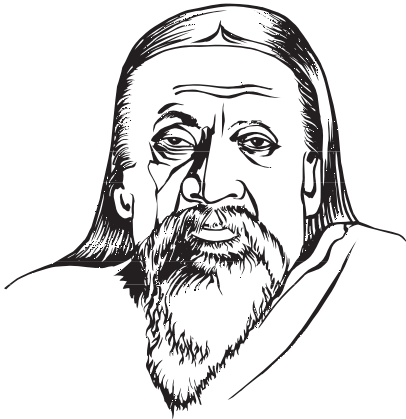
MAHAYOGI SRI AUROBINDO (1872-1950)

One of the greatest pioneers of the Indian Renaissance, Sri Aurobindo was educated in England and was proficient in Greek, Latin and English. Yet there was no greater or more brilliant exponent of Indian culture from the point of view of the Vedic spiritual tradition. He was no philosopher content with weaving verbal rhetoric. He was a yogi, an integrated personality whose life was a *sadhana* towards realizing the Self-divine. He has been described as the “Poet of patriotism” and the “Prophet of Indian Nationalism.” Aurobindo envisaged the emergence of a *superman*, the truth-conscious being, one who has realized the Divinity within himself as the goal of human evolution.

Born on August 15, 1872, Aurobindo attended schools in England from the age of

seven. He returned to India in 1893, taught French and became Professor of English at the Baroda State College. He was in Baroda for 13 years. Aurobindo was drawn into politics in 1905 when Bengal was partitioned. He was associated with the Bengal daily *Yugantar* and the English daily *Bande Mataram*. He followed Tilak in his political thinking and was with the extremists at the Surat session of the Congress in 1907. Aurobindo was arrested in 1908 for revolutionary activity and acquitted after one year. He became a spiritual aspirant during his imprisonment and chose to pursue a spiritual mission. He went to Pondicherry and stayed on there till his Mahasamadhi on December 5, 1950. He wrote copiously in his inimitable, elevated literary style.

(From ‘Hinduism Today’)



AUROVILLE

Inspired by the Vedic and Nationalistic teachings of Shri Aurobindo and the Mother, an international community has started working at Auroville near Pondicherry. Applying spiritual values of efficiency, sincerity, fellowship and love to modern technologies and bringing this

combination to serve the society in a holistic manner, Auroville has made significant contributions in the fields of environmental awareness, ecology, waste-land reclamation, afforestation, cost effective housing, water management, educational psychology and related fields.

SAINT SHRI ASARAMJI AND YOGA VEDANTA SEVA SAMITI

The Yoga Vedanta Seva Samiti of Sri Asaramji spreads the concept of *Vishwamanava*, the Universal Man. He talks about the personal, moral and ethical, social, National and spiritual duties and responsibilities of Man. He exhorts man to realise his true nature, while discharging the worldly duties.

Mass-awakening programmes are undertaken by the Saint and his institution. He uses the medium of traditional festivals such as Raksha Bandhan, Guru Poornima, Sat Sangh, Narayana Seva, Daridra Narayan Seva and

Krishnajanmashtami, to awaken the spiritual nature of the common people. Thousands throng to his meetings, Satsanghs, Kirtan programmes and Homam programmes.

Swamiji emphasises on equality, happiness, humility and generosity as divine virtues.

He effectively employs, TV, newspaper, cassettes, (both audio and video) and the ashram magazine Rishi Prasad (Hindi) to take his message to the millions of faithful devotees.
(Compiled from Rishi Prasad (Hindi))



Dr.VEERENDRA HEGGADE

Dr.Veerendra a Jain, is the guardian of Sri Manjunatheswara Temple located in N W Karnataka, 44 kms from Mangalore. He acts as the local judge, a custom followed over 800 years. His decisions are accepted as law and honoured by the civil courts of the country.

Dharmasthala (Abode of Dharma) the place is called. It is also active with many social service programmes all led by Dr.Veerendra. Five days a week, thousands of guests are served free, high quality meals. Clothes are distributed as well. Financial assistance is given. Mass weddings are arranged. Hospitals, 40 schools from primary to

college also function. One of the recent successes has been the rehabilitation of 1800 alcoholics, who were inspired by daily bhajans at Dharmasthala, to give up their harmful addition.

The temple spends around 10 crores of rupees annually, on religious and service activities.

In this Siva temple, the priests are Vaishnavaits and the Trustee is a Jain.

Shri Heggade also has brought back 21 ancient temples from ruin.
(Hinduism Today)



THE DIVINE LIFE SOCIETY

Sri Swami Sivanandaji Maharaj was in his *pre-sannyasa* years Dr.V.Kuppuswami of Pattamadai, Tirunelveli district, Tamil Nadu, India. He was serving as a medical doctor in Malaya, when he got he inspiration to seek God and serve humanity.

He was initiated into *Sannayasa* by Swami Vishwanandaji of Hrishikesh in 1924. After long spells of *Tapasya* and a life of *Parivrajaka*, came the intense teaching period. He taught, yoga, Vedanta and bhajans to seekers through, lectures, satsanghs, radio talks, pamphlets, books and journals. The movement gathered momentum, spread countrywide. The Divine Life Movement, the sole purpose of which was to divinise the lives of human beings as instructed by our ancient *rishis*, saints and monks was born in 1938.

Swamiji was a prolific writer. He wrote more than 200 books on yoga, vedanta and Indian Culture between 1929 and 1963 when he shed his body. His books included commentaries on the Bhagawad Gita, the Principal Upanishads, the Brahma Sutras, Patanjali's Yoga Sustras, and Narada's Bhakti Sutras; scores of books on the practice of yoga and Vedanta; and many volumes on health and vigour. He wrote poetry, drama, letter and essay, story and parable, aphorism and lecture-all media were adapted by him to spread the knowledge of Divine Life. Then he started the great task of training disciples.

Sivananda inspired his students by the force of his own personal example. His life was an open book, all could see him, humble, serving, praying, singing kirtan, bathing in the Ganga, prostrating to everyone, remembering God always, cheerful all the time, not attaching importance to worldly happenings and living in the spirit of the *Mahawakya Tat Twam Asi* (Thou Art That). His students learnt many things just by observing their Master.

Swami Sivanandaji gave *sannyasa* liberally to people, creating a large band of *sannyasi* disciples who are manning the Divine Life society in hundreds of its branches all over India. His disciples were of great eminence. Swami Chidananda, Sri Krishnananda, Swami Chinmayananda, Swami Satyananda, Swami Purushottamananda, Swami Nirmalananda, Swami Omkarananda, Swami Venkatesananda, Swami Sivapremananda, Swami Pranavananda, Swami Vishudevananda, Swami Gnanananda, Swami Jotirmayananda and others became masters in their own right and established ashramas and spiritual centres in India, Australia, South Africa, America, Europe and other places.

Today the Divine Life Society and its offsprings have become together a world wide movement bringing peace, enlightenment and happiness to millions, through lectures, personal training and publications. This has kept alive the eternal message of *Sanatana Dharma*, *Samartha Bharata's* gift to humanity.

(from Divine Life Society Publications)



THE YOGA INSTITUTE-SANTACRUZ, BOMBAY

Shri Yogendra founded the Yoga Institute Santacruz, Bombay around 1932. The purpose of the institute is to investigate the secret but traditionally known practices of yoga, both academically and scientifically in regard to their various claims and also their utility in modern life.

Shri Yogendra acquired directly all the *hatha yoga* practices from the great *yoga* teacher Paramahansa Madhavadasji of Malasana (1798-1921). Shri Yogendra applied some of them to thousands of students and patients under medical supervision in India, America and elsewhere. The ancient wisdom has now been compared with modern sciences by textual references and corroborations where possible; and it is after detailed scientific investigation carried on by Yogendraji in cooperation with eminent scientists that he has given the final shape to a methodical study of the subject for its incorporation into one's daily life.

Yogendraji started the Training institute of *yoga* recognized by the Government for the purpose of training teachers of *yoga*.

Yogendraji is certain that when the science of *yoga* will be studied by the scholars and scientists as closely as they have explored other branches of India's ancient civilization, a new field of investigation will open before them of wider extent than any other that has yet been explored or even known to exist.

The Yoga institute of Santa Cruz is a recognized research institute. It accepts scholars for academic, scientific, and education researches in yoga. Competent guides, library and lab facilities are available.

One-year *yoga* certificate courses, 21 days *yoga* courses, six-month certificate courses and provision for teacher member of the academy are available.

A Yoga hospital, *yoga* education to the general public, publication of books and journal are the other activities of the institute. The institute is presently looked after by Dr. Jayadeva Yogendra.

(From the Institute Publications)



THE FRENCH REVOLUTION

Karmayogi

Revolutions are landmarks in history. From the point of view of Spiritual evolution, revolutions are critical stages in the evolution of the earth. Mother says Sri Aurobindo was present on earth at every such critical stage. She too was with Him invariably. He says the French Revolution originated in the Himalayas. Anything fundamental anywhere in the world should originate in the Spirit, just as any new product of technology should originate in scientific research. Our science is called experimental science. Some people think it is material science, as it is the science of the material world. The phrase 'Life science' has come to stay. What the world needs is the Science of Life, a branch of knowledge that studies how life behaves. It may not be just psychology, but will include psychology. Psychology studies the behaviour of the Mind. Should a subject called 'Science of Spirit' come into existence, the occurrence of revolutions as the unfolding of the earth's evolution will be seen.

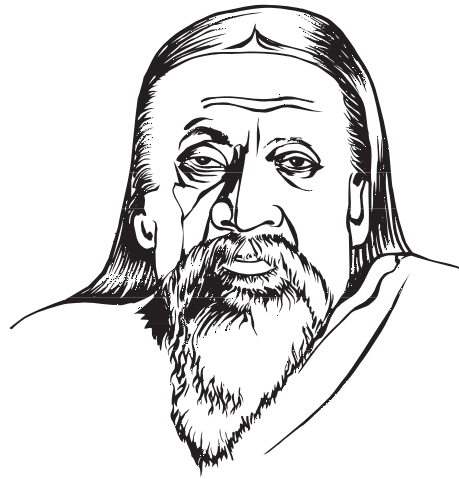
Sri Aurobindo has remarked on India's evolution that if is a nation destined to lead the world spiritually. Apparently they are stray remarks inserted in various places. Only he who has the spiritual vision of what Sri

Aurobindo stands for can know the significance of those statements and how they all go together around a central vision.

The following are some of those statements that I can recollect now:

1. Nature resorted to foreign invasion to unite India geographically, as all her previous efforts had failed.
2. India became FREE in the subtle plane in 1910.
3. Indian FREEDOM would lead to the freedom of Asia.
4. World union will come into existence.
5. India will become the Guru of the world.
6. Mother has said that France will collaborate with India in this mission.
7. Indian bodies carry Spiritual light.
8. America is in the vanguard of the earth's evolution. The Americans exhibit a curiosity to know of the evolutionary possibilities.
9. Sri Aurobindo said that he has played role in the world wars, particularly in Ireland and Turkey. He also had a little to do with the Russian Revolution.

(The New Indian Express)



KAIVALYADHAMA

Kaivalyadhama is a *yoga* research and propagation institute founded by the sage Swami Kuvalayanandaji in 1924.

The institution runs a *yoga* ashram at Lonavala in Maharashtra.

Kaivalyadhama Shreeman Madhava Yoga Mandir Samiti runs the G.S.College of *yoga* and cultural synthesis (estd in 1950). The college runs a one-year Diploma course in *yoga* education and a certificate course in *yoga* (six weeks).

The Kaivalyadhama also runs a research centre to teach M.Phil / PhD courses in physical education with *yoga* as a core subject.

The Dhama conducts *yoga* camps, short-term training programmes for teachers and students of academic institutions throughout Maharashtra.

The institution is known for its *yoga* training designed to the needs of Naturopaths, Physical Education teachers, general teachers, *yoga* therapists, executives of the corporate sector, musicians and music teachers, psychologists, police officers, etc.

It runs special classes on Sanskrit to help *yoga* students in understanding texts.

All these activities are carried out in addition to research and teaching activities in *yoga* at the Dhama.



The research work includes, *yoga* and human resource development, *yoga* teaching methods, textual studies, *yoga* and obesity, *yoga* and heart, *yoga* and body flexibility, studies in *Shavasana*, *yoga* and sports.

Kaivalyadhama publishes and research quarterly magazine “*Yoga-mimamsa*” in English.

(From ‘*Yoga Mimamsa*’)



A.C.BHAKTI VEDANTA SWAMI PRABHUPADA AND THE HARE KRISHNA MOVEMENT

Born in 1896 in Calcutta, India, Bhakti Vedanta Prabhupada met his Guru Sri Bhakti Siddhanta Sarasvati Gosvami in 1922. His Guru had founded 64 Gaudiya Maths. Srila Prabhupada became his student and was initiated in 1933 for whole-time work of propagating Vedic knowledge. He wrote a commentary on the Gita in 1937 and started an English journal in 1944. This is now printed in the west by Prabhupada's disciples. It is published in 19 languages of the world.

1950 saw Prabhupada, now given the honorary title of Bhakti Vedanta, going to the Holy Vrindavana and beginning a life of austerities. He renounced the worldly life in 1959. He wrote a sixty-volume commentary, his master piece, on Srimad Bhagavatam.

In 1965, Prabhupada came to U.S. to fulfil the mission of his Master – to propagate the Vedic knowledge in English. He wrote another set of sixty volumes of authoritative translations, commentaries and summary studies of the philosophical and religious classics of India.

In 1965, Prabhupada came to the US as a penniless pilgrim. After almost a year of great difficulties, he established the International Society for Krishna Consciousness in July of 1966. Before his passing away on 14-11-1977, he guided the society and saw it grow to a world-wide confederation of more than one hundred



asramas, schools, temples, institutes and farm communities.

In 1968 Prabhupada created New Vrindaban, an experimental Vedic community in the hills of West Virginia US. It was a success. Now several similar communities have been started in India and abroad.

In 1972, Prabhupada, started the *Gurukula* schools in the West-Dt. Dallas-Texas. Ten such *Gurukula* schools have been started since.

Large International Cultural Centres, planned Spiritual cities and temples, in Vrindavana, Bombay and elsewhere, have been constructed.

Sri Prabhupada's most significant contribution is his books. Highly respected

by the academic community for their authoritativeness, depth and clarity, they are used as standard text books in numerous college courses. His writings have been translated into 28 languages. The Bhakti Vedanta Book Trust (1872), publishing exclusively his books, has become the world's largest publisher of books in the field of Indian religion and philosophy.

In just 12 years, Sri Prabhupada circled the globe fourteen times on lecture tours, that took him to six continents. His writings constitute a veritable library of Vedic philosophy, religion, literature and culture.

Today, the Hare Krishna movement (ISKCON) has made Negro Sannyasis, has built a Krishna temple in Moscow, has penetrated the bamboo curtain in China, and has converted a professor of Islamic law in Teheran (Iran) University to Ravanaridasa, a staunch Krishnaite. Chanting "*Hare Krishna Hare Krishna Krishna Krishna Hare Hare, Hare Rama Hare Rama Rama Rama Hare Hare*", ISKCON members have sold Bhagawad Gita copies to those standing in queues in Cinema theatres saying that Mahatma Gandhi was inspired by the Gita. Such is the enthusiasm of the followers of Srila Prabhupada.

(Extracts from ISKCON publications)



THE ANSWER LIES IN YOGA, SAY EXPERTS WORLD HEART DAY

People should follow yogic lifestyle as there was considerable evidence to demonstrate that yogic practices could halt, arrest and even reverse the process of heart disease, says director of Haffkine Institute Dr.S.M.Sapatnekar.

Speaking on 'Reversal of Heart Diseases: The Yogic Way at the yoga institute here, Sapatnekar said on the World heart Day 26/9/04, "I trust that rectification of the disease process is merely a fringe benefit as yoga is a way of life and it changes oneself." Director of the institute, Jayadeva Yogendra said, "Loss of balance (prajna-aparadha) can occur when spiritual values are given a go-by, hence the enemy of a cardiac patient is

not just fatty food or cholesterol, stress or hostility, but crass materialism, selfishness, egoism, negative emotions and all kinds of excesses." One should turn towards spiritualism for a long, healthy and happy life, Yogendra said. The president of the International Board of yoga, Hansa Jayadeva said, "institute's" caring heart project', has made people "better human beings—more caring, loving and relaxed with better will power to handle any stress". Meanwhile, cardiologists in Mumbai urged the government to set up a preventive cardiology council to carry out extensive education and awareness programme in the country in collaboration with the NGOs.

(P.T.I)



SWAMI RAMA AND HIS HIMALAYAN INTERNATIONAL INSTITUTE OF YOGA SCIENCE AND PHILOSOPHY

Swami Rama, the founder of the Himalayan International Institute of Yoga Science and philosophy was born in 1925. He was ordained a monk early in his childhood in the Shankaracharya *Parampara* (tradition). He also studied Western Psychology and medicine and taught in Japan. He came to the US in 1969 to teach *yoga*. He has written extensively on *yoga* and spirituality.

The Himalayan institute, founded in 1971, combines Eastern and Western teachings and techniques to develop education, therapeutic and research programmes for serving people in today's world.

The goals of the Institute are to teach meditational techniques for the growth of individuals and their society to make known the harmonious view of world religions and philosophies and to undertake scientific research for the benefit of the human kind.

With its Headquarters at Pennsylvania in US, the institute conducts seminars, lectures, workshops and classes.

The residential and self-transformation programmes provide training in the basic *yoga* disciplines, diet, ethical behaviour, *hatha yoga* and meditation.

There a programme in holistic studies offers a unique and systematic course combining Western Empirical Sources and Eastern Introspective Science.

Stress management, physical fitness courses, and an annual international congress devoted to the scientific and spiritual progress of humanity, are the other programmes.

The psycho-physiological lab of the institute specialises in research on breathing, meditation, holistic therapies, and on stress and relaxed states. Exercise stress testing and psycho-physiological measuring, are conducted in the labs. Brain waves, patterns of respiration, heart rate changes, and muscle tension are measured. The staff investigates Eastern Teachings through studies based on Western experimental techniques.

Swami Rama's books include those on Upanishads / *Yoga*, *Bondage of Karma*, *Japji*, *Life Hereafter*, *Bhagawad Gita*, *Sukhamani Sahib*, *Patanjali*, *Bhakti yoga*, *Hatha yoga* etc.

The book on Diet and Nutrition is a classic on inter-disciplinary studies on Food.

Swami Rama and his co-workers bring a scientific temper to studies in *yoga*.

(Collected from the Institute Publications)

YOGIRAJ VETHATHIRI MAHARISHI AND HIS SKY

Yogiraj Vethathiri Maharishi feels that Raja yoga is best suited for our age and that it is the only hope for the modern man with his awakened and questioning intellect.

He has developed the Simplified *Kundalini Yoga* (SKY) for helping the common man.

He has also developed the simplified *Kaya kalpa yoga* as an adjunct to an advance on SKY.

Swami Vethathiri (b 1911) an ordinary weaver turned yoga-researcher founded the World Community Research centre in 1958. The organization has branch-centres all over India, in the USA and in Japan.

He has also founded the World Peace Trust with the objective of building up peace-consciousness in all parts of the globe. He teaches *Advaita* and *Raja Yoga* in a manner to reach out to all sections of the society, hence he is known as a common man's philosopher.

A system of simple physical exercises, *Simplified Kundalini Yoga*, and steady introspection, a combined practice of these three, would ennoble man and lead him to realisation says Swamiji. And since he himself lives out his teachings, his words, spoken and written, have a profound impact on all who come into contact with him.

(Adapted from 'Hinduism Today')

DURGA GOES GLOBE-WIDE

Come *Durga Puja*, which falls in October, the Goddess will leave Her abode in the Kailash and go globe-trotting—from California to Tokyo, from Calgary to Cape Town. With the Bengali Diaspora spreading its wings the world over, the community's own *Durga Puja* is becoming more and more popular in almost every corner of the world.

Up from last year's export of 26 Durga idols, this year artisans from the famed Kumartuli are sending 33 idols to leading cities in the United States, Japan, Canada and South Africa.

Clay artisan

Among the exporters of the idols from the dingy lanes of Kumartuli is clay artisan Amar Nath Ghosh. While Mr.Ghosh exported 18 idols to the West last year, this year he is sending 21.

“Eighteen of my idols have already been shipped and one is being despatched today. Two of them are yet to be sent,” said

Mr.Ghosh, whose nine idols made of pith are finding patrons in the US and the rest are being shipped for Canada, the UK, Germany, Italy, Malaysia, Australia and New Zealand.

The boom in the pith, glass-fibre and paper pulp Durga idols is the result of the “explosive growth” in the popularity of the puja in the UK and the US.

Another artisan, Montu Pal, is busy managing the export of his idols to Dallas, Leeds, Berlin and Mauritius.

Mr.Paul, who first began exporting his fibre-glass idols four years ago, said he was fighting to meet the deadline for his Baltimore and Leeds-bound consignments.

Gopal Chandra Sarkar and Amar Pal, whose idols are finding takers in Rome, New York and Stuttgart, also confirmed that global demands for Durga idols from Kumartuli are increasing every year.—UNI



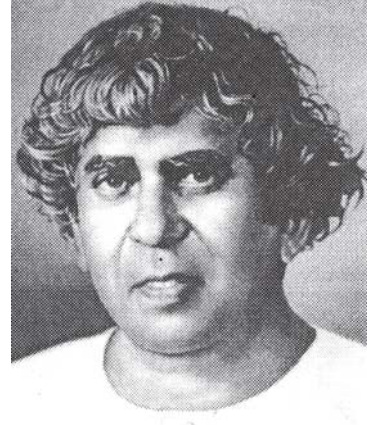
SADHU VASWANI MISSION

Sadhu T.L.Vaswani (Dada) was born on 25/11/1879 in Hyderabad Sind, now in Pakistan. Even as a child he was compassionate, kind, and prayerful. He was a brilliant scholar and became a professor in Kolkata.

At the age of 30, he went to Welt congress, the world congress of religions in Germany, stirring the hearts of his listeners with a love for India and its spiritual quest. At the age of forty, when his mother passed away, he renounced the world, to be “an humble servant of India and the Rishis.” He entered the freedom movement, wrote articles and books on India’s political and spiritual freedom. Some of his books were proscribed by the British. Dada Vaswani started youth centres, Shakti ashrams and conducted youth conferences. He later tried to build spiritual bridges between the East and the West, winning allround admiration for his work.

Turning his attention to the field of spiritualised education, Dada Vaswani founded in 1933 the Mira movement in Education with active centres in Poona and Sind. The emphasis in the teachings passed on in Mira Educational intuitions is that education is a thing of the spirit and that the end of all knowledge is Service-service of the poor and the lowly, the sick and afflicted ones. Under the direct supervision of Dada Vaswaniji, charitable institutions, a Pathological lab, St.Mira’s College and St.Mira schools were set up to serve humanity. Welfare fund for the displaced persons, Shanti Seva Niketan for women, Bhandara, a feeding centre for the poor, Shanti Clinic, a diagnostic centre,

and a Jiva Daya department dedicated to the welfare of birds and animals were the other institutions he built.



Living upto his message of love, prayer and compassion, Dada was a great source of comfort to the millions who had to leave everything and resettle in the aftermath of the tragic partition. He continued to radiate love and compassion upto his last breath 16-1-1966. His memory continues to inspire millions. Dada’s visit to the Kotwala refugee camp inspired thousands to rebuild their lives. He started a paper “*Jago*” (Awake) and recorded his message for the suffering. His satsangs look the shape of Mira Sat Sangh Association in 1961.

After the Mahasamadhi of Dada, Shri J.P.Vaswaniji a close follower of Dada, is leading the movement. Shri J.P.Vaswani works through the mission, now renamed Sadhu Vaswani Mission. He and his band of dedicated workers, travelling all over the world, try to bring spiritual consolation to the millions who have been uprooted and transplanted elsewhere at the time of partition. Providing the cultural umbilical cord to the motherland, to those who are scattered across the world, Sadhu Vaswani mission, provides spiritual, cultural, medical, educational services to the people.

(Sadhu Vaswani Centenary Souvenir)

BHAGAWAN SRI RAMANA Sustainer of Spiritual Reality

Dr.S.Radhakrishnan

Bhagawan Sri Ramana's Realisation is unique and unparalleled in the annals of history. He realised in his boyhood the Eternal Truth the self-supreme, without the aid of initiation by any external Guru, without the need for a theoretical knowledge or study of the Sastras, and Scriptures and without having resorted to any kind of Sadhana, other than his spontaneous realisation of the eternal nature of the 'I' the self-supreme. He sat in the State of Transcendental silence at the Hill of the Holy Beacon Arunachala.



indirect or inferential knowledge. For them God is an Abiding Fact, a Living Presence, and in the consciousness of this fact their whole

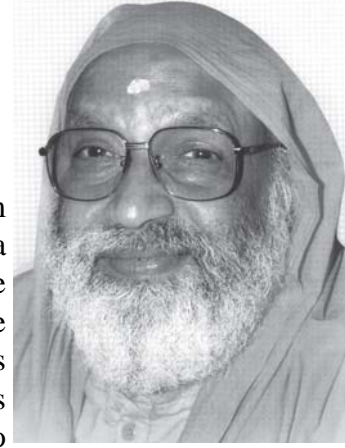
It is somewhat surprising that many students of religion assume that the religious seers, the true representatives of religious genius, belong wholly to the past and we to-day have to live on the memory of the past. If religion is a living truth, if it has any vitality, it must be capable of producing men who from time to time bear witness to the truth and confirm and correct from their own experience the religious tradition. When the springs of experience dry up, our love for religion is a mere affection, our faith a belief and our behaviour a habit with no reality behind it. In the Indian religious tradition religion has meant not an imaginative or intellectual apprehension of Reality but its embodiment in regenerated living. Religion should energise our consciousness, transform our character and make us new men. The truly religious are those who have solid hold of the unseen Reality in which we ordinary men merely believe. They are not freaks proclaiming the reality of spirit, which is esoteric and intense. They tell us that they have a direct knowledge of the Real of which we have

existence is transformed. These artists of the inner life are of different types. Some are full of poetry and music; others are vigorous men of action; still others are solitary souls. Despite these differences they walk the same road, speak the same language of the soul and belong to the same family.

The Indian tradition has been kept alive by seers who were born in every age and incarnated the great ideal. We have such God-engrossed souls even to-day. It is our good fortune that we have with us to-day a living embodiment of God-centered life, a perfect image of the life divine in the mirror of human existence. Sri Ramana Maharshi is not a scholar; he has no erudition, but he has wisdom that comes from direct experience of Reality, the wisdom we acquire through the discipline, not of intellect but of one's nature, through chastity, poverty and obedience. The possession of this wisdom yields the fruits of spirit, love and purity, courage and humility, courtesy and holiness. (Extracted from Aradhana Souvenir of Ramanashram)



SWAMI DAYANANDA SARASWATI AND THE ARSHA VIDYA GURUKULAM



Arsha Vidya Peetam, Rishikesh, Arsha Vidya Gurukulam Smriti Seva Trust, Anaikatti Coimbatore, Arsha Vidya Gurukulam Institute of Vedanta and Sanskrit Saylorsburg, Pa-USA are all founded by the inspiring Swamiji of Rishi Parampara, Swami Dayananda Saraswati Maharaj.

Swamiji started his life as a journalist. He was accidentally exposed to a lecture on the Upanishads by Swami Chinmayananda and this event created a momentous change in his life, propelling him towards the Himalayas and a life devoted exclusively to the spiritual pursuit. His teaching is not merely an exposition of a theory or philosophy. He makes every student see the truth, as clearly as the eyes see, that sorrow is not the lot of the humans. This truth revealed in the Upanishads is not a matter of conjecture, but a verifiable fact.

His most significant contribution has been the teachers he has created to teach Vedantah, each adhering strictly to the traditional method of teaching. Their ability to make the teaching easily understandable by communicating clearly in English and other modern languages, while preserving the ancient traditional teaching in its pristine form is itself a tribute to Swamiji as a teacher of teachers. Inspired by the Swamiji the All India Movement (AIM) for Seva, was launched with a view to caring the people living in remote areas, away from the

mainstream Society. This a movement for the people and by the people. This movement is dedicated to

providing health care, primary education, nutrition for children, women empowerment, providing drinking water facilities etc. The Movement plans to open at least one hostel for poor students in every district of India. Quite a few hostels have already come up.

Swamiji's role in uniting *acharyas* whose maths and *adheenams* have been propagating our Dharma for more than thousands years has been remarkable. Similarly maths and missions of recent origin have also been brought together. The purpose is to raise the voice of the Nation against Religious Conversion, cultural degradation and to channelise the positive forces of service and value-education. Swamiji has also taken up a broader canvas by trying to bring all the non-converting, non-aggressive religions of the world. The purpose is to proclaim that religious conversion is a violence against humanity and to say that every religious belief has a right to survive and be practised by its adherents. In this manner Swami Dayananda Saraswati and his followers carry on the twin tasks of defending and propagating the values preached by our Rishis. (Compiled from The ashram publications)

GANAPATI SACHCHITANANDAJI MAHARAJ

V.G.Ramachandran

Ganapathi Sachchitanandaji was born in 1942 to a father who had almost renounced the world. The child was named Satyanarayana. After his mother's death he moved to Andhra and lived on alms in the discipline of a Brahmachari. After two years in total isolation, he assumed the name of Ganapathi Sachchitanandaji and started preaching the truths of Sanatana Dharma.

He teaches Yoga, Bhakti and Jnana to his disciples. His trust teaches to the people the

Veda and the Vedic literature, music and related tools of bhakti, trains people, holds Vidwat Sadas and seminars, and undertakes humanitarian activities.

He is a Nada Yogi, plays on the Veena, to the delight of his world-wide band of followers.

Swamiji's *havans* are very well attended. Swamiji works with his headquarters at the base of the Chamundi hills in the Mysore-Nanjangud road.



B.K.S. IYENGAR AND 'THE YOGA DIPIKA'

Yogacharya Bellur Krishnamachar Sundararaja Iyengar learned *yoga* from great masters and took great strides in popularizing *yoga*. He wrote the classic "Light on Yoga" (*Yoga Dipika*) and established the Ramamani Iyengar memorial Yoga Institute. He is acclaimed as a *yoga* artist with great control over his body and mind, backed by a wealth of wisdom and humanity. His career as a *yoga* teacher saw him as a man of great influence. He taught *yoga* to great men like Jayaprakash Narayan, philosophers and savants like J.Krishnamurti, internationally famous musicians like Yehudi Menuhin and Clifford Curzon and generals



of Indian Army-and the pupils of his pupils number several thousands. *Yogacharya* Iyengar never went through any university training. Yet what he acquired through his single devotion to *yoga* for over 40 years now provides courses for several universities abroad.

He has now completed a companion volume to his *yoga* book – "Light on Pranayama."

Iyengar's work in popularizing and standardising *yoga* practices has helped the Indian *Yoga* tradition establish itself as a scientific, learnable, repeatable, and profitable art and science. (Compiled)



BHARATIYA VIDYA BHAVAN

Bharatiya Vidya Bhavan's book university, its journals and its educational programme form a comprehensive package. They are veritably the well-spring of the best scriptural, spiritual, literary and political wisdom of the world's oldest civilization.

The Bhavan deliberately acts to establish a symbiotic relationship between the Pre independence Bharat and the Post-Independence country.

Bharatiya Vidya Bhavan was born nine years before Independence.

The imminence of freedom spurred Kulapti K.M.Munshiji to speculate on what kind of free India it would be. Will the likely casualty of freedom be India's time-honoured culture, traditions and scriptural wisdom? Preserving and promoting Bharatiya Vidya was the first priority to Munshiji. Spreading learning became the Bhavan's principal goal and activity. With Bhavan came its book university.

Bhavan had the blessings of Mahatma Gandhi, Rajaji, Nehruji and Sardar Patel. Episodes from the epics Ramayana and Mahabharata, analysis of the Vedas and Upanishads, prayers to Gods of various saints as Sankara, and Ramanuja to Rama Krishna Paramahansa and Vivekananda, embellished the pages of Bhavan's books and

journals, as did the contemporary writings of Mahatma Gandhi, Annie Besant, Tilak, Gokhale, Tagore and Subrahmaniya Bharati.

ACTIVITIES

1. Schools, Colleges, Engineering Institutions.
2. Management, Public administration institutions.
3. Computer education centres.
4. Correspondence courses on Vedanta, Gita, Indian culture.
5. Sanskrit education / Cultural graded courses
6. Book university, Journals, Publication of Books of permanent value
7. Promotion of Indian Culture among Youth / Students
8. Preservation of manuscripts.
9. Projects for rewriting Indian History, republishing accounts of Freedom Movement
10. Schools of dance, music.
11. Kata Kalakshepam Training College
12. Opening Centres abroad, New York, London, Sydney centres are already functioning.
13. Teachers training and Teacher's orientation
14. Jainology Research / Propaganda

(Compiled from the issues of The Bhavan's journal)



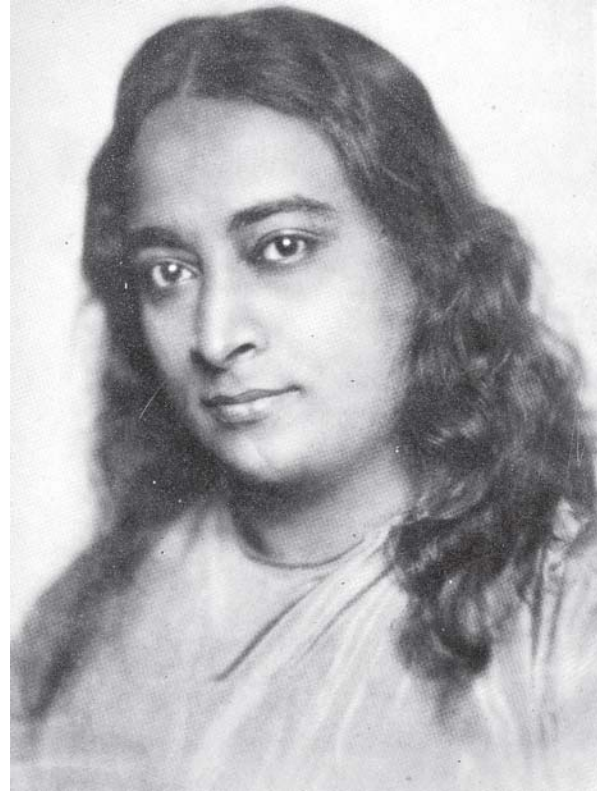
YOGODA SATSANGA

The Yogoda Satsangha (YSS) is a global organization training people in *yoga* and meditation. It was founded by the great *yogi*, Paramahansa Yogananda ('Autobiography of a Yogi' frame). Now the movement is headed by Daya Mata.

The organization is devoted to healing of Body, mind and Soul-Healing of body of disease by proper diet, and recharging the body with God's all powerful cosmic energy, removing in harmonies and in efficiency from the mind by concentration, constructive thinking and cheerfulness; and freeing the ever perfect soul from the bonds of spiritual ignorance by meditation.

The Yogoda Satsanga and Self-Realisation Fellowship work with headquarters at Ranchi, India. Apart from dissemination of Sri Paramahansa's teachings, the YSS runs schools and hospitals, publishes books and journals and trains the public through direct contact and through the audio visual media.

The YSS also runs centres at Igatpuri, Pune, Surat, Puri, Chandigarh, Dakshineswar (Kolkata) Ranchi and other places.



YSS sannyasis and brahmacharis travel all over the world, to teach (aspirants including children) the essentials of the Master's teaching through KRIYA YOGA, a technique developed by the Master.
(From Satsangha magazine-Self-Relisations)



SRI RAMAKRISHNA TAPOVANAM

Dr.K.Subrahmanyam

A grove or garden is rich in proportion to its number of trees and the fruits they produce. A family is great in proportion to its number of individuals and the quality of their out-put. A country is glorious in proportion to its institutions and the individuals of high quality contributions. India from times immemorial has been rich on account of her institutions and individuals.

Individuals establish institutions; and institutions in turn regulate and elevate individuals. They both contribute to the glory of the nations. The *rishis* of India have been great researchers. They have not only discovered great truths, but established institutions for the rest of the individuals to realise the same truths and ascend to the heights of peaceful co-existence, social harmony and spiritual splendour. Morality and ethics are very well taken care of. Material prosperity has never been neglected though it is never given a priority over the other. The lasting peace is spirituality; and momentary pleasure is materialism. In between there are individuals and institutions to lead us through moral codes of conduct and ethical bonds of humanism in a well-knit social living of harmonious advancement. And that is *dharma* a balanced and methodical enfoldment of the self-within through action, emotion and intelligence. *Varnasrama dharma* is the greatest institution evolved by



the *rishis* of India for realising the goals of mankind.

All religious establishments, schools of philosophic thought and educational institutions in India have a common goal and that is spirituality. If India is to forget its ideals and lose direction, there is no redemption. As and when there is a cyclonic whirl-wind to eclipse the beacon light of spirituality and cut the roads leading towards it, there are great rishis reborn to brighten the torch and lead the way. Buddha, Mahaveer, Gurunanak, Chaitanya Prabhu, Dayananda Saraswati, Adi Sankara, Sri Ramanuja, Madhvacharya, Vallabhacharya, Sri Ramakrishna, Sri Ramana and Swami Vivekananda and a host of spiritual stalwarts, out of compassion for society, established institutions, which in turn have contributed immensely for the national glory.

When there was a wave of materialism and pseudo-rationalism disturbing the social harmony and spiritual pursuits in Tamilnadu, there arose a sage, of Swami Chidbhavananda from out of Sri Ramakrishna order to establish an institution for a cultural revival, educational reform and an overall renaissance in every walk of life with a spiritual goal. Sri Ramakrishna Tapovanam is the organisation founded by him in 1942 with a specific purpose. Today all over the state there is an awakening in

the public. People in general and students in particular who have been moulded by the Tapovanam are remarkably different from the common folks. Stones have been transformed into saints. Superstition and selfishness have been greatly erased by the ardent efforts of the institution.

India has an excellent system of education. And it is “Indian national education” evolved by the *rishis*. Because of certain foreign influences, its direction has been diverted from spirituality to materialism. And the teaching-learning process has also been to a great extent disturbed upsetting the cultural environment. Moral and ethical atmosphere is greatly polluted. Now it is the task of Sri Ramakrishna Tapovanam to purify the system, re-establish the direction of reviving the paths towards perfection. Therefore the Tapovanam in the foot prints of India’s time-tested traditions, has established educational institutions in the name of Sri Ramakrishna, Holy Mother Sarada Devi and Swami Vivekananda. Simplicity and austerity, self-confidence and self-reliance, discipline and self-dedication, purity and spirituality are very much visible and perceptible in the day’s routine of the institutions founded by the Tapovanam. In these days of materialism and cut-throat competition, it has been made possible to revive *Gurukul* pattern of education. Not only at the primary and secondary but at the collegiate level of education as well we find *Gurukul* mode of functioning very much successful in the Tapovanam. The day is not far of when the potential educational system of India becomes vibrant and popular. People all over the country have been able to feel the negative impact of the present system. It is unable to spot out the hidden gifts, provide the conducive atmosphere for it to flower

and direct it well for the public weal and self-realisation. Therefore educationists have begun to introduce ‘Value Education’. Education will be of value when it is useful to all, at all times, in all places, at all levels and for the harmonious advancement of action, emotion and intellect with a spiritual under-current all through. And in the institutions run by the Tapovanam, we have Value Education.

The potential ability to awaken itself and illumine all lies in the Indian Educational system and that is *Gurukul Vidya*. Swami Vivekananda has been able to recognise its efficacy and so he propagated it. Swami Chidbhavananda has caught the spirit of the system and evolved a method by which everybody is benefited.

In addition to reviving the *Gurukul* system, Tapovanam has evolved a mass movement to educate all on right lines towards spiritual goals. It is Antaryogam, a type of spiritual retreat. It brings people together transcending all petty barriers of caste and creed. Sri Rama the prince of Ayodhya and Guha a tribal person have embraced each other. Sri Krishna the lord of Dwaraka and Kuchela of poverty sat on the same throne. Indian culture is to make all people transcend the differences and be together. And that healthy and wholesome co-existence to a great extent is revived through the *Antaryogams* (spiritual reseats) evolved by the Tapovanam.

“Education is the manifestation of perfection already in man” “Religion is the manifestation of divinity already in man.” These two are the key sentences working wonders in the Tapovanam. Education has to be religious. Religion has to be educative.

Education without religion makes man materialistic. Religion without proper education makes him superstitious. Tapovanam is an institution striving to be religiously educative and educatively religious. And the efforts have borne fruits.

India in general and Tamil Nadu in particular have been richly re-established by the Tapovanam. Let there be many more similar institutions to bring out the hidden potentialities of India to lime light.

THE SWAMI NARAYAN MOVEMENT

Inspired by the Saint Bhagawan Swami Narayan, the Bochasanwasi Sri Akshar Purushottam Swami Narayan Sanstha (BAPS) led by Saint Pramukh Swami Maharaj has been doing yeoman service to nurture the values of *Sanatana dharma*.

The Pramukh Swami Maharaj, the present head of the movement has inspired people to build over 550 temples world wide, which are centres for 160 humanitarian activities in the fields of education, health, environment, social work, culture and spirituality.

With 10 lakh followers world-wide, the movement has 55,000 youth volunteers, and 9090 satsangh centres world wide. Its members offer 12 lakh annual volunteer-hours in service.

The movement undertakes 27 moral and cultural activities. Nearly 5 lakh annual assemblies are held. Its 9 international cultural festivals are visited by 33.5 million interested people.

The B.A.P.S. movement holds cultural examinations involving 4.25 lakh students a year.

Its ten hospitals and 12 mobile dispensaries treat the suffering. Its 15,000 doctors receive

regular training in medico-spiritual conferences.

There are 29 permanent educational institutions, provision for regular scholarships for poor students and public schools and institutions rebuilt after natural disasters.

Environmental activities including tree planting, recharging wells, rain harvesting projects, disaster relief operations, family assemblies to rebuild communities with families at the centre and encouraging people to quit addictions (smoking, drinking, drug dependency) add to the purposeful work of the movement.



With its 35 permanent tribal-uplift centers, the BAPS movement undertakes moral, education, socio-economic programmes for tribals.

The Swaminarayan movement works across continents to bring the transplanted Indians, nearer to our Culture and Dharma.

New India has been strengthened by such spiritual and service movements as the Swami Narain organisation.

(BAPS New Bulletin)

SPIRITUALITY & PROSPERITY

Karmayogi

The Nation's Growing Wealth is personal Prosperity

A rich nation has rich citizens. People become rich not by being dependent on others, or the family or even their organization. He who leads others, heads the family, or proves innovative in the organization makes himself successful and rich. A nation thus becomes wealthy. Such people are called entrepreneurs. What are the characteristics of an entrepreneur? In short, one who does not conform to the social codes is an entrepreneur. Can we make it more explicit? Let us divide the population into two parts, leaders and followers. Our subject here is the leaders.

A nation becomes wealthy, rich, prosperous and famous by those who are willing to die happily for her, to give their all, who do not calculate or think of the future only, who never count their chickens, who HAVE in their hearts the glory of Mother India. Are you one of these? Are you willing to throw away your job and walk naked in the street? In 1920 Gandhiji asked people to leave the British schools, British courts, and British offices. Many followed him. Some became glorious leaders; others became volunteers. Even after freedom, they remained poor

volunteers. That was before 1956, before the descent of the Force. I invite you to throw away a lucrative bank job and start an industry. If you are an entrepreneur, I assure you your several thousand rupee salary will become several thousand crores of business.

At least one person listened to me, opposed his family, resigned a government job, and did what I asked him. **Today he has as many crores as he was earning in rupees as salary.** He is a tireless worker, has never deserted a friend, and not for one moment wavered in his loyalty to his duty. He is a top industrialist in the country. He started an unconventional energy project, introduced the latest agriculture technology, and sponsored ways of life that will inspire youngsters. He was betrayed by almost everyone. He had the Great Good Sense to say, "What they do is up to them. Let me do what is right and good". **He knows how to face every difficulty. Even his most virulent enemy was forced to change his attitude towards him.** He is an entrepreneur. India needs NOT salaried employees. India needs patriotic leaders. Everyone is a leader. Will you lead the leaders?

(The New Indian Express)



SIVAYA SUBRAMUNIASWAMI AND THE HIMALAYAN ACADEMY

The Himalayan Academy was founded by Sadguru Sivaya Subramuniyaswamy as a non-profit educational activity. It has the following purposes.

1. To Foster Hindu solidarity as a unity in diversity among all sects and lineages.
2. To inform and inspire Hindus worldwide and people interested in Hinduism.
3. To dispel myths, illusions and misinformation about Hinduism.
4. To protect, preserve and promote the sacred Vedas and the Hindu Religion.
5. To nurture and monitor the ongoing spiritual Hindu Renaissance.
6. To publish a resource for Hindu leaders and educators to promote Sanatana Dharma.

The Academy also publishes The Journal "Hinduism Today".

Now the movement is headed by Satguru Bodhinatha Veylanswami.

The movement maintains the Kauai Aadheenam monastery. It has a beautiful Iraivan temple in Hawaii. It runs the magazine "Hinduism Today". It organizes Hindu Businessmen of America. Every year one Hindu worker who does the best work

for Hindu Renaissance is selected and honoured. It runs a *gurukulam* in the name of Tirunavukkarasar, the great Saivaite saint. The movement has a special youth wing to nurture young Hindus all over the world in the true Hindu spirit. It has a wing to publish basic as well advanced level books on Hinduism. The movement runs orphanages and *Dharma Salas*. It strives to preserve Hindu arts and artefacts. Its activities for promoting pilgrimages to places of Hindu interest, and for helping visually impaired devotees have won praise from all around.

All these activities are supported by the Hindu Heritage Endowment (HHE), funded by public donations. The HHE holds 59 professionally managed endowment funds that benefit orphanages, temples, *ashrams*, educational institutes, monasteries, homes for the elderly and various publications. These activities are spread over Bangladesh, Fiji, India, Malaysia, Mauritius, Sri Lanka, and the U.S.A. The HHE maintains an office at the Hindu Monastery on the Hawaiian island of Kauai and is overseen and managed by the Monastic stewards and staff.

Three prestigious publications of the movement 1. Dancing with Siva 2. Living with Siva and 3. Merging with Siva, show what kind of quality and excellence are attached to their work.

(Compiled from "Hinduism Today")



PRIDE OF A NATION

Karmayogi

It is a fact that in Asoka's India a woman could travel around safely, which shows the law and order of his rule. In the fifties, the Soviet government challenged its citizens to show four square inches of dirt in Moscow. Macauley spoke about India of his times and said he had never heard of theft or met someone who lied to him. When great values spread across the country and come to settle down as culture, the nation is proud about it. Evading customs duty was a universal passion in England of the 18th century, among the rich as well as the poor. Will a day come in future when we can be proud of saying that nowhere in India can one meet a man who had his work done by giving bribes? Or can we hope to see a day when smuggling can no longer thrive because no one will buy smuggled goods with a clear conscience? We have, by now, outgrown such ways. Surely such days will come in the future.

Centuries of existence give rise to a little history. Centuries of history yield a few drops of culture. Culture is a way of life based on values. Existence is survival. One struggles to survive. Prosperity releases man from such a struggle. Prosperity is the result of intelligent industry which comes from education. So education, intelligence and

industry over the centuries move men from mere existence to a little history, a life of achievement to remember. Corrupt politicians sometimes send their children abroad. They return not only educated but with a little self-respect. They are ashamed of parental corruption. They accept as their goal never taking a bribe. It is common amongst us to be happy about influential contacts. No one scruples to move such contacts and get things done. There is no question of being ashamed of it. Often people are proud of it.

To have your M.Phil thesis written by another, to secure an admission by going around the rules, to accomplish things through money are not things people are ashamed of. A new generation highly educated, with a developed sense of self-respect should step in before such values become personal ways of life. Without this self-respect, one cannot be truthful inside. Utter Truthfulness is the channel through which in Spirit emerges. To subtle vision, such a truthfulness in a person appears to be a dot of light in him or a bright aura around him. India is great in spirit, but only in potential. It will be come actual reality in life through the medium of TRUTH.

(The New Indian Express)



THE GITA PRESS, GORAKHPUR

Led by the great and scholarly examples of Hanuman Prasadji Poddar and Jadyadayalji Goyendka, and supported by the munificence of the Houses of Businessmen, the Gita Press, Gorakhpur has been doing yeoman service to the cause of Hindu Dharma, our National values and the Renaissance of Sanatana Dharma.

Taking advantage of the print media, which could bring out the scriptures with good Hindi, English, Tamil, Bengali or other regional language-translations, the Gita Press, Gorakhpur (78 years old) brings out Vedic scriptures, Puranas, The Ramayana, The Mahabharata, and the Upanishads with Bhashyas by eminent acharyas at affordable prices. The quality of the highly subsidized editions speaks for itself, placing the Gita Press as authentic and reliable.

Gita Press concentrates on the Bhagawat Gita and the Vishnu Sahasranama editions which have sold in various languages to the tune of crores of copies.

The Gita Press also runs the magazine KALYAN (Hindi) (78 years) and Kalyana Kalpataru (English) (49 years). These are household names in India.

The annual numbers of Kalyan and Kalyan Kalpataru are published as separate books.

These are all collectors' items. The Gita Press also brings out simple books on right living, stories for children, posters on the Ramayana, the Gita, Namasmaramam etc.

The various editions of Tulsi Dasji's Ramacharitamans, have been very widely received by the readers both in Hindi and in English.

In the years before and after 1947, the role of the Gita Press in making Bharat 'Samartha' in the religious, moral and spiritual sense is to inscribed in golden letters.

Some of the titles mentioned below, apart from Veda, Purana, Upanishad, Gita texts and commentaries, show the nature and scope of the work of the Gita Press.

1. Some methods of mind control (Hindi)
2. Brahmacharya (Hindi)
3. Present day educational system (Hindi)
4. Dowry in marriage (Hindi)
5. Ideals of a householders' life.
6. Our duty towards the suffering and the down-trodden.

(Compiled from various Gita Press Publications)



BIHAR SCHOOL OF YOGA

Modern India's attempts to interpret *yoga* scientifically have resulted in the establishment of a number of schools, colleges, institutes and universities on *yoga* and *yoga* research.

Srimat Swami Satyananda Saraswati and his disciple Srimat Swami Niranjanananda are saints and *yoga* teachers of international reputation.

Established by Swami Satyananda Saraswati and nurtured by Swami Niranjan, the Bihar School of Yoga, now called Bihar *yoga* Bharti (BYB), is an institute of Advanced studies in *yogic* sciences.

Apart from conducting original research in *yoga*, publishing advanced level text books and research papers on *yoga*, the BYB also trains the public in *yoga*. With Hindi and English as media of instruction, the BYB organises four-month certificate courses in *yogic* studies, one year P.G. diploma courses in *Yoga* Ecology, one year diploma courses in *yoga* philosophy, one year diploma courses in *yoga* psychology and one year diploma courses in Applied *yogic* science.

The glory of BYB does lie not only in teaching the ancient *Yoga* Vidya in modern format, but in the greatness of the personality of Swami Satyananda Saraswati and Swami Niranjan, the true masters.

They have taken the Yoga Vedanta lessons across the globe and have even penetrated the supposed by hardshell of the South American continent. They have established centres in Europe and America, and a sannyasi training centre in Australia.

In the true tradition of India's ancient *yogis* and *rishis*, these two *acharyas* try to resuscitate the Brahavidya and express it in modern idiom to bring enlightenment, happiness and peace to the strife-torn world. They also use traditional tools such as *mantra diksha*, *homa*, *yajna*, *bhajans*, *utsavas* and festivals, sacred rituals etc. to drive home to the minds of the practitioners, the fact of the *vedantic* truth.

Non-traditional areas like Australia, Spain and Egypt have been brought under their influence by sheer hard work, *tapasya*, sincerity and love.

Their spiritual and *yoga* activities are ably supported by their humanitarian work for the poor.

Their other works include, earthquake reliefs in Gujarat, *yoga* therapy courses, children's *yoga* fellowship and *yoga* in education.

(From BSY Publications)



MATA AMRITANANADA MAYI AND HER MISSION

Born in the house of a humble fisherman in Kerala, Mata Amritananda Mayi (Amma) has risen to spiritual heights by sheer *Tapasya*. She is hailed as the Divine Mother (Amma) by millions of people across the world.

She is the Divine symbol of Motherhood and she embraces the whole world with all its living beings in her loving fold. She is the living example of the Divine qualities of love, compassion, simplicity, culture and renunciation.

Cutting across differences of caste, creed and nationality, crores of people come to Amma's feet seeking consolation from the cares of the world. Her mission headquarters are located at Amritapuri, Her birth-place. More than 2000 sannyasins and celebrates, both men and women stay there, serving the people. They, under the direct supervision of Mataji serve humanity. A large number of local people help the programmes succeed. The projects include spiritual ministry and social service.

Amma has established temples in India and abroad to enable devotees perform direct worship. Amma herself undertakes tours during which she sings enchanting songs, gives lectures on spiritual and social topics and trains people in Meditation. Her aim is to instruct people on the noble goals of human life and bring about a spiritual revolution in the world.



In 2003, Amma's 50th birthday was celebrated with participants from 191 countries, rededicating themselves to selfless to work for Amma's world vision. The participants included India's top government leaders and artists, painters, singers and social activists from all over the world.

On a permanent basis the Mata Amritananda Mayi Mission runs the following activities:

1. An orphanage with 600 children is being run by the Mission in Paripalli in the Kollam district of Kerala.
2. Under the Amrita Kuteeram scheme, 30,000 houses have been constructed for the poor in all parts of India. In the next ten years, it is planned to extend the scheme to build 1,000,000 houses.
3. In the earthquake-hit Gujarat, the Mission has rebuilt 3000 houses, prayer halls and

- has helped in the comprehensive development of 3 villages.
4. Every month, the mission renders monetary help to 50,000 widows and destitutes.
 5. There is a special school in Trichur in Kerala, run by the mission for the dumb and deaf.
 6. A hospital of international standards has been built at Kochi, to serve the people either freely or at affordable costs. A medical college, a pharmacy college and a Nursing college are part of this medical complex.
 7. For terminal cancer patients, the mission runs a home in Baglapur in Maharashtra. The Mission is opening an AIDS Refuge-Home in Tiruvananthapuram.
 8. There are more than 45 Amrita Vidyalayas functioning across the country.
 9. Three Engineering Colleges are being run by the mission in Amritapuri (in Kerala), Coimbatore, and in Bangalore. Recently they have been brought under a Deemed university,. Amrita Vishwa Vidya Peetham.
 10. There are eleven computer centres of the Mission functioning in various parts of the country.
- Mata Amritananda Mayi was invited to address the Sarva Dharma Conference in Chicago in 1993. The Confence commemorated the 100th year of Swami Vivekananda's Chicago speech. In the Golden Jubilee year of the United Nation, Amma was invited again to address the world forum. She addressed the World Conference of women in Switzerland in October 2002.
- Amma was conferred the Gandhi-King award for her work for world peace.
- With all her eminence, spiritual and social achievements, Amma remains simply what she really is, a true respresentative of Sanatana Dharma and a real example of India's spiritually inspired motherhood.
- (From Mission Publications)



INDIA'S SAVIOR OF SACRED PLANTS

“**P**reservation through documentation and education”, “This is the modus operandi of Dr.S.K.Jain, the retired yet tireless defender of India’s infinitely useful and especially sacred plants and trees. Jain, now 73 and still very active in the field, is the Scientist Emeritus of the National Botanical Research Institute in Lucknow. He began in the early 1960s by studying the ethnobotany of the Adivasi tribals in central India, in what then was unprecedented efforts. His objective was to record in scientific detail the tribals’ medical use of plants. Later, his sister, a scholar of the Vedas, revealed to him how the same plants are described in the Vedas. His interest germinated, and soon his research blossomed to include recording how and why India’s flora are found to be sacred. With this dual objective, he served the Botanical Survey of India for nearly three decades and was its director for almost seven years. He initiated and organized broad-based ethnobotanical studies in several parts of the country and coordinated all-India research projects in endangered species and ethnobotany. His work attracted funding from the Ford Foundation and the Smithsonian Institution of the US.

Dr.S.K.Jain says: “The extent to which plants in India are used in worship and medicine is unrivalled. The closest match perhaps be the forest and mountain-dwelling tribals of Central and South America. Retired Harvard University professor Richard Evans

Schulters, who is now over 90 years old, acknowledged this fact. In 1991 he described how India is “A nation blessed with an extremely diverse flora but likewise an extraordinarily large population of tribals who still have an unequalled, rich knowledge of the properties of their ambient vegetations.” In India, this deep knowledge of and faith in plants, animals, and forests has largely contributed to natural conservation of the environment and its biodiversity.

There is hardly any sphere of human activity in India where sacred plants do not play a role. Even nonbelievers who usually scorn at “mythology” and “magic-o-religious” beliefs are likely to pray at a particular tree or offer certain specific flowers when it comes to helping their ailing kith and kin. In my book, **Directory of Indian Folk Medicine and Ethnobotany** (1991, Deep Publication, New Delhi), I have enumerated some 2,500 species and 15,000 folk uses of plants in India. But there is much more knowledge yet to be codified.”

Apart from individual plants, some whole forest patches are considered hallowed. These sacred groves are known locally as *vanrai*, and there are hundreds of large and small *vanrai* in India. A study has revealed the presence of several hundred and groves, in the state of Maharashtra alone.

(From ‘Hinduism Today’)



SPIRITUALITY AND SERVICE

Dr.K.Subrahmanyam

Spirituality is the soul and invincible potentiality of Indian view and way of life. It is at the core of all activity and the very bedrock of Bharat. Depending upon the requirements of the time and situation, it has its mighty manifestation as Dharma, which is both *sanathana* and *yuga*. *Sanathana dharma* is the propeller of spirituality. *Yuga dharma* is the rudder to render it responsive to social and individual needs of the age. Sun's light is colourless, straight and bright. But it becomes colourful and curved as the rainbow of seven hues when refracted. The core spirituality manifests as service activity of diverse dimensions and intensity when refracted and reflected by the prism of societal needs of the age. Individually it is *Vyashtidharma* as the *Ashrama dharma* wherein the unfoldment of spirituality is but self-preparation through the unselfish service as a celibate, householder, recluse and renouncer placing one's all at the disposal of others. Collectively it is *Samashti dharma* as the *Varnadharma* wherein the manifesting evolution is through the unselfish division of labour or the service activity as physical, financial, administrative and intellectual—all vibrant with the spiritual undercurrent. *Dharma*, thus is spirituality both unmanifest and manifest, at the individual and social levels for the realization of Self through the unselfish service of all.

All the organizations and institutions in India thus have the spiritual undercurrent of self-preparation for self-realization and the social service activity in the required areas of societal needs. No area of public welfare has

ever been neglected. Enough research preceded every developmental activity. And the persons who engaged themselves in the research and development were called *rishis* in ancient times. *Vasishta* is a *rishi* of spiritual science. *Patanjali* is of yogic science. *Dhanvantari* is of medical science. *Bharata rishi* is of music and dance. Sex too has been thoroughly studied and its art and science are provided by *rishi Vatsayayana* in *Kama sastra*. In every field of study and in every walk of life, we find stalwart researchers and benefactors, evolving to the peaks of spiritual perfection while simultaneously elevating, by their loving guidance, the society around them through a harmonious advancement of action, emotion and intellect for everybody's realization of SELF. Thus every welfare activity in India has ever been spiritually oriented. It is for all, all time and for realizing the highest bliss. There is no patch work. Nor is it lop-sided or transient to fulfill the day's needs.

In the ancient India of glorious spirituality and self-ennobling zeal, there was not much of necessity to be equipped with patriotic fervour. Self-respect and self-rule are but inseparable facets of spirituality. When they were at stake, the attention of the *rishis* was drawn to the pressing need of independence from the foreign yoke. Therefore we find a host of spirituality. When they were at stake, the attention of the *rishis* was drawn to the pressing need of independence from the foreign yoke. Therefore we find a host of spiritual stalwarts resorting to nationalism as the need of the hour to help evolve smoothly in spirituality. Along with the

innate spiritual splendour, nationalist dynamism became vibrantly visible in all welfare activities of the self and society. Patriotism has gradually been very closely identified with the core spirituality and the allied service activity. Swami Vivekananda thus has become the pioneer in the spiritually oriented nationalist activities of social welfare. Taking the cue from him we find a host of leaders establishing institutions or organizations for the spiritual unfoldment through service activities of nationalism. In a way, spirituality and nationalism have been the twin ideals of all.

Bala Gangadhara Tilak, Gopalakrishna Gokhale and Mahatma Gandhi are basically of spiritual sublimity. They have directed the flood of spirituality to flow through the canals of patriotism to irrigate every field of service activity. Religion too has been made patriotic. Every thought, word and deed was for them charged with patriotic fervour. Subhash Chandra Bose was so inspired by Swami Vivekananda's message that he was ready and spontaneous to declare: "Had he (Vivekananda) been alive, I would have been at his feet." Sri Aurobindo who was basically a *yogi* of spiritual science was inspired by Vivekananda to be a patriotic *yogi*. Rabindranath Tagore of poetic exuberance

and educative zeal turned out to be a person of patriotic fervour. His creative genius in art and education has not only been spiritual but nationalistic as well. His *Gitanajali* and *Santiniketan* are fragrant, vibrant and bright with the flood of nationalism, whose fountain-head is in spirituality.

Foreigners like Dr. Annie Besant, Sister Nivedita and the Mother of Pondicherry were so impressed with the spiritual luminosity of Bharat that they became a part and parcel of Indian soil and established institutions for nationalistic purposes.

Indian Nationalism is in tune with the spiritual undercurrent. Patriotism, if it is separated from the spiritual foundation, will be lifeless and will fall like a castle built with playing cards. Nationalism derives its life force from spirituality. For any activity in India spirituality is the saproot. And spirituality when made visible or tangible is but unselfish service activity. Self-realization is made easy and possible through service activity. Swamiji therefore has established in his master's name "Sri Ramakrishna Math and Mission". Math is for self-realization and Mission is for service. Self realization is the goal of life. Service is the means of *Atmano mokshartham, Jagat hitayacha...*



THE NATION OWES SO MUCH TO THEM

The sections III & IV on Brilliant individuals and Shining Institutions could have included many more great names. Mother India continues to bring forth great children and create great institutions.

Mahatma Gandhi, Sardar Patel, Jawaharlal Nehru, Indira Gandhi, Atal Behari Vajpayee, Narasimha Rao, Jaya Prakash Narayan, Lal Bahadur Shastri, Kamaraj and a host of political-luminaries, have served the Nation in their chosen field.

B.C.Roy, Dr.Sethi, Dr.K.M.Chерian, Dr.Pratap Reddy, Dr.A.S.Paintal, Dr.G.Venkataswamy and other doctors have served India in the medical fields along with great Ayurveda Centres like Arya Vaidya Shala and Vaidya Madom. Great Siddha Vaidyas and Yoga therapists have helped India serve humanity.

Great educationists, great scientists, great sportsmen have made India proud.

Agricultural and Dairy Scientists, great artists who took India's cultural message across the world have served the Indian cause so well.

Organizations such as R.S.S, Bharatiya Vidya Bhavan, Gita Press, Gorakhpur and The Ramakrishna Math have shown to the world, that the organizational base, the needed strength and consolidation of the forces of emerging India could be provided from within.

Saints like Swami Vivekananda, Sri Aurobindo, Vinoba, and many others have guided India during her critical times and have predicted great future and a great role for India in guiding human destiny.

The section I & II of the book chooses to high-light only a small section of such great people and great institutions.



RELIGIOUS GURUS

Maharishi Mahesh Yogi

Maharishi Mahesh Yogi, founder of Transcendental Meditation (TM), is perhaps the most successful of all the gurus who have taken Hindu philosophy to the West. By 1994 there were over 1,200 TM centres in 108 countries around the world, employing more than 30,000 trained teachers. He has established two universities: the Maharishi European Research University in Switzerland and the Maharishi International University in Iowa, USA.

The Maharishi was born Mahesh Varma in 1917. He studied with the guru Swami Brahmananda who, he claims, taught him the yogic technique that he later developed into TM. He founded the Spiritual Regeneration movement in 1957, and in 1959 set off for the United States where his success owed much to the secular, psychological nature of his doctrine, in contrast to the spiritual emphasis of other gurus.

Nearly fifty years of constant teaching activity around the world have made His Holiness Maharishi Mahesh Yogi widely known and revered. He is the latest significant teacher in the long history of the Vedic tradition. Having received his university degree in physics before studying with the most illustrious recent master of the Vedic tradition (His Divinity Brahmanda Saraswati), Maharishi combines expertise from both modern science and ancient wisdom. He has thus been uniquely qualified to bring about a synthesis of objective,

materialist science with the subjective Vedic science of consciousness. For his contributions to this profound body of knowledge (in more than 20 books and 14,000 hours of videotaped lectures), Maharishi is widely recognized as the world's foremost Vedic scholar, as well as its leading scientist of consciousness.

It was due to Maharishi's constant inspiration to researchers, and his clear predictions about measurable results, that research on his Transcendental Meditation technique first made meditation, and Transcendental Consciousness, scientific realities. After the appearance of more than 600 studies, Maharishi's success in establishing the benefits of meditation for the individual can be judged, in part, by nearly \$20 million in federal research grants awarded to scientists at Maharishi University of Management (Fairfield, Iowa) for in-depth studies on the TM technique. Maharishi now oversees a teaching organization established in nearly 100 countries around the world.

After long centuries of confusion, Maharishi has brought to light the Vedic truth that meditation is not based on effort and concentration, but rather takes place spontaneously and naturally once the mind is given the correct start. It is this transformation in understanding, embodied in his Transcendental Meditation technique, which has opened the benefits of meditation to people of all cultures and walks of life. For his ability to teach the transcending

process, and make available the experience of the unified field (in Transcendental Consciousness) to people of all ages, religions, and walks of life, he is recognized worldwide as the most effective teacher of enlightenment in many generations. For centuries into the past, only a few people were deemed worthy of meditation, and society as a whole was left to fend for itself, but Maharishi's stated goals are to bring enlightenment to every individual on Earth, and to establish a state of permanent peace in the world.

As this site is created, terrorism and war endanger the world. Maharishi, however, has revived the knowledge of peace creation—the use of large groups of peace-creating experts to radiate a measurable influence of harmony and coherence into society. He is determined not to wait for governments to act, but to assemble and maintain large peace-creating groups as quickly as possible. At this dangerous time in world history, all people who love peace are invited to participate—to take part in this historic undertaking to bring an end to the age-old legacy of violence and war, and to create a permanent state of peace on Earth. (Please see What can I do?)

(From the Web Site)



WHO ARE THE BRAHMAKUMARIS ??

Introduction

Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya is, in many ways, a Vishwa Vidyalaya with a difference. Whereas most other universities enable a person to attain academic education, this Vishwa Vidyalaya enables him to be the master of his own thoughts, desires, emotions and sense-organs and to be a doctor, so to say, of the philosophy- of - life so that he can lead a healthy and happy life. The thrust of knowledge imparted in this Vishwa Vidyalaya, is, first, to make man, in reality, a man and to enable him to have practical wisdom and to learn lessons for constant peace and happiness and for excellence in life.

Prajapita Brahma Kumaris Ishwariya Vishwa Vidyalaya, (Brahma Kumaris in short) is a unique Vishwa Vidyalaya (university) and a well known spiritual value based educational institution. Through it's teachings, the institution has gained global acceptance and unique international recognition. The institution believes in the parenthood of God and the brotherhood of man and is open to the people of the entire globe irrespective of their caste, creed, age and social, economic or political status.

Ishwariya Vishwa Vidyalaya and the two other institutions created by it, namely Raj Yoga Education and Research Foundation and Brahma Kumaris Academy for a Better World are dedicated to the goal of establishing a Value-based society. The main

focus is the development of human potential. They aim at bringing harmony in human relations and changing the attitudes and outlook of man so that there is the spirit of brotherhood, love and co-operation. They teach theory and practice of Rajyoga Meditation so that the mind becomes free from tension, bias, prejudices, hypocrisy, jealousy, hatred, greed, ego and such other negative tendencies that cause conflict in the society and degrade the person himself. It gives special guidance for the effort of inculcating moral values and divine virtues in the self and enables a person to experience deep peace and bliss through Meditation and Spiritual Wisdom.

The emphasis is on promoting the qualities of humanism, tolerance and never-ending enthusiasm for spreading the knowledge of truth in every sphere of life.

As an international institution, the Brahma Kumaris offers people of all backgrounds an opportunity to learn meditation and deepen their understanding of universal principles and innate values through a variety of educational programmes, courses and learning resources. As a worldwide family of individuals from all walks of life, the institution provides a caring, co-operative and supportive environment, which encourages individuals to bring out the best in themselves. As a global organization, the institution has created opportunities for people across the world to participate in a variety of initiatives aimed at creating a

better world where people live in peace and harmony.

Brahma Kumaris is an institution with a difference. It is run mostly by women with a spirit of dedication, devotion, renunciation and sacrifice for the welfare of the society as a whole, without any distinction on the basis of race, religion, nationality, caste or creed and without charging any fees. It is supported by voluntary contributions of its students.

The institution was established by the incorporeal God Father through the human medium of Prajapita Brahma. He surrendered his mind, body and wealth and dedicated the remaining 33 years of his life to this task.

In 1951 the Institution's world headquarters moved to Mt Abu in Rajasthan, India, where

it remains to this day. Prajapita Brahma left his mortal coil in 1969.

Dadi Prakashmaniji is the present Adm Head and Janaki Dadiji is the additional adm head.

The Institution has created opportunities for people in 129 countries to participate in a variety of initiatives aimed at creating a better world where people live in peace and harmony.

Fundamentals of spiritual teachings

Fundamental Spiritual Teachings The Institution has now grown into a gigantic tree with more than 6000 branches, spread over India and more than 80 other countries. About 7,00,000 persons daily study moral and spiritual values and practice meditation at these centres. Some of the teachings imparted here are about God, inculcation of divine qualities in human beings, preparing for a golden age, re-establishing Satya Yuga.

(From the Web Site)



ART OF LIVING

Established in 1982, The Art of Living Foundation is an educational and humanitarian foundation, registered in the US as a tax-exempt and nonprofit organization. It is not a religious organization, but as one adhering to the basic spiritual principles of love, kindness and unconditional service to the world. It carries out numerous charitable, educational and humanitarian programs throughout the world on the basis of donations.

All the activities of the foundation are based on the saying of its founder teacher Sri Sri Ravishankar—”a truly religious person will be secular in nature. Secular means one who thinks all human beings are his or her own.” The Art of Living works in special consultative status with the Economic and Social Council (ECOSOC) of the UN, and as such it has accredited representatives at the UN in New York, Geneva and Vienna. It also works in formal consultation with the World Health Organization (WHO).

1. DOLLAR-A-DAY PROGRAM

From 1985, the Art of Living started supporting the Dollar-a-Day service program, for rural children of India, which provides them with the basic amenities of life and much more. This innovative activity is pursued under Care for Children program where children learn, other than the traditional courses, the fine art of living, the skill of making friends, handling negative emotions and value of service to the fellow beings. The children are taught to take the studies as an enjoyable challenge, pick up the habit of hygienic living and most

importantly, develop the skill of community living, a sense of belonging to each one of it.

2. THE 5H PROGRAM

One of its many commendable programs is the 5H Program, which focuses on—Home, Health, Hygiene, Harmony in Diversity and Human Values. It aims at bringing about a social transformation so that the complete potential of each individual is expressed. Sri Sri Ravishankar is the inspiration behind the program.

3. ART EXCEL

The Art Excel program is perhaps the most popular program, which offers courses for all round development of children and youth (8 to 21 years old). Through simple play-way techniques and awareness games the participants learn how to develop their personal potential and manage stress in their life. This highly admired program is currently offered in major Indian cities like Mumbai, Delhi and Calcutta, and in countries like Canada and the USA. The Art of Living program is working closely with UNICEF to make this program available to the world community at large.

4. PRISON SMART

Prison SMART is another laudable program providing training on stress management and rehabilitation for juvenile and adult prisoners, prisoners on parole and probation, victims of crime, at-risk youths, and even the law enforcement officers and probation staff. The Prison SMART Foundation Inc. that carries out these services was established in

1992. This unique foundation is the first of its kind in the USA and now has gained national recognition to offer services in the prisons and juvenile halls across the country. The foundation provides vision, resources and a committed corps of talented volunteers.

5.INTERNATIONAL ASSOCIATION FOR HUMAN VALUES

6.YOUTH TRAINING PROGRAM

The Youth Training Program (YTP) in India focuses on the education of the rural youth and encourages them to work for the betterment of their community. Arranging medical camps, distributing clothes to the poor, creating sanitation facilities and setting up local cooperative groups.

Working on the principles of love and essential human connectedness as delineated by their founder member, Sri Sri Ravishankar, the Art of Living tries to follow a holistic way of living coupled with humanitarian values. It teaches a wide variety of courses including a meditation course called sahaja samadhi, a natural and

effortless meditative technique. It admits that all its self-development courses and programs are a form of yoga, which is nothing but a “union with the Self.” The sudarshan kriya and other related techniques, propounded by the Foundation, are all based on the ancient yogic science of breathing, which explores the connection between mind, body, the emotions and rhythms of breath. Over a million people in more than 100 countries have taken Art of Living courses.

The Foundation has Vyakti Vikas Kendras all over India, to teach people how to revive love among themselves, improve their interpersonal interactions and to reach out to the world in a positive manner. Corporate courses are offered to executives and all, to enhance their efficiency and team spirit.

Above all, the Foundation endeavors to drive home Sri Sri Ravishankar’s message that— even though practices remain different, all great religious traditions share the same common goals and values, and mankind would do well to cut across these barriers and anomalies to connect with each other through love.

(From the Web Site)



GAYATRI PARIWAR

Mission & Vision

Aims and Objective

In words of Gurusatta Their Assurance

- Awaken individual's inner spiritual force by sound body and clear mind
- Create addiction free society·

Promote Vegetarianism

- Work towards establishing a well balanced, pollution free ecosystem
- Harmony, friendship, brotherhood, peace and prosperity of the whole universe
- Promote Scientific Spirituality
- Inculcate family and cultural values in younger generation via Multimedia and other state-of the art technology
- Women awareness

Establishments:

1. Akhand Jyoti Sansthan, Mathura: Akhand Jyoti magazine publication center, and a residence of Poojya Gurudev Pt. Shriram Sharma Acharya from 1941 to 19712.
2. Gayatri Tapobhumi, Mathura: Publication and mass training through religious establishments
3. Janmabhumi Anvalkheda: The birthplace of Poojya Gurudev, Girl's Inter and Degree college, a Mata Bhagwati Devi Hospital
4. Gayatri Teerth - Shantikunj, Brahmavarchas Shodh Sansthan & Dev Sanskriti University, Hardwar: A Research Center dedicated to Inter communion of Science and Spirituality
5. Gayatri Shaktipith: Centers for mass propagation of Gurudev's teachings (Approximately 4000 centers worldwide)
6. Pragya Mandal, Mahila Mandal: About 24000 centers spread all over India. They

give basic lessons of self-sufficiency through cottage industry training

Mission Highlights:

- o Diksha: More than 50 million people have taken Diksha (initiated) of Gayatri Mantra
- o Samaydan: Around 1 million workers devote three months to one year time as and when needed for noble cause
- o Herbal healing: An herbal system has been established as a recognized method of healing. The institute conducts distinctive research on more than 500 plants
- o Personal development: More than 15 million people have left their bad habits and addictions, families have been reunited and imbibed with spiritual disciplines
- o Eco-friendly rural industrialization: This has been promoted all over the Indian sub-continent and such objectives are advocated all around the world
- o Lessons of national integrity: Accepting whole ecosystem and mother earth as our deity, have been widely accepted by millions of Gayatri Pariwar disciples
- o Awakening of collective consciousness: Through Yug sandhi mahapurashcharan (recitation of specific number of Gayatri Mantra with meditation in early morning and evening hours till critical transition phase is over). It has been one of the gigantic endeavors of this Century in which more than 250 million people will be participating this year
- o Women emancipation: : The mission carries out activities and programs outlining the significant role that, women of modern world have to play by conducting rituals and

reciting Gayatri Mantra. This is one of the unique achievements of this organization
 o Grand Ashwamedha yagnas: To this date, total of 27 such grand scale Ashwamedha yagyas have been performed. The Purnahuti in Anwalkheda have been performed successfully with participation of about 2.5 to 3 million people or more

o Gurudev's Writings: Pujya Gurudev has handwritten an enormous amount of materials on various subjects. This amounts to more than 100,000 pairs of encyclopedia Britannica size books.

Our Manifesto-Solemn Pledge

The foundation of Yug - Nirman movement of Gayatri Pariwar is the 'Solemn Pledge' [Satsankalp] on which rests the emergence of all-round peace, happiness and bright future. This is our manifesto, declaration on which all the ideologies, planning and activities of Gayatri Pariwar are based. These declarations incorporate the formulas for changing and reforming individual, the family and the society. These precepts promote unity & equality and materialize the concept of 'Vasudhaiva Kutumbakam'. Immense and limitless is our power of determination. Let us read, understand and digest these concepts [pledge] daily. They motivate us to concentrate on self-reformation rather than on giving advice to others. A change in every individual is bound to lead to the formation of a better society. The incarnation which needed for Yug Parivartan [Change of the Era] will initially be in the form of aspiration & determination. The subtle form of this incarnation is this Yug Nirman Satsankalpa.

1. Firmly believing in the Omnipresence of God and His Unfailing justice, we pledge to abide by basic Divine principles (Dharma).

2. Considering the body as the Temple of God, we will be ever watchful to keep it healthy and full of vitality by adopting the principles of self-control, order and harmony in our lives.

3. With a view to keeping our minds free from the inrush of negative thoughts and emotions, we will adopt a regular programme of study of ennobling and inspiring literature (Svadhyaya) and of keeping the company of Saints (Satsanga).

4. We will vigilantly exercise strict control over our senses, thoughts, emotions and in the spending of our time and resources.

5. We will consider ourselves inseparable parts of the society and will see our good in the good of all.

6. We will abide by basic moral code, refrain from wrong doing and will discharge our duties as citizens committed to the well-being of the society.

7. We will earnestly and firmly imbibe in our lives the virtues of Wisdom, Honesty, Responsibility and Courage.

8. We will constantly and sincerely endeavour to create an environment of loving kindness, cleanliness, simplicity and goodwill.

9. We will prefer failure while adhering to basic moral principles to so-called success obtained through unfair and foul means.

10. We will never evaluate a person's greatness by his worldly success, talents and riches but by his righteous conduct and thoughts.

11. We will never do unto others what we would not like to be done unto us.

12. Members of opposite sexes while interacting with each other will have feelings of mutual warmth and understanding based on purity of thoughts and emotions.

13. We will regularly and religiously contribute a portion of our time, talents and resources for spreading nobility and righteousness in the world.

14. We will give precedence to discriminating wisdom over blind traditions.

15. We will actively involve ourselves in bringing together persons of goodwill in resisting evil and injustice and in promoting New Creation.

16. We will remain committed to the principles of national unity and equality of all human beings. In our conduct, we will not make any discrimination between person and person on the basis of caste, creed, colour, religion, region, language or sex.

17. We firmly believe that each human being is the maker of his own destiny. With this conviction, we will uplift and transform ourselves and help others in doing so. We believe the world will then automatically change for the better.

18. Our Motto is: “ Ham Badlenge - Yug Badlega” , “ Ham Sudhrenge - Yug Sudhrega” . When we transform ourselves, the world will be transformed. When we reform ourselves, the world will be reformed.

(From the Web Site)



INDIAN SPIRITUALITY IN THE AGE OF SCIENCE AND TECHNOLOGY

All over the world, the growth of Science and Technology has had two adverse effects on civilization, though Science & Technology (S&T) have fought against hunger, contained diseases and have helped in the growth of knowledge and communications.

The adverse effects are (1) Giving a fractured vision of Reality, S&T have allowed man to destroy his family, community, his tradition, his National identity and break his ties with Nature and the Rest of the creation. (2) S&T have condemned man to a life of materialism, destroying his faith in God and in himself. With exceptions, this is the overall scenario.

The West has been fed on the conviction that Religion cannot survive the onslaught of reason in the form of S&T. In India the growth of S&T has been put to proper use. While certainly helping India achieve, material prosperity, better communication, transport and health, for her children, Science also has joined hands with spirituality to help man get a fuller vision of reality.

1. Science has given spirituality better tools of communications and propagation. Shri Morari Bapu can speak to a million people on the Ramayana, thanks to fine public address systems and closed circuit TV. The Gita Press can print millions of copies of the Gita and Vishnu Sahasra Nama. Sri Ramananda Sagar can make crores of viewers see the Ramayana TV show. Swami Dayananda Saraswati says that in the modern era, cassettes and CDs can supplement a living Guru in spiritual teaching.

2. Scientific tools have helped man understand better the effects of yoga practices on his body, mind and breathing systems. Man can use feedback loops etc. to improve his efficiency in yoga practices.

3. Scientific studies of yoga, expansion of consciousness etc have prodded man to extrapolate the stretch of consciousness and ask “What more?” Science has certainly sharpened and extended man’s spirit of enquiry. 4. Science itself has come to realise its imitations in describing truth and has improved its language, refined its tools and expanded its understanding. It has also become humbler in the bargain.

5. Great Indian men of modern science, like Jagadish Chandra Bose, Raja Ramanna, Dr.Bhagawantam and Dr.A.P.J.Abdul Kalam have helped narrow the gap between the common man’s understanding of science and his notion of religion and spirituality.

6. Studies on consciousness all over the world and in India have shifted Religion and Spirituality from the Realm of mere FAITH to the Realm of experimentation and experience. The lives of Sri Ramakrishna, Swami Vivekananda, Sri Aurobindo and Sri Ramana, have told us that spirituality is logical, learnable, experimental, experiential and is truly a systematic search for truth. Faith is but one aspect of spirituality.

7. Many spiritual movements employing scientific tools and methods in the service of society have helped in dispelling the doubts in the minds of the common people-doubts about the ‘practical’ use of spirituality.

8. At least a few scientists have taken the stand, ‘Spirituality for its own sake’



SECTION - 2

Brilliant Individuals National Heroes

If there is any land on this earth that can lay claim to be the blessed Punya Bhumi,... The land where humanity has attained its highest towards gentleness, towards generosity, towards purity, towards calmness, above all, the land of introspection and of spirituality --it is India.

As I look back upon the history of my country, I do not find in the whole world another country which has done quite so much for the improvement of the human mind. Therefore I have no words of condemnation for my nation. I tell them, 'You have done well; only try to do better.'





Thus spake Swami Vivekananda

“Arise, awake, and stop not till the desired end is reached”. Be not afraid, for all great power, throughout the history of humanity, has been with the people. From out of their ranks have come all the greatest geniuses of the world, and history can only repeat itself. Be not afraid of anything. you will do marvellous work. The moment you fear, you are nobody. It is fear that is the great cause of misery in the world. It is fear that is the greatest of all superstitions. It is fear that is the cause of our woes, and it is fearlessness that brings heaven even in a moment. Therefore, :Arise, awake, and stop not till the goal is reached”.

SRINIVASA RAMANUJAN

Born: 22 Dec 1887 in Erode, Tamil Nadu state, India

Died: 26 April 1920 in Madras, Tamil Nadu state, India

K. Srinivasa Rao, *The Institute of Mathematical Sciences, Madras-600 113.*

Srinivasa Ramanujan (1887-1920) hailed as an all-time great mathematician, like Euler, Gauss or Jacobi, for his *natural genius*, has left behind 4000 original theorems, despite his lack of formal education and a short life-span. In his formative years, after having failed in his F.A. (First examination in Arts) class at College, he ran from pillar to post in search of a benefactor. It is during this period, 1903-1914, he kept a record of the final results of his original research work in the form of entries in two large-sized Note Books. These were the ones which he showed to Dewan Bahadur Ramachandra Rao (Collector of Nellore), V. Ramaswamy Iyer (Founder of Indian Mathematical Society), R. Narayana Iyer (Treasurer of IMS and Manager, Madras Port Trust), and to several others to convince them of his abilities as a Mathematician. The orchestrated efforts of his admirers, culminated in the encouragement he received from Prof. G.H. Hardy of Trinity College, Cambridge, whose warm response to the historic letter of Ramanujan which contained about 100 theorems, resulted in inducing the Madras University, to its lasting credit, to rise to the occasion thrice - in offering him the first research scholarship of the University in May 1913 ; then in offering him a scholarship of 250 pounds a year for five years with 100 pounds for passage by ship and for initial outfit to go to England in 1914 ; and finally, by granting Ramanujan 250 pounds a year as an

allowance for 5 years commencing from April 1919 soon after his triumphant return from Cambridge “with a scientific standing and reputation such as no Indian has enjoyed before”.

Ramanujan was awarded in 1916 the B.A. Degree by research of the Cambridge University. He was elected a Fellow of the Royal Society of London in Feb. 1918 being a “Research student in Mathematics Distinguished as a pure mathematician particularly for his investigations in elliptic functions and the theory of numbers” and he was elected to a Trinity College Fellowship, in Oct. 1918 (- a prize fellowship worth 250 pounds a year for six years with no duties or condition, which he was not destined to avail of). The “Collected Papers of Ramanujan” was edited by Profs. G.H.Hardy, P.V. Seshu Aiyar and B.M. Wilson and first published by Cambridge University Press in 1927 (later by Chelsea, 1962 ; and by Narosa, 1987), seven years after his death. His ‘Lost’ Notebook found in the estate of Prof. G.N. Watson in the spring of 1976 by Prof. George Andrews of Pennsylvania State University, and its facsimile edition was brought out by Narosa Publishing House in 1987, on the occasion of Ramanujan’s birth centenary. His bust was commissioned by Professors R. Askey, S. Chandrasekhar, G.E. Andrews, Bruce C. Berndt (‘the gang of four’!) and ‘more than one hundred mathematicians and scientists who contributed money for the bust’ sculpted by Paul Granlund in 1984 and another was commissioned for the Ramanujan

Tata group chairman Ratan Tata has bagged the Telecom Man of the year award by Voice and Data magazine.
--

Institute of the University of Madras, by Mr. Masilamani in 1994. His original Note Books have been edited in a series of five volumes by Bruce C. Berndt (“Ramanujan Note Books”, Springer, Parts I to V, 1985 onwards), who devoted his attention to each and every one of the three to four thousand theorems. Robert Kanigel recently wrote a delightfully readable biography entitled : “The Man who knew Infinity : a life of the Genius Ramanujan” (Scribners 1991; Rupa & Co. 1993). Truly, the life of Ramanujan in the words of C.P. Snow: “is an admirable story and one which showers credit on nearly everyone”.



During his five year stay in Cambridge, which unfortunately overlapped with the first World War years, he published 21 papers, five of which were in collaboration with Prof. G.H. Hardy and these as well as his earlier publications before he set sail to England are all contained in the “Collected Papers of Srinivasa Ramanujan”, referred earlier. It is important to note that though Ramanujan took his “Note Books” with him he had no time to delve deep into them. The 600 formulae he jotted down on loose sheets of paper during the one year he was in India, after his meritorious stay at Cambridge, are the contents of the ‘Lost’ Note Book found by Andrews in 1976. He was ailing throughout that one year after his return from England

(March 1919 - April 26, 1920). The last and only letter he wrote to Hardy, from India, after his return, in Jan. 1920, four months before his demise, contained no news about his declining health but only information about his latest work : “I discovered very interesting functions recently which I call ‘Mock’ theta-functions. Unlike the ‘False’ theta-functions (studied partially by Prof.

Rogers in his interesting paper) they enter into mathematics as beautifully as ordinary theta-functions. I am sending you with this letter some examples ...”. The following observation of Richard Askey is noteworthy: “Try to imagine the quality of Ramanujan’s mind,

one which drove him to work unceasingly while deathly ill, and one great enough to grow deeper while his body became weaker. I stand in awe of his accomplishments; understanding is beyond me. We would admire any mathematician whose life’s work was half of what Ramanujan found in the last year of his life while he was dying”.

As for his place in the world of Mathematics, we quote Bruce C Berndt: “Paul Erdos has passed on to us Hardy’s personal ratings of mathematicians. Suppose that we rate mathematicians on the basis of pure talent on a scale from 0 to 100, Hardy gave himself a score of 25, Littlewood 30, Hilbert 80 and Ramanujan 100”. G.H.Hardy, in 1923, edited

Chairman and chief mentor of Infosys Technologies. N.R.Narayanamurthy, has become the first Indian to win the Ernst & Young World entrepreneur of the year award.

Chapter XII of Ramanujan's second Notebook on Hypergeometric series which contained 47 main theorems, many of them followed by a number of corollaries and particular cases. This work had taken him so many weeks that he felt that if he were to edit the entire Notebooks "it will take the whole of my lifetime. I cannot do my own work. This would not be proper." He urged Indian authorities and G.N. Watson and B.M. Wilson to edit the Notebooks. Watson and Wilson divided the task of editing the Notebooks - Chapters 2 to 13 were to be edited by Wilson and Chapters 14 to 21 by Watson. Unfortunately, the premature death of Wilson, in 1935, at the age of 38, aborted this effort. In 1957, with monetary assistance from Sir Dadabai Naoroji Trust, at the instance of Professors Homi J Bhabha and K. Chandrasekaran, the Tata institute of Fundamental Research published a facsimile edition of the Notebooks of Ramanujan in two volumes, with just an introductory para about them. The formidable task of truly editing the Notebooks was taken up in right earnest by Professor Bruce C. Berndt of the University of Illinois, in May 1977 and his dedicated efforts for nearly two decades has resulted in the *Ramanujan's Notebooks* published by Springer-Verlag in five Parts, the first of which appeared in 1985. The three

original Ramanujan Notebooks are with the Library of the University of Madras, some of the correspondence, papers/letters on or about Ramanujan are with the National Archives at New Delhi and the Tamil Nadu Archives, and a large number of his letters and connected papers/correspondence and notes by Hardy, Watson, Wilson are with the Wren Library of Trinity College, Cambridge. "Ramanujan : Letters and Commentary", by Bruce C. Berndt and Robert A. Rankin (published jointly by the American Mathematical Society and London Math. Society, 1995) is a recent publication. The Ramanujan Institute for Advanced Study in Mathematics of the University of Madras is situated at a short distance from the famed Marina Beach and is close to the Administrative Buildings of the University and its Library. The bust of Ramanujan made by Mr. Masilamani is housed in the Ramanujan Institute. In 1992, the Ramanujan Museum was started in the Avvai Kalai Kazhagam in Royapuram. Mrs. Janakiammal Ramanujan, the widow of Ramanujan, lived for several decades in Triplicane, close to the University's Marina Campus and died on April 13, 1994. A bust of Ramanujan, sculpted by Paul Granlund was presented to her and it is now with her adopted son Mr. W. Narayanan, living in Triplicane.

(From the Web Site)

The greatest hockey player of all times, **Dhyan Chand** was a magician with a hockey stick. His was the Golden Age of Indian Hockey. In 1928, he won India's first gold medal in the Amsterdam Olympics, the first of three successive gold medals in hockey that it would win at the Olympics. At the 1932 Los Angeles Olympics, India beat the US 24-1, the highest number of goals ever scored in an international match. India defeated Germany in the 1936 Olympics and Hitler hosted a special dinner of which Dhyan Chand was offered the post of colonel in the German army if he emigrated. He refused. After independence, he was promoted to the rank of major and was honoured with a Padma Bhushan. Indian hockey has declined since then, but Dhyan Chand will remain a legend of Indian sports for times to come.

RAMANUJAN'S GROWING INFLUENCE A TRIBUTE

Krishnaswami Alladi

Srinivasa Ramanujan's influence seems only to increase and not diminish with time, in the early part of the twentieth century. Ramanujan was perceived as a mathematical phenomenon emerging G.H. Hardy and others at Cambridge University. Although they admired Ramanujan for his genius, Hardy and his contemporaries could not measure the full significance of Ramanujan's discoveries and the eventual impact this would have. Over the years, the magnitude and importance of Ramanujan's mathematics has been realized, and its impact in various branches of mathematics such as Number Theory, Combinatorics, Analysis, Modular Forms, Basic Hyper geometric Series, and Special Functions, is deep and everlasting. Indeed, Ramanujan's identities have made their presence in other subjects like physics and computer science.

Hardy nurtured Ramanujan, and lectured often on Ramanujan's work. Hardy's Twelve Lectures on Ramanujan's is a model of the mathematical exposition. These lectures, along with Ramanujan's Collected Papers, served as the principal source of inspiration and reference for many years for those who desired to understand the remarkable work of the Indian genius. In the last few decades, there have been several significant publications expanding on Ramanujan's work, and therefore have impacted a much wider community of research mathematicians. We owe a special debt of

gratitude to the great Trinity of the World of Ramanujan—(1) to George Andrews for explaining the significance of many of Ramanujan's identities, especially in the context of partitions, and for discovering Ramanujan's "Lost Notebook" and helping us understand hundred's of deep identities contained therein including those on mock theta functions, (ii) to Bruce Berndt for editing Ramanujan's Notebooks in Five Volumes, and (iii) to Richard Askey for providing the broad picture of how Ramanujan's work is in the world of Special Functions. Thus the present-day researcher can easily enter the mansion of Ramanujan's theorems and make connections with current research.

The Ramanujan Centennial, celebrated in 1987, was an occasion when mathematicians around the world gathered to pay homage to the Indian genius. The centennial celebrations showed clearly how alive Ramanujan is in current mathematical research, and how much an inspiration he was to celebrated mathematicians like Atle Selberg. While attending the centennial, I was inspired to create something which would simultaneously be a tribute to Ramanujan and would connect Ramanujan to current research developments continuously. Thus I got the idea to launch *The Ramanujan Journal* – an international journal dedicated to all areas of mathematics influenced by Ramanujan. This

Rakesh Sharma became the first Indian cosmonaut to go into space, aboard the Soyuz T-11, for a rendezvous with Salyut-7 in 1984.

desire of mine became a reality in 1997 after this idea received support from the international community of experts, some of whom serve on the Editorial Board with me.

In the last decade, Ramanujan has made an impact beyond mathematics, on society in general. Of course, throughout India, Ramanujan's remarkable story is well-known, and Ramanujan, a hero to every eager Indian student of mathematics. But with the publication of Robert Kanigel's book. *The man who knew infinity*, Ramanujan's story reached out to society around the world, and the importance of this impact cannot be underestimated. Subsequently, Bruce Berndt and Robert Rankin have published two wonderful books. The first one called *Ramanujan – letters and Commentary* collects various letters written to, from, and about Ramanujan, and makes detailed commentaries on the letters. For instance, if a letter contains a mathematical statement, there is an explanation of the mathematics with appropriate references. If there is a statement about Ramanujan being elected Fellow of the Royal Society (FRS), then there is a discussion about the procedures and practices for such an election. The second book called *Ramanujan—Essays and Surveys* is a collection of excellent, articles about certain individuals who played a major role in Ramanujan's life. Thus both books will appeal not only to mathematicians, but to students and lay persons as well.

In what other ways will we see Ramanujan influence us in the future? Courses on Ramanujan's work are regularly ordered at various universities where there are groups of experts working on Ramanujan's manuscripts. In writing the Editorial for the rest issue of *The Ramanujan Journal*, I said, "The very mention of Ramanujan's name reminds us of the thrill of mathematical discovery."

Now with the appearance of these books that are now having an impact on society in general, it may not be an exaggeration to predict, that in the future, Ramanujan will be a topic or subject that undergraduate mathematics students worldwide may be studying regularly.

The latest big event in the world of Ramanujan is the recent acquisition of Ramanujan's home in Kumbakonam by SASTRA University. This private university that was founded recently has grown by leaps and bounds. We owe special thanks to prof.R.Sethuraman, Vice-Chancellor of SASTRA University, and his family, for taking steps to ensure that Ramanujan's home will be properly maintained. Since a university has purchased Ramanujan's home, we now have the active involvement by administrators, academicians, and students, in the preservation of Ramanujan's legacy for posterity.

(The author is with the Department of Mathematics, University of Florida, and Gainesville) (The Hindu)

For long a colony of the British, the Indian initiative in science could be said to be restricted for many years. Ironically, **C.V.Raman** could win the Nobel and **Bose** could come close to it only during the British rule. India has been made self-reliant in manufacturing weapons and missiles, original research has been conspicuous by its absence. One name stands who has made a contribution that has changed history—that of **M.S.Swaminathan**, whose legacy extends much beyond India.

RAMANUJAN REVOLUTIONISED MATHEMATICS

The world is passing through one of the most exciting times with respect to mathematics, George Andrews, Evan Hugh, Mathematics Professor, and Pennsylvania State University, United States, said at Kumbakonam today (22/12/2003).

Delivering a lecture in commemoration of the 117th birth anniversary of the mathematician, Srinivasa Ramanujan at the Srinivasa

Ramanujan centre of Shanmugha Arts Science Technology and Research Academy (SASTRA), Dr. Andrews said the computer

revolution the world witnessed was nothing but a mathematics revolution and no branch of science could exist without mathematics. Mathematics was a “world language”.



Describing Srinivasa Ramanujan as the greatest mathematician of the 21st century, he said Ramanujan revolutionized the subject. Regarding use of many tools such as calculators

and computers in education, Mr. Andrews said, “We have to keep machines under control in education”. (The Hindu).

The list of records achieved by Sunil Gavaskar is long; He broke Donald Bradman’s record of highest number of Test centuries in 1984 and became the first batsman to score more than 10,000 runs in Tests. He was Wisden’s Cricketer of the Year in 1980. He made a great impact on sports not only in his country, but world-wide. He will also be known for helping players and was instrumental in getting for them a better financial deal from the Board of Control for Cricket in India (BCCI). It was Gavaskar who got huge endorsement from companies for players, giving them a better financial security than was earlier available to them. After retirement he is still associated with the game as commentator and as an advisor to young players. Indian cricket owes much of its present popularity to Gavaskar.

Milkha Singh was a sporting hero for an entire generation. He won two golds at the Tokyo Asiad in 1958 and came to be known as the ‘Flying Sikh’. However, despite breaking the world record, he could finish fourth in the 400m final at the Rome Olympics in 1960. He stands out for his individual effort and was honoured with the Padma Shri in 1959.

FIRST ASIAN TO ENTER 'HALL OF FAME'

M.R.Aravindan

For eminent persons, honours matter little at one stage of their professional career, as serving the society becomes more important. Dedicated to their service, these men continue to make great contributions to the field they are associated with.

However, the society takes pride in honouring the noble services of such stalwarts.

Dr. G. Venkataswamy, Founder-Chairman, Aravind Eye Hospitals, is a good example. He is inducted into the 'Ophthalmology Hall of Fame,' created by the American Society of Cataract and Refractive Surgery (ASCRS), in recognition of his services and contributions to modern ophthalmology.

The 'Ophthalmology Hall of Fame' was created by the ASCRS in 1999 to honour experts in the field of ophthalmology. In the past six years, 33 outstanding ophthalmologists have been accorded this unique honour by means of global nominations.

Another uniqueness of the achievement by Dr. Venkataswamy is that he is the first Indian and Asian to enter this 'hall of fame.'

Dr. Venkataswamy has so far performed 100,000 successful eye surgeries. He has developed and pioneered the concept of eye

camp and safe, assembly-line techniques. It becomes a model for blindness prevention and treatment programmes worldwide.

The induction ceremony was held during a special convention of the ASCRS at San Diego, US, on May 1 this year.

Dr. Venkataswamy was conferred with an award, which was presented by Dr. Arvind, Administrator, Aravind Eye Hospitals, as requested by the conveners of the convention.



A special brochure released on the occasion said, "The American Society of Cataract and Refractive Surgery is proud to induct into the Ophthalmology Hall of Fame, three individuals whose contributions to the field have paved the way for the modern ophthalmology, which is being practiced now. These pioneers laid the foundation for the modern practice of ophthalmology by advancing research in ophthalmic biochemistry, developing knowledge and treatment of glaucoma, training thousands of ophthalmologists throughout the world, building institutions that will continue an ophthalmic research for years to come, and creating programmes that could extend the benefit of eye surgery to the people in the underdeveloped nations." **(The Hindu)**



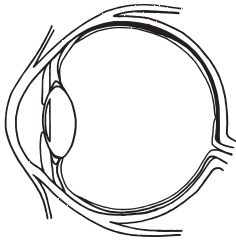


A HOLISTIC VIEW OF EYE CARE N. VENKATESH PRAJNA

Shastry.V. Mallady

“About 15 percent of the ophthalmologists in the country would have had some sort of training from us. Since 1996, we have been one of the top post-graduate centres in the country”.

The four letters of the English alphabet, which a doctor covets to adore his nameplate, are F R C S (the Fellow of Royal College of Surgeons)—a qualification that comes from London. The rest of the world travels to the United Kingdom for the test to get this distinction. However, this royal tag can be obtained from the Temple City without having to go to England. The sheer determination of the



Aravind Eye Hospital has made it possible for Madurai to get this rare honour. You can get the FRCS right from this place, and the examiners visit the city to conduct

the test. “We have shattered the myth among the post-graduates that the FRCS is a tough examination, and that only London could be the centre for it. For a place like Madurai to be recognized as the only centre outside London is a national achievement,” says **N.Venkatesh Prajna**, Chief of Medical Education, Aravind Eye Hospital. Coming from a family of distinguished ophthalmologists, Dr.Prajna is a cornea expert who keeps his eyes wide open to the global demands, and a local who says he will do anything for Madurai. And his efforts made the city the FRCS exam centre. He recalls the journey of excellence.

The efforts made by him to realize his dream of making Madurai an FRCS centre are painstaking. The first was to get international examinations conducted in the city. In the last five years, around 60 post-graduates of the Aravind Eye Hospital have passed the FRCS examination without leaving the country.

After Milkha Singh, Indian athletics has been synonymous with **P.T.Usha's** name. Hers is a story of extraordinary courage and motivation. She has been on the sporting scene at an age when others think of retiring—she was 34 when she took part in the Bangkok Asiad in 1998. She dominated athletics during 1983-89 and won numerous medals in Asian Track and Field Championships and at Asiads in New Delhi and Seoul. However, she missed the bronze medal in the 400 m hurdles at the 1984 Olympics in Los Angeles. She was back in 1997, winning a national championship and in 1998 won two bronze medals in the Fukuoka ATF meet. A better story of personal courage and motivation would be hard to find.

A high pass percentage, says Dr.Prajna, has prompted the Royal College to shift its examination centre to Madurai, the only centre in the world outside London. “Earlier, it was considered a big thing, but it is a myth now. Madurai has earned a great distinction,” says this 37-year old doctor, who has a long agenda for the hospital.

In the background of the whole effort are the belief that Indian doctors need not feel inferior and an effort to erase the feeling that the FRCS is not conquerable. That ‘complex’ mentality has been removed now, he says proudly. The cornea consultant, an alumnus of the Madurai Medical College and the TVS Lakshmi Matriculation Higher Secondary School, sees the Aravind Eye Hospital as a brand and a medical institution that blends sophistication with simplicity, “Sophistication in learning and simplicity in practice,” he says, is the motto.

With the aim of training as many doctors as possible to the highest possible standards in ophthalmology. Dr.Prajna says the hospital has introduced the trainer’s concept. “About 15 per cent of the ophthalmologists in the country would have had some sort of training

from us,” he says with satisfaction. “Since 1996, we have been one of the top post-graduate centres in the country”.

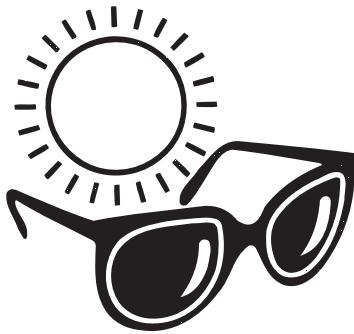
The examiners from the United Kingdom oversee the Royal College of Ophthalmology examinations.

Dr.Prajna looks at the eye care system with a holistic view. “When Coke can reach remote areas and establish its brand, can’t the healthcare providers go to the rural people,” he asks. The hospital handles one million outpatients every year, and accounts for five per cent of the eye surgeries in the country with only 0.3 per cent of the manpower.

“We want to be like the Indian Institutes of Technology and the Indian Institutes of Management in eye care, and so the aim is to invest in quality training.”

He sees the possibility of “health outsourcing” too, as the patients abroad wait for months. So, Madurai should not miss the trend, “Aim, dream and ambition guide the hospital,” he says, while expressing delight that the President, A.P.J.Abdul Kalam, has mentioned about the hospital in his book, ‘Ignited Minds’.And, now Dr.Prajna is igniting the Madurai minds.

(The Hindu)



Jagdish Chandra Bose worked on radio waves and in 1899 published a paper announcing the invention of the Coherer, an early form of a radio receiver. Marconi’s wireless was based on the Coherer but though Marconi won the Nobel Prize, Bose’s contribution was not recognised. Despite this, he remained an inspiration for Indian scientists during the first half of the century. Through his work, he showed that Indian scientists could be as good as any in the world despite limitations of materials and resources. He founded the Bose Research Institute in 1915.

A MISSION THAT CARRIES WEIGHT

“There are many more avenues wherein defence technology can be used for a social cause,” says the President, **A.P.J. Abdul Kalam**. His passion for using the missile technology to construct artificial limbs propelled the authorities concerned to use light-weight carbon material designed for Agni missile to make calipers.

The composite material reduces the weight of calipers from the conventional four kg to just 400 gm.

In keeping with this mission of the President, the Rotary Club of Coimbatore Mid-Town, in association with the Rotary Club of Madurai, introduced the Rotary’s Artificial Limb Centre on Wheels, a mobile artificial limb manufacturing unit, in Madurai, and provided artificial limbs to the deserving persons free of cost.

The project identified amputees, who lost their limbs in accidents, occupational hazards or because of diabetes, etc., in Tamil Nadu and Kerala.

Various campsites were identified and mobile workshop unit was also stationed at the camp. The unit had the entire required infrastructure to fabricate required size and type of walking and (limbs, boots, etc.) “We take measurements of the handicapped people, then we cast the mould using Plaster of Paris. The weightless and unbreakable

high-density polyethylene material will be heated to reach 206 degree to 230 degree Celsius. The artificial limb is made inserting the mould into the molten material. After making the limb, it is fitted with the rubberized foot imported from Jaipur. The limbs and foot come in black and skin colour,” R.Sankara Subbu, Orthotic and Proshetic technician, says.



The van visited several places based on requests from people of particular place. “We make two limbs a day. We visit places on requests from amputees. This time we have come down to Madurai and made 23 artificial limbs, which were distributed by the Rotary Club of Madurai,” says Mr.Sankara Subbu.

So far more than 1000 persons have benefited from the programme. The mobile unit visited the Thiruvananthapuram Medical College and provided artificial limbs to patients who lost their limbs owing to cancer. The unit has also visited Neeleswaram, Parur, Kodunkalur, Mulenthuruthi and Pulpalli.

In Tamil Nadu, the unit has already visited Sathyamangalam, Udhagamandalam, Dharmapuri, Namakkal, Salem, Udumalaipettai, Palani and Madurai. “We plan to visit Andaman and Nicobar Islands next month and in February 2005 we will visit Philippines,” Mr.Shankara Subbu says.

SERIOUSLY RICH

Billionaire faces in globalizing India

How things have changed! There was a time when Indian tax rates were so high they exceeded people's incomes. In less than ten years, the country has seen companies growing super-fast and rushing past the \$1 billion turnover. Till five years ago IT was a \$150 million business. Today IT majors Infosys and Wipro have become billion dollar companies.

The scales are much higher now than they were ten years ago. Even twenty years ago Rs.100 crore turnover was considered big. Companies today talk in terms of putting up global size plants. Ranbaxy, the pharmaceutical leader, is nudging towards a \$ 1 billion turnover. Kiran Mazumdar, the newest Indian billionaire, is confident of taking her company, Biocon, to the billion dollar league in the next few years. It is happening in all sectors. The TVS group, which makes auto components and two

wheelers among other things, has a turnover of more than \$2 billion. The Tata group companies Telco, Tisco and TCS have all crossed the billion dollar figure. In this process not only are big corporations being created, but also many individual billionaires. They in turn create many jobs. The TVS group in the South employs 23,000 people.

Wipro has almost 30,000 on its rolls and the much smaller Biocon has a staff strength of about 1,000.

Size brings recognition, particularly global recognition.

Today international business magazines include Indian billionaires among the lists they prepare. A much-anticipated list is the American magazine Forbes' list of Indian billionaires. Some of them are inheritors and some are first generation entrepreneurs. Their elevation to big league has come in the last few years.

(The New Sunday Express - TNSE)



Every major defence or space related development in recent times in the country carries the involvement of **A.P.J.Abdul Kalam**, who has been with the DRDO or ISRO for over 40 years. He was responsible for the success of the Satellite Launch Vehicle and missiles like Agni, Prithvi, Trishul and Nag, using indigenous technologies. He has also been the guiding force behind the nuclear tests of May 11-13, 1998. He will be remembered for making India a nuclear power and of making the weapons required for the country's defence.

SHIV NADAR

Reclusive CEO

The rather low profile **Shiv Nadar** is the brain behind the HCL group, which is rated as one of the biggest companies in the Indian IT industry. Shiv Nadar along with friends like Arjun Malhotra who now runs Tech Span, started the HCL from a small flat in Delhi in 1976. An electrical engineer from Coimbatore, Nadar was among the first to work out the onsite-offshore model, realizing the limitations of the offshore business model. He spearheaded strategic alliances, joint ventures and acquisitions during 1995-97, the period during which HCL laid the foundation for

its growth. In 1996, Nadar's clout in the industry was such that when Microsoft chief Bill Gates visited India he met with Nadar soon after his breakfast with the Prime Minister. In December 1999, the company successfully completed an IPO and raised Rs.823 crore (Rs.8.23 billion). Apart from HCL technologies, Nadar has two other major investments: NIIT and HCL Infosystems. However, he stepped down as chairman from both these companies and, in the last three years, has almost completely disappeared from the limelight. With a fortune of \$1.8 billion, the 58-year-old Nadar bags the 310th spot in the Forbes list.

(TNSE)



ANIL AGARWAL

Cable Czar

Sterlite Industries' **Anil Agarwal** is a typical first generation risk taker. And he has had his share of hits and misses. In 1998, Sterlite made a hostile bid for Indian Aluminum Company but got pipped to the post by Hindalco in one of the most vitriolic takeover battles that corporate India has seen. But in 2002, Sterlite bid for Balco successfully and turned Balco into a model for the government's divestment programme. Agarwal set out as metal scrap merchant, a cable manufacturer and then branched into telecom. Corporate India started taking notice of this first generation entrepreneur

in the early 1990s, when he decided to integrate his cable business.

Today, Sterlite is a near monopoly in the optic-fibre industry. Meanwhile, Agarwal has become an integrated player in cables, copper and aluminum, all businesses integral to the fast growing telecom sector. He plans to double Sterlite's annual turnover to around \$3 billion by 2005-06. fifty-year-old Agarwal, with a worth of \$1 billion, is ranked 552nd in the Forbes list and is poised to be the infrastructure king of India's telecom sector.

(TNSE)



SHOEMAKER LEADS GOVERNMENT WAR AGAINST TB

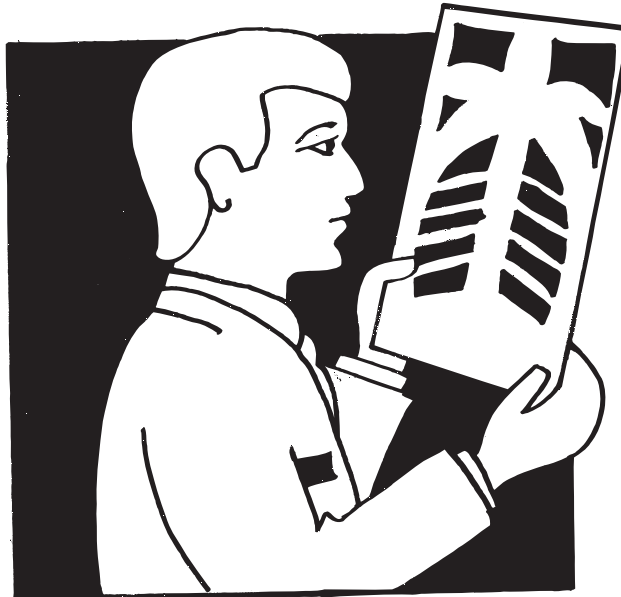
Toufiq Rashid

It's an unlikely battleground in India's fight against TB, a disease that Prime Minister recently said poses a serious threat to the country's progress and well-being. And **Bansi Lal** is an unlikely warrior.

But try telling him that. A shoemaker, who lost his father to the disease and saw his brother struggle against it, has turned a small room in his run-down double-storey house in Karnal's Sadar Bazar area into a TB clinic for nearly 110 patients.

After having joined as a community volunteer in the TB control programme of the government a year ago, he has put 50 patients on the path to recovery. Starting from identifying possible TB patients in his neighbourhood to ensuring they take their medicines on time, Bansi Lal

takes care of all. Be it the neighbourhood Chachi who was heard coughing for months before Lal took her to the doctor, or his helper Kanaya, whose illness has turned chronic by the time. It was this work that earned him a WHO honour at a function held in the capital in the third week of March 2004 as part of the second Stop TB conference.



Lal decided to join the TB war, for which he takes no remuneration, after his younger brother got and survived the disease.

Everyday TB patients from nearby houses line up outside Lal's house to take their daily dose of medicine. If the queue gets too long, his teenage daughter Madhu and his younger brother Mohan Lal pitch in. Inside the small room doubling as a

After almost a decade of working as assistant accountant-general **C.V.Raman** returned to his first love, science. In 1930 he became the first Asian to win the Nobel prize in science, for his discovery, the Raman Effect. The Nobel came at a time when India was not independent and nobody believed any worthwhile research could come out of the country. Raman was not merely a scientist but a builder of institutions: He founded the Indian Academy of Sciences in 1935 and the Raman Institute in 1947.

clinic, the furnishings include a water cooler, a small stool holding two glasses, green-coloured almirahs stocking hundreds of boxes of medicine, a few old pieces of furniture and a register with the names and addresses of the patients. A graduate, Lal updates the registration cards of the patients as well as his own records.

Doctors at the district TB centres register the names of the patients and after a full examination and diagnosis refer them to Lal if they happen to be from his neighbourhood. The TB health visitor introduces him to the patients, besides giving him a copy of their registration cards and boxes of their medicines for the entire regimen. Lal is one of the hundreds of volunteers registered as DOTS provider under the Revised National Tuberculosis Control Programme (RNTCP) in India. The programme advocates taking help from the community to implement DOTS, wherein a patient is given medicines under the supervision of a doctor or a paramedic.

Bansi Lal also constantly reminds the patients of the dates of their check-ups and sputum examination. "If the patient fails to come on the fixed day, I send out my family members to look for him," he says.

What works in this system is the personal rapport shared by a volunteer like Lal and the patients, most of whom are his neighbours or acquaintances. A tea shop owner, Mohan Lal lives in the house next to Lal's and has been taking medicine at his DOTS centre for seven months. Kamala, who is to complete her six-month treatment this month, is gushing in her praise for Lal. "Sabki Seva Karte hain aur ek paisa bhi nahin lete (He serves everyone else, takes nothing for himself)," she says:

TB in-charge of the district Dr.N.Saini says: "To have each and every TB patient monitored by a doctor is not possible in India, as the patient load is very high and the number of doctors very less. So these community volunteers are a great help." Though Karnal district has about 10 community volunteers, what puts Bansi Lal apart, says Dr.Saini, is his compassion and the number of people who have been cured through him.

He himself says that's all he want-to be able to serve. "I met the Prime Minister (at the TB conference last week), saw a totally different world in my two days of stay in Delhi. I have got everything I want," Lal says. But there is one thing. He is looking forward to his 17 year-old daughter Kanchan becoming a doctor and carrying on his work.

[TNIE]



Ornithologist **Salim Ali's** books are an authority on Indian birds. He studied ornithology in Berlin and worked for the Bombay Natural History Society (BNHS). In 1941, the first of his books, *The Book of Indian Birds*, was published. He earned worldwide recognition and 1976 won the Paul Getty Wildlife Conservation Prize, the amount of which he donated to BNHS.

AMBANI: AMBITION SPELT DIFFERENTLY!

This is the story of a man who had nerves of steel and an astonishing resolve flowing in his veins. A man of modest beginnings, he was instrumental in spurring the industrial sector to life in India and giving the country its largest private sector enterprise—Reliance Industries.

The ‘polyester prince’ **Dhirajlal Hiralal Ambani**, better known as Dhirubhai, spawned a behemoth Rs.65,000 crore empire and gave entrepreneurship its real meaning in the Indian context. He passed away on July 6, 2002.

Reliance is the only Indian private company to make the global Fortune 500 list of the world’s largest corporations, and Ambani was listed by Forbes as the 138th richest person in the world this year (2002).

This forerunner of indigenous enterprise was born to a school teacher in Chorwad, a small village in Junagadh district of Gujarat. Cherishing dreams of making it big, this young man made Aden his home at the age of 17, where he worked as a gas station attendant for Bese and Co. Fate had etched some great plans for Dhirubhai and he steadily moved ahead, gathering the funds that would serve as the capital for starting the life that would gain epic dimensions in the times to come. He returned to India in 1958 and established Reliance Commercial Corporation that exported spices and general merchandise and imported-polyester yarn.

In a few years’ time, the foundations were laid for Reliance textiles and from then there

was no looking back. Vimal, the textile brand he set up, flourished and remains a household name in India today. Dhirubhai’s efforts began in an era that was infamous as the license-permit raj. The Indian industrial scene then was dominated by a few names.

For any other individual or firm to gatecrash into this coveted kingdom of few names, acquiring the license was the first major hurdle to be overcome. Numerous stories abound about Dhirubhai’s acumen for controlling the factors that could have affected his business. Some attribute the success of this silver-tongued man to his suave ways and the element of ruthlessness with which he pulled strings behind the curtains, to have the tide turn his way.

In 1980 the party in power is said to have gone a long way in facilitating many of Ambani’s mega plans, including the Patalganga project. Luck was also playing along and by the time Dhirubhai was ready, the licensing system was proving to be totally futile. Ambani’s desire from the very beginning was not to become competitive globally, but to acquire world class capacities, so that the enterprise had strong foundations before it ventured out internationally.

For setting up the requisite capacities, another major obstacle was the funds. Dhirubhai Ambani broke the convention that had hitherto been followed—obtaining loan from the banks. He went on to sell dreams of instant riches to the ordinary individuals, these were dreams that he was committed to making a reality. He raised incredible

amounts on the stock markets. The household savings were mobilized initially, when the foreign companies (under pressure from Foreign Exchange Regulation Act) first sought to dilute their equity by offering them to the public in small lots. Dhirubhai smelled blood and went for the kill. Besides money raised in this manner, Reliance also used the convertible debenture route and the American Depository Receipt (GDR) issues.

The razor sharp Dhirubhai rose to instant fame in 1982 when he averted Bear hammering of Reliance shares at the Bombay Stock Exchange. Reliance brokers acted well in time to purchase the company's shares and upset all plans of pulling down the company. The impact of the incident was more on the bears, who had to suffer heavy losses.

Reliance has over 40 lakh shareholders, which is a record of sorts. Its shares offered genuine value, and those fortunate enough to have had faith in the company in its early year eventually became millionaires. Annual general meetings were held in sports stadiums, where Ambani would be hero-worshipped by shareholders.

Along the road to growth, Dhirubhai managed to earn a good number of enemies too, who spelt hindrance in Reliance's growth. After change of government it was a smooth sailing for Reliance again.

It was Ambani's decision to integrate vertically in the initial years and concentrate on petrochemicals and downstream products. Reliance moved from manufacture of synthetic textiles into the manufacture of polyester fibre and filament yarn; from yarn and fibres to intermediates like purified terephthalic acid and mono-ethylene glycol;

and further upstream into basic building blocks like paraxylene. The company also went about managing horizontal diversification into petrochemical end-products such as linear alkyl benzene (LAB), or thermoplastics like high density polyethylene (HDPE), low density polyethylene (LDPE), polyvinyl chloride (PVC) and styrene butadiene rubber (SBR—synthetic rubber) and a lot more.

With inflow of large profits from its petrochemical operations (the Reliance refinery in Jamnagar is the largest in the world with a capacity of 27 million tonnes. The company has acquired a 10 per cent stake in Petronet India Limited, set up for establishing a network of pipelines across the country), share premium reserves and additional equity and debt coming from the markets, Reliance fuelled its growth bringing it where it stands today. Sensing that the time was right, Reliance decided to take the route of diversifying entering sunrise industries like telecommunications along with power and financial services.

Setting up and implementing mega projects is known to be Reliance's core competence. Reliance Infocom is a new venture in which Reliance Industries has a 45 per cent stake. It is the conduit for wire line telecom, while Reliance Telecom is mostly involved with the wireless business. It has already started work on fixed line, mobile, long distance and international telephony. Reliance is in the process of establishing an international scale broadband, IP backbone, connecting India's top 115 cities. Reliance Telecom has licenses for cellular mobile telephone services in seven circles spanning 15 States. With a subscriber base of nearly 2 lakh, Reliance Telecom is active in 86 towns.

The unmatched business sense of Mr. Ambani showed up again when the privately-held Reliance Life Sciences shot to fame when it figured on the list of 10 laboratories world wide that met US President Bush's eligibility guidelines for becoming a source of stem cells and eligible for federal funding. The company invested \$5 million in stem cell research in 2001, at the Harkisondas Narrotamdas Hospital in Mumbai. The venture now has an investment of \$25 million for a period of nearly four years, during which the biotech arm plans to set up skin banks for burn patients.

Power generation also fitted the bill and is now part of the company's portfolio. Its power plans started taking shape almost a decade ago when it picked up a 10 per cent stake in Mumbai-based power utility BSES. Reliance has tied up with Mirant Asia Pacific Limited and is setting up a thermal power plant at Hirma in Orissa. In addition, there is the 447 mw Patalganga project and the 500 mw project at its Jamnagar complex in Gujarat.

Reliance set up two subsidiaries (Reliance General Insurance Company and Reliance Life Insurance Company) when the insurance sector was thrown open for private players. Reliance General Insurance, giving attention to the corporate sector, has booked a total premium income in excess of 60 crore rupees in fiscal year 2002. However, Reliance Life Insurance Company is yet to become operational as it awaits the ascent from the Insurance Regulatory and Development Authority (IRDA). The subsidiary plans to sell insurance online.

For a man who moved from the village to working as an attendant, to living in a chawl in Mumbai, to giving the common man a means to realising his dreams and realising his own, life was one well lived. To the man who proved it that it is possible for a rank outsider to storm the bastion of the elite, that miracles do happen, a few faults are forgivable.

(Adapted from "The Competition Master")



N.R.Narayana Murthy: Co-founder and Chairman of Infosys, he has been named in the Time-CNN survey of the top 25 influential global executives. He is the only Indian to be named in the list.

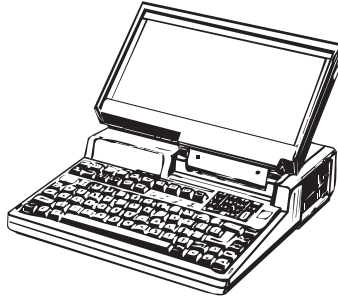
INDIA SHOWS THE PATH

All over the world, elections in any country are attaching observers from many other Nations. But the 2004 elections in India were unique and were watched with special attention from many places. Special observers come from many countries to watch the huge exercise of electronic voting machines being put to use at such a large scale. The world wanted to know how India handled this mammoth event.

From 1952 general election onwards India has been introducing innovation in every election. The culmination of that series of experiments is that this year, 67 crores of people were pressing buttons in 10 lakhs of voting machines in the 2004 poles.

The first electronic voting machine (EVM) was designed in 1982. But to perfect it and to put it to public use, it took eight more years. In one or two by-elections the EVM was used experimentally and then across the states in Madhya Pradesh and Rajasthan in the assembly elections. In Tamilnadu's 2001

assembly elections the EVMs were pressed into service. All this showed that the Indian voter is open to new ideas. The limitation of EVM is that it can handle a maximum of 64 contestants only is a constituency. Its credibility was proved beyond doubt in the 2004 elections.



This system is catching on across the globe. Mauritius, Singapore, Malaysia, and Sri Lanka have placed orders for EVMs for experimental work in those countries. US may use such machines in this year's Presidential poles.

Many envoys of countries accredited to New Delhi have seen the functioning of EVMs and have landed them.

Many Commonwealth countries which participated in the 2003 London meet on Democracy have opted to follow the Indian Example. In its fifty years as a Democracy, the Indian republic has given the world a good example and a useful lead.

(Translated from an Editorial in Tamil Newspaper Dinamani)

One of the enduring pictures of Indian sports has been of **Kapil Dev** holding the World Cup in 1983. Kapil Dev is undoubtedly one of the greatest cricketers that the country has produced. He was an incredible all rounder, who wielded the bat with as much aplomb as he bowled. He demolished the myth that the country could not produce a genuine pace bowler. He held centre-stage in bowling for almost 15 years. In 1975 he made his debut in First Class Cricket and had led India to a World Cup win in 1983, scoring 175 not out in the finals after he took the bat at 17 for 5. By 1994 he had broken Hadlee's record to become the highest wicket-taker in Tests.

VERITAS HAILS ITS INDIAN INVENTORS

Anand Parthasarathy

The dinner party at “The Corinthian” country club on the outskirts of Pune city a few days ago (3/10/2003) had an unusual entry qualification: you needed to have an innovation in Information Technology-and a patent application—in your name.

Of the nearly 100 who attended, nearly 70 were Indian software engineers named in a U.S. patent application filed on behalf of the global storage management leader, Veritas.

It was possibly the most awesome display of ‘desi’ Intellectual Property (IP) in one place.

Except for a handful of engineers from the United Kingdom and the United States operations of Veritas, all those present worked with the Pune-based R&D centre of the company, currently 940 strong, and poised to becoming its largest development centre anywhere.

The party was the Mountain View, (California, U.S.)-based player’s way of saying ‘thank you’ to the massive Indian contribution to its portfolio of products in the emerging technology area known as ‘utility computing’.

Among those who got special mention was Veritas India’s director of technology, Anand A.Kekre, who has personally contributed to



over 30 of the recent patent filings of the company—mostly in the area of storing, backing-up, restoring, and replicating critical business data. With Ankur-Panchbudhe, he shared the special annual award instituted by the company for an innovative and far-reaching invention.

Basant Rajan was honoured for “outstanding contribution” and Niranjan Pendharkar drew wild cheers for being one of four engineers whose patent has just been granted. The Indian engineer’s innovation constitute ‘a phenomenal performance,’ said the company’s Vice-President in-charge of Intellectual Property—a special post created after the flood of ideas flowing from engineers. In fact, one in three patents filed

Dr.Sharadkumar Dicksheet; Four time Nobel Peace Prize nominee, he has been awarded the \$ 100,000 Kellogg’s Hannah Neil World of Children Prize in recognition of his dedication to providing free plastic surgery to 57,000 poor children in India.

by Veritas world wide, names an Indian engineer, he added.

“We had to constitute a special patent filter committee just to whet the suggestions,” Veritas executive president, said “We have six guys from our Pune centre in the committee.”

Radha Shelat, the chief technology officer of the Pune unit, who has been with the team since Veritas came here in 1991, said the company’s policy of giving credit to the engineers who came up with innovations in formal patent filings, distinguished it from many other IT majors.

Sharad Sharma, vice-president, product operations, who heads the India units, said India-based engineers have worked on every Veritas product in its portfolio and now exercised global responsibility for them, from Pune.

The chief guest and NASSCOM president, Kiran Karnik, said the association was trying to work with the Government to increase awareness on the need to protect Indian. Intellectual Property Rights and create special IPR courts to help enforce them if necessary.

(The Hindu)



SUNIL MITTAL

Dial M for Riches

Sunil Bharti Mittal’s schedule has been hectic during the last few months. A chairman of the Rs.4,000 crore Bharti group finalized a \$ 250 million deal with IBM to outsource the group’s entire IT infrastructure to Big Blue.

That comes close on the heels of a \$400 million deal with Ericsson to outsource and manage the groups mobile infrastructure. He is also getting into aviation infrastructure and is partnering Singapore’s Changi Airport to bid for the Delhi and Mumbai airports. Mittal, after graduating from Punjab University, started a tiny bicycle business in the 1970s. That company, Bharti

Enterprises, has grown to be one of India’s biggest telecom service providers. The turning point in Mittal’s life came in 1992 when the cellular licence for the Delhi metro-circle was being given out to the private sector. He partnered with French telecom company, Vivendi, to bag the licence. He has not looked back since. Today Bharti offers cellular services, basic telephony, and is laying optic fibre cable across 200 cities with its partner Singapore Telecom connecting Chennai with Singapore. And Sunil Bharti Mittal dreams of making Bharti one of the top two telecom player in the country. He now has a net worth of \$2.7 billion and a ranking of 186 in the Forbes list.

(TNSE)



DEVELOPMENT WITH A HUMAN FACE

Students of unaided engineering colleges are cranking out absolutely first-rate stuff these days.

Take for instance, a bright young duo from Sri Sai Ram Engineering, West Tambaram, R.C.Aravindakshan and R.S.Bharath (II year Computer Sciences and Engineering). They have jointly developed the “I-Cane” or intelligent cane that helps visually impaired persons. The cane has a guidance motor and a computerized ‘brain’ and scanner that warns the user about obstacles—pits, bumps, objects, or overhanging wires, branches or other static obstacles. It also factors in dynamic obstacles, though that is yet to be perfected.

Aravindakshan is bursting with pride and with good reasons: he has an invitation from organizers of Robomaxx 2004 to display the ‘I-cane’ in Grants Pass, Oregon, U.S. next month. He and Bharath are, meanwhile, trying to cut the weight of the cane to less than a kilo.

Arvindakshan points out that safety is the biggest concern for visually impaired persons. “Walking or taking the next step comes naturally to normal persons, not so for these people. I want to perfect the equipment before going commercial. We are in the process of patenting the idea...” the adds.

A private company, Essem Systems, is helping them fabricate the parts for the cane,

with three IIT professors S.Ramesh, G.T. Manohar and Ravindran and Sri Sairam College’s head of computer sciences department Saravanan guiding the youngsters.



A versatile sniffer robot developed by P.Rajan, A Raja and E.Lavakumar, of the same college, won the “Innovation potential of students” project award this year from the Indian National Academy of Engineering.

Triumphant return

Two third-year Electronics and Communication Engineering students of Velammal Engineering College, V.K.Lakshmanan and S.Gayatri, created ripples at an international meet on nanotechnologies at the Technical University of Munich, Germany last month. They were the youngest and the only two undergraduate participants at the meet.

Their paper, “A basic Architecture for a Multi-state Memory System using Nano-Antennas,” described an architecture to improve the memory states from two to ‘n’ states—thereby representing more than one bit per state.

The students won 400 euros (Rs.23,000) each for the best research paper award. The August 16-19 2004 conference dealt with the latest advancements in nanostructure, nanophotonics, nano-materials and their applications.

Says Lakshmanan, “The optical memory systems supporting present day computers use two state memoris (which represent 1’s & 0’s).

To increase the memory capacity one can increase the media density and reading speed. But this has its own limitations.

Our paper describes how the memory capacity can be increased by increasing the number of states that a memory system can represent. If a memory system can have four states, then each state can represent two bits each, thereby doubling the memory capacity i.e. (00,01,10,11) for each state.

The conference organizers readily accepted the paper and even waived the registration fee. Velammal Engineering College and a

teacher at the IIT. Madras, M.Kumaravel helped them raise the air fare and other expenses for the five-day trip.

After their interaction with foreign scientists, the two say they hope to pursue post graduation in material and nano-material sciences.

Innovative software

Commercial software makers are eyeing another development, this time by a woman student of Jeppiaar Engineering. This is a “combination of front-end and back-end” created by B.Shanmugapriya, a computer sciences student.

With this, one can use the same tool to create front-end controls such as labels and text boxes and creating tables. “It has only use data type ‘Text’ to view, add, delete, update and modify the design and contents of the table. Essentially it provides an inbuilt connectivity between the front-end and back-end,” she adds.

(The Hindu)



BINDESHWAR PATHAK, FOUNDER, SULABH INTERNATIONAL

Pathak has touched the souls of the erst-while ‘untouchables’.

Sulabh International, a social service organisation, provides cost-effective sanitation systems in cities, at bus-stops, railway stations and other public places. It converts dry/bucket privies to sanitary toilets, supplies toilets to houses where no latrines existed before, provides well-designed and maintained community facilities, trains and most importantly, rehabilitates scavengers to find other jobs.

(TNIE)

SIR CHANDRASHEKHARA VENKATA RAMAN (C.V.RAMAN)

Chandrashekhara Venkata Raman or C.V.Raman, as we popularly know him, was born on 7th Nov. 1888 in Thiruvanaikkaval. He finished school by the age of eleven and by then he had already read the popular lectures of Tyndall, Faraday and Helmholtz. He acquired his BA degree from the Presidency College, Madras, where he carried out original research in the college laboratory, publishing the results in the philosophical magazine. After joining the financial services of the Indian Government at the age of eighteen, he carried out and published extensive research on acoustics and optics in his free time for a decade.

Also around the time he was married to 'Loksundari'. In 1917 he was offered the 'PALIT CHAIR' in physics in Calcutta University by the then Vice Chancellor Ashutosh Mukherjee. In 1921 he delivered a lecture at the Oxford conference on the theory of stringed instruments. In 1924 he became 'FELLOW' of the Royal society and was eventually knighted by the British Government.

While in Calcutta, he made enormous contributions to vibration, sound, musical instruments, ultrasonics, diffraction, photoelectricity, colloidal particles, X-ray diffraction, magnetron, dielectrics, and the celebrated "RAMAN" effect which fetched him the Noble Prize in 1930. The mood of self-confidence can be gauged from the fact that he had his tickets to Sweden booked

before the prize was announced. From 1933 till 1970 (his death) he lived and worked in Bangalore, first at the IISc and then his own (Raman Research Institute).

All in all, he published 475 papers and wrote five monographs on an incredibly wide range of topics. He enthused generations of younger people with his excitement about nature and science, and left an incredible mark on the landscape of India.

THE RAMAN EFFECT

For more inquisitive minds, the Raman effect occurs when a ray of incident light excites a molecule in the sample, which subsequently scatters the light. While most of this scattered light is of the same wavelength as the incident light, some (i.e. getting the molecule to vibrate). The Raman effect is useful in the study of molecular energy levels, structure development, and multi component qualitative analysis. Some is scattered at a different wavelength.

This inelastically scattered light is called 'RAMAN SCATTER' which, results from molecule changing its molecular motion. Energy difference between incident light & the Raman scattered light is equal to the energy involved in changing the molecule vibrational.

*"Great advances in knowledge came
through questioning the orthodox view"*

-SIR CV RAMAN
(The Competition Master)



INDIAN ORIGIN SCIENTISTS AMONG TOP 100

Seven Indian origin scientists, including Srinidhi Varadarajan who built a super-computer from off-the-shelf commercial products, were named among the world's top 100 young researchers by *Technology Review* published by the Massachusetts Institute of Technology.

The top 100 honour, an event by the institute, recognises exceptional talent in fields like biotechnology, medicine, Nano-technology and computing. Besides Varadarajan, other young Indian origin researchers selected were Anuj Batra, Ramesh Raskar, Chaitali Sengupta, Ravi Kane, Vikram Sheel Kumar and Ananth Natarajan, according to the magazine.,

Varadarajan, director of Terascale computing facility, Virginia Polytechnic Institute and State University, conceived and built the world's third-fastest supercomputer from a cluster of 1,100 Apple Macintoshes. The project cost at around \$5 million when world-class supercomputers cost \$100 million or more. The young researcher used off-the-shelf commercial products to design the supercomputer in less than three months as he did not have the hundreds of millions of dollars for the purpose. Batra, 34, is a systems engineer at Texas Instruments. He leads one of the industry's top teams advancing ultra wideband Wireless

technology, which provides the high speeds needed for streaming media applications with low power consumption.

Raskar, 34, a visiting research scientist at Mitsubishi Electric was named for building large computer display systems that seamlessly combine images from multiple projectors.

The computer scientist's image-processing and graphics research may lead to new applications in entertainment, image-guided surgery, and user interfaces. Chaitali Sengupta, 34, is a systems architect with Texas Instruments which oversees the architecture of the communication chips. These chips are useful in multimedia cell phones which handle internet access, video-conferencing, and mobile commerce. Ravi Kane, 32, assistant professor, Rensselaer Polytechnic Institute, was selected for creating a highly potent anthrax treatment. Another young researcher, Vikram Sheel Kumar, 28, co-founder and CEO, Dimagi, developed an interactive software that motivates patients to manage chronic diseases such as diabetes and AIDS. Ananth Natarajan, 33 CEO, Infinite Biomedical Technologies, was named for devising technology that enables implantable cardiac devices to detect heart attacks. PTI



Raghav and Lavanya Haran: Raghav of Visvesvaraya College of Engineering, Bangalore; and Lavanya of the Indian Institute of Technology, Delhi are among 103 of the 'world's brightest students' from 20 countries chosen by Lucent Technologies at its second annual world-wide summit of the Lucent global science scholars programme. (T.N.I.E.)

MS – SHE SINGS ONLY FOR THE LORD: BUT HUMAN BEINGS ALSO LISTEN

The music of MS had that strange ability to subdue the most egoistical of humans. And yet, all the honours and encomia that she had received in her life had not made this greatest musician of our times one whit arrogant.

MS is the supreme role model for all aspiring musicians anywhere in the world. She took every concert as her first one rendered with total dedication, commitment and expertise.

A master of concert technique, gifted with a fine voice and mastery of *raga* and *bhava* all backed up by relentless *sadhana*, MS strode the Indian musical scene like a cossus for more than sixty years.

Amidst all the fame and popularity, MS has retained her humility, grace and friendliness for all to remain an inspiration and an object of reverence from one and all.

Unlike many top classical musicians, MS never flinched from rendering songs from other systems.

Be it Meera *Bhajan*, *Rabindra Sangeet*, Sikh hymn from *Gurbani*, 'Alwar' *Pasuram* in Tamil or Marathi *abhang*, she took to all music with the avidity of a seeker. Her voice resonates in the sacred hill of Thirumala every morning chanting the Venkatesa *Suprabhatam* as much as in Indias' homes in the USA and Europe.

Over the past six decades, no one could keep count of the number of organizations and public causes that MS had helped fund and fructify. From America to Europe to the Far East, she had given concerts in international forums and musical audiences.



She never lent her voice to commerce or personal enrichment.

Music for her is not a skill or talent but a divine sanction to be sustained by rigorous *Sadhana* and relentless practice. Well past 80, she still spends three hours in a day fine tuning her voice and practicing *ragas*.

All that she would like is for our "young lady artistes not to lose their identity with Indian womanhood however famous they become in the field." M.S.Subbulakshmi symbolizes the best of Indian womanhood.

(From The Bhavan's Journal 31-9-2004)

LATA MANGESHKAR

For close to 55 years, when Lata sang, all of India sang with her. It is a song which has no end. Recognised by the Guinness Book of World Records as the world's most prolific singer with over 25,000 songs to her credit, Lata is a living legend and an icon of icons.

Lata is a monument of committed and devoted singing. She is a very private person and not much about her private life has ever been discussed in the media. She is rarely discussed in the social circles except for her

divine vocal chords, which plumbed the tearducts of Prime Minister Jawaharlal Nehru when he heard Lata singing the unforgettable '*Ae Mere Vatan Ke Logo*'. Few eyes remain dry when this song is heard by people even today.

The attributes of Lata as a singer are that of a stern disciplinarian who is never late to a recording session and her *riyaz* never fails to come through. Her songs often outlived the films in which they figure and even the composers of the songs.

(The Bhavan's Journal 31.8.2004)



DR.VARGHESE KURIEN – AND THE AMUL-MOVEMENT

In 2000, India emerged as the world's largest milk producer, all because 50 years earlier, a young man named Verghese Kurien joined the Kaira District Co-operative Milk Producers' Union in Anand, Gujarat, as a manager.

Starting with two village cooperatives and 250 litres of milk per day, Kurien went on to create India's White Revolution. His Operation Flood, launched in 1970, followed a simple structure (called the Anand pattern): at the core were farmers and the co-operatives; on top was a district-level milk producers' union, and finally there was a state federation that did the marketing. The National Dairy Development Board, which

Kurien founded in 1963 (he won the Ramon Magsaysay Award for Community leadership in the same year), today runs a co-operative network comprising 170 milk unions and 10.7 million farmer members.

According to Indiadairy.com, the industry racked up Rs.1,05,000 crore from milk, cheese, butter, and other dairy products. There are an estimated 96 million milch animals producing 203 million litres of milk per day. The World Bank estimates that Operation Flood resulted in dairy farmers making \$9 billion more per year than they would have if milk production had continued at the 0.7 percent growth rate prior to the launch of Operation Flood.

(The Bhavan's Journal 31.8.04)



TENDS FARMS, WINS LAURELS

P.Sudhakar

Despite his age, excruciating knee pain, regularly invasion by wild animals and, finally, water shortage, 73- years old N.S.A. Velu Mudhaliar of Puliyangudi, a small town about 70 km from Tirunelveli, Tamilnadu has grown over 10,000 trees of various species on a rocky terrain of 20 acres at the foothills of Western Ghats.

Still he yearns to grow more and more trees, which got him the 'Indra Priyadharshini Vriksha Mitra Award for 2001'. Shri Velu will receive the award in New Delhi on September 9 in recognition of his concern for protecting environment.

When he started intensive farming, paddy was the only crop which occupied his entire field. But a truant monsoon and an alarming fall in groundwater table forced him to plant trees of various varieties. This effort has won him laurels.

Enriched by experience, Shri Velu has designed his own rainwater harvesting system, setting up land at various elevations. As his teak farm starts just from the foothills of the Western Ghats, rainwater from the hill immediately enters it. He has separated the teak farm into small portions, each measuring about 100 x 100 feet, with small bunds to store rainwater. After filling the first portion kept at a significant height, water overflows through pipes to the next section and the process continues. After covering the last portion, water flows to the next plot, where Shri Velu has raised neem, tamarind,

coconut, lemon, mango, casuarinas, teak, sapota, guava, drumstick etc, "Not a single drop of water goes out of my farm and I judiciously use every drop of water the Almighty gives me."

As he uses organic manure, water requirement is very less. When he plants saplings, he digs pits and fills it with tank silt. "In the first year, we have to water the plant according to requirements. In the second year, watering once in two months is enough and in the third year it may be done once in three months, as the tank silt retains water. In the fourth year, the plant will start yielding." Shri Velu unravels the trade secret. Never does he use the hybrid varieties, which he believes, could not withstand diseases and other adverse conditions.

The withered leaves of trees on the farm are converted into manure. A small portion of leaves is allowed to portion of leaves is allowed to pile up around the roots, which protect the water flowing from the drip for an extended period.

Peacock plays guard

Besides getting good revenue from the farm, the satisfaction Shri Velu draws from his farming operations is unmatched.

He does not rear any dog to guard his farm; this duty has been "assigned" to peacocks of the Western Ghats which crow continuously on seeing strangers. When his family members cross the main entrance, the

bird crows just once or twice and becomes silent soon. "Never do we harm the wild animals which enter our farm, though spotted deer and wild boar cause extensive damage to small trees and saplings we grow against all odds," says Shri Velu.

For Shri Velu, a father of six children, his farm, three km west of Puliyangudi, is his

first child as he spends over 12 hours everyday in his ranch. His vision is sharp and he does not wear spectacles, his spirit is high and he enjoys every moment of farming operation. "I'll plant more trees to make this part of the earth more viable for living," says Shri Velu, who has studied up to Standard IV. (The Hindu)



CHESS CAREER- VISHY ANAND

Aruna Anand

Viswanathan Anand, popularly known as "Vishy, the Tiger from Madras" learnt chess at the tender age of six. His assets, his lightning speed of play & intuition saw him through as the Youngest National Champion at the age of 16.

In 1987 he became the First Asian to win the World Junior Championship. He also earned the coveted Grandmaster title. He carved a special place on the chessboard by winning the strongest tournament at that time, The "Reggio Emilia" in Italy in 1991 ahead of Kasparov & Karpov.

He has been a World Championship challenger in the PCA(New York 1995) & FIDE(1997 Lausanne) cycles. He has the distinction of winning the Strongest knock out tournament in recent chess history in Groningen in December 1997.

He has also won the Linares Super Torneo in 1998, the strongest tournament at this point. His other great victories include the Melody Amber tournament (1994 & 1997),

the Credit Suisse Masters (1997), Dos Hermanas (1997) and Wijk Aan Zee(1998).

Anand is currently rated NUMBER Two in the World in both the rating lists, namely, the PCA & the FIDE lists.

Anand has been awarded many prestigious titles in India like the Arjuna Award, the Padmashri (the youngest recipient of the title), the first recipient of the Rajiv Gandhi Khel Ratna award, the Soviet Land Nehru award, the BPL Achievers of the World, Sportstar, Sportsworld "Sportsman of the year 1995" Award.

Anand holds a degree in commerce, his other hobbies are reading, swimming & listening to music.

Anand, known as the "One man Indian Chess revolution," keenly promotes the game, through innovative methods in the country, where the game first originated. He lives in Collado Mediano in Spain with his wife Aruna. (From the Web Site)

RAHUL DRAVID

Full Name : Rahul Sharad Dravid
Birthday : Jan. 11, 1973
Birth Place : Indore
Country : India
Batting : Right hand batsman
Bowling : Right arm Off Break
ODI Debut : Vs. Sri Lanka at
 Singapore, on 3/4/96
Test Debut : India v England at
 Lord's, 2nd Test, 1996



Rahul has been one of the main pillars of the Indian batting with his blend of technical proficiency & stylish strokes. His strokes are so perfect technically that he is considered as the “wall” of the Indian Team. His batting style was regarded slow for the ODI’s initially but with his imaginative placing of the ball & innovative strokes he made himself as an integral part of the Indian team for both Tests as well as ODI’s. His temperament for both the versions of the game is exemplary and has earned him respect from all the other players. The Indian Vice Captain has frequently played the sheet anchor role to perfection. . He was

verily the batsman of the 1999 World Cup with two hundreds and the highest aggregate. For this, he was named as Wisden cricketer of the year, one of the few Indians to receive this special accolade. In 2004 Rahul was named I.C.C.Cricket of the year and I.C.E. Test player of the year.

(From the Web Site)

One of the top ten batsmen of all time, **Sachin Tendulkar** is an icon of the present times. He made his debut in first class Cricket in 1987 at the age of 14 and is the youngest Indian to play Test Cricket. In 1998 he broke the record of Desmond Haynes of the highest number of centuries in one-day internationals. The legendary batsman Donald Bradman, has likened Tendulkar’s batting to his own. Known as ‘Little Champion’ Tendulkar still has many years of cricket ahead of him.

World title: Nineteen year old **Pankaj Advani** brought the World Snooker crown back to India after a 19-year gap when he out-played Saleh Mohammed of Pakistan 11.6 for the title at Jiangmen in China.

P.GOPICHAND

Born: 1973

Pullela Gopi Chand is the brightest star to emerge on the Indian badminton scene in a long time, after Prakash Padukone. He was born on November 16th 1973, in Nagaland to Pullela Subhash Chandra Bose and Subbaravamma who were both interested in sports. Gopichand is indeed a story of sheer hard work, dedication and pure determination for the game of Badminton.

Though Gopichand nicknamed Gops, favoured cricket earlier, his elder brother made him switchover to Badminton. Gopi's skill at Badminton was the talk at St.Pauls where he had his schooling, when he was hardly around 10 years old. He suffered a setback in 1986, when he suffered a multiple ligament rupture. But this young fighter came back to the field with sheer determination and reached the finals of Andhra Pradesh State Junior Badminton ship in 1987, even though he lost the title to his elder brother Rajashekar. By the time he passed out of school in 1988, he had already made a mark in the Badminton field. He did his graduation in Economics from AV College, Hyderabad. In 1989 he won his first single title at the National Championship at Goa and then went on to win the doubles championship also.

By 1999, Gopichand achieved a world ranking of 26 winning the Indian international, Scottish, Toulouse, French championships etc. He received the SAARC gold medal the same year. Always a fighter,

he refused to be crushed by his defeat in the 2000 Sydney Olympics and true to his recognition out played the Olympics champions to reach the finals of the All England Badminton ship, finally arriving at the forefront of international badminton. He defeated Olympic Gold medallist Anders Boeson in the Quarterfinals of this tournament. In the Semifinals he defeated world No.1 ceded player Peter Gade of Denmark, and in the finals he defeated Chen Hong of China. He achieved his career best world ranking of 5 in April 2001.

Gopichand was awarded the 'Arjuna Award' India's highest recognition for sportspersons, in 2000 for his excellent performance in the sport. He has tremendous respect for the rich Indian culture and tradition. He is the follower of 'The Art of Living' Guru Sri Sri Ravishankar. He is proficient in yoga and practices it in his spare time which help him to relax and focus better. Gopichand is also interested in music. A disciple of Prakash, this gentleman is considered a good defensive player, precise in his net play. He is employed by the Indian Oil Corporation in Hyderabad, but the IOC has permitted him to spend most of his time training at the Sports Authority facilities in Bangalore. This great player, with the vital combination of mental strength and concentration is sure to take the sport of badminton in India to new heights.

P.Gopichand was bold enough to turn down the rich offer by a multinational soft drink company. He would not allow his name to be used in advertising endossments.

(From the Web Site)

Azim H. Premji

Clifford Sawhney

Azim H. Premji, Chairman, Wipro Corporation. In a world where integrity purportedly counts for naught, Azim Hasham Premji symbolizes just that. The 55-year-old Wipro chairman made international waves in 2000 ever since his group became a Rs 3,500-crore empire with a market capitalization exceeding Rs 500,000 million! If any stargazer had been foolish enough to predict in 1966 that a 21-year-old Indian at Stanford University would one day achieve all this, he'd have been laughed out of business. At that juncture, Premji was forced to discontinue his engineering studies in the States due to the untimely death of his father. Returning to India to take charge of a cooking oil company, the youth infused new life into the family's traditional mindset and trade.

Over the years, Premji diversified into sectors like computer hardware and lighting, disregarding marketing laws that extolled the virtues of core competence and frowned on brand extensions into unrelated segments. Despite all the success, the media-shy Premji maintained a low profile, letting his work do all the talking. Until early last year the media broke the story that Azim Premji had become the second-richest man in the world... In spite of his billions, however, he still travels economy class and stays in budget hotels. When the man was recently honored with the Businessman of the Year 2000 award, he attributed his stupendous success to the 12,000 people who work for Wipro Corporation. Nor did he forget to mention his family. The great man then shared some tips for success:

- Have the courage to think big.
- Never compromise on fundamental values, no matter what the situation.
- Build up self-confidence, always look ahead.
- Always have the best around you, even if they are better than you are.
- Have an obsessive commitment to quality.
- Play to win.
- Leave the rest to the force beyond.

Premji the businessman practices what he preaches. When it comes to upholding personal values, there's no margin for error. Wipro managers speak in awe of the time they received a terse message that their chairman was flying down to Bangalore for a meeting. It was clear that something major was in the offing. Premji came straight to the point. A senior general manager of the company had been given marching orders—because he'd inflated a travel bill. The man's contribution to the company was significant; the bill's amount was not. Yet he had to go for this solitary lapse. It was, Premji stressed, a matter of principles. Wipro's code of conduct for employees says it all: Don't do anything that you're unwilling to have published in tomorrow's newspaper with your photograph next to it. It's that kind of integrity that has catapulted Premji and Wipro to unprecedented heights.

(From the Web Site)



INFOSYS

Mukta Hegde

N.R.Narayana Murthy, Chairman,
Infosys Technologies Ltd

An Indian IT chief who's really made it big without dropping his ethical precepts by the wayside is Nagawara Ramarao Narayana Murthy, Chairman of Infosys. Born in 1946, Murthy's father was a schoolteacher in Kolar district, Karnataka, India. A bright student, Murthy went on to acquire a degree in Electrical Engineering from Mysore University and later studied Computer Science at the IIT, Kanpur, India.

The Infosys legend began in 1981 when Narayana Murthy dreamt of forming his own company, along with six friends. There was a minor hitch, though-he didn't have any seed money. Luckily, like many Indian women who save secretly without their husband's knowledge, his wife Sudha-then an engineer with Tatas-had saved Rs 10,000. This was Murthy's first big break.

The decade until 1991 was a tough period when the couple lived in a one-room house. The second break came in 1991 when Indian doors to liberalization were flung open... Murthy grabbed the opportunity with both hands and has never looked back ever since. Today, Infosys is the first Indian company to be listed on the US NASDAQ.

While working in France in the 1970s, Murthy was strongly influenced by socialism. The bubble was pricked, however, when he was arrested in Bulgaria on espionage charges. Today, he says: "I'm a capitalist in mind, a socialist at heart." It was this belief

in the distribution of wealth that made Infosys one of the first Indian companies to offer employees stock-option plans. Infosys now has 400 employees who are dollar millionaires.

In a poll conducted by Asiaweek, the quiet, soft-spoken man was selected one of the 50 most powerful people in Asia for 2000. And 50 per cent of the respondents in an online poll conducted by The Economic Times voted him the best CEO of India.

Heading a company with the largest market capitalization hasn't changed Murthy's lifestyle much. The man still doesn't know how to drive a car! On Saturdays-his driver's weekly off-the Infosys chief is driven to the bus stop by his wife, from where he boards a company bus to work! Incidentally, Sudha Murthy is now chief of the Infosys Foundation, which channels Rs 50 million into charity every year.

Simplicity, humility and maintaining a low profile are the hallmarks of this super-rich Bangalorean. And the man is principled to a fault. Murthy's unprecedented wealth has catapulted him into the public glare. After the kidnapping of Dr Rajkumar by forest brigand Veerappan, the Home Ministry has sounded out the local government about providing Z-category security to Murthy and Premji. Both characteristically turned down the offer.

In a letter to the police top brass last month, Murthy said he was a simple man who had no intentions of annoying his neighbors and disturbing traffic with an intrusive entourage of security vehicles and personnel.

That's Narayana Murthy for you.

(From the Web Site)

NARAYANAN VAGHUL

Former CEO, ICICI

He retired in 1996 as chairman of the Industrial Credit and Investment Corporation of India (ICICI). During his 11-year tenure as CEO, ICICI came to be transformed from a small size, long-term credit bank to a large diversified financial conglomerate. Besides, Vaghul is also on the board of several companies and his work takes him all over the country though he is now settled in Chennai, India. Since 1998 he has been a visiting professor at New York University, teaching a regular course “Emerging Economies” to MBA students. Next to finance, spirituality is his forte. Vaghul was one of the earliest people to introduce spirituality at the workplace. His spiritual journey, he says, went through different stages. “I belong to a traditional, religious family of Chennai. In my early years, I had deep abiding faith in God. During my twenties, my scientific temperament questioned the concept of God. In the next two decades, I explored various beliefs, delving into the metaphysical and the concept of spirituality. I sought knowledge from various religious texts and also met luminaries: Swami Chimayananda, Dayanand Saraswati, Swami Parthasarthy. Gradually the realization dawned on me that it is not possible to find the solution merely by reading books. The truth lies within our own selves, and we alone have to explore and

reach it.” About 12 years ago, seeking answers to some of his doubts led him to S.N. Goenka. He learnt Vipassana and ever since, he has been an ardent follower. “Purifying the mind involves de-conditioning it, which is difficult as it is already conditioned in many ways and also full of impurities such as self-centeredness.

Look at it this way, suppose there is this huge tree to be cut down. You can either snip the branches or go to the root level, which is more difficult. To gain control of the mind, you have to still it first and then slowly work towards getting rid of the ego that is the ‘I’ consciousness.”



At work, Vaghul’s spiritual values influenced the work culture in many ways. “I don’t favor forcing anyone to do anything, but I feel the best way to teach anything is by example. I used to often talk about Vipassana and encourage people to go for it. I believe in merely acting as a catalyst. Those days, we used to send our middle-level executives to the Vivekananda Yoga Kendra near Bangalore to introduce them to spirituality. This has the immediate effect of bringing about a level of calmness and lowering blood pressure. These days there seems to be a trend towards conducting stress management workshops in many organisations, but more often than not, it is superficial.”

(From the Web Site)



KIRAN MAZUMDAR-SHAW

Bioqueen

Mazumdar-Shaw joins the league with a net worth of Rs.2,303 crore. Kiran took Biocon from an enzyme research company to a biopharma unit with a market-cap of over \$1.11 billion. Kiran, who holds 39.64 percent of Biocon's capital, hit the big time after the company's scrip closed at Rs.581.20 on the Bombay Stock Exchange recently. Her net worth is Rs.1,920 crore. Kiran's biocon is an amazing success story almost with no parallel in India.

A 25-year-old middle class girl started a company 25 years ago. The company grew steadily for many years. With accumulated knowledge, Kiran transformed her industrial biotechnology company. It has now become a major international pharma player.

Kiran says she would rather concentrate on building her business than keeping a watch on the billionaire's list.

(TNSE)



George, Anju Bobby: Her feat of winning the long jump bronze at the World Athletics Championship in Paris on August 30, 2003, has put her on a pedestal in Indian athletics reached by very few.

She leaped to 6.70 metres at the Stade de France that gave her a bronze and India a historic medal. No Indian athlete has ever won a medal of the World-level. Anju, in fact, is the only second Indian at a world final, the first being discus thrower Neelam Singh.

She was declared the Best female athlete of National Games 2001-2002. She was honoured with Arjuna Award in 2003. she is the first Indian woman athlete to secure Commonwealth medal. She is also the first Indian woman to win Asiad gold in long jump and the only Asian woman to reach World Indoors finals.



An Indian American, Akshay Buddiga, 13, won the second spot in the prestigious 77th National Spelling Bee in Washington.

BIOTECH QUEEN IS INDIA'S WEALTHIEST WOMAN

Kiran Mazumdar Shaw probably became India's wealthiest woman in 2003 after shares on Biocon Ltd, the biotechnology company she pioneered, had a blockbuster opening on the Bombay Stock Exchange.

For Mazumdar, the initial public officer (IPO) marks a high point in a 26-year journey that transformed Biocon from a small enzyme maker into a drug firm challenging global insulin makers such as Eli Lilly and Novo Nordisk.

The 50-year-old, who founded the firm with 10,000 rupees (\$229) in 1978, holds nearly 40 percent of Biocon, India's flag-bearer biotech company.

Biocon sold 10 percent of its capital to raise \$72 million, an offer that was subscribed more than 32 times.

The shares were priced at 315 rupees each through a book-built issue, and zoomed up to 507 rupees after opening at 435. They had drifted to around 490 rupees later.

At this price, the company's value crosses \$1.1 billion, putting Mazumdar's stake at 19.6 billion rupees (\$449 million) and making her one of India's richest women.

"To me it is just a number", Mazumdar told Reuters after the listing. "I built this company to deliver a different kind of value. These numbers are just notional but it makes me very proud. The team has made this possible."

Bangalore-based Biocon aims to grow its revenue by 30 percent a year, and is India's first significant biotech company to list its shares in the nascent industry. Besides making enzymes and drugs to fight diabetes, cancer and cholesterol, Biocon has separate units offering contract research and clinical trial services for global clients, a bid to cash in on India's relatively inexpensive scientists.

Biocon was named after Mazumdar's initial Irish joint venture partner, whose stake was later acquired by Unilever. The Indian co-founders bought back that stake when the Anglo-Dutch group exited the JV in 1998. The daughter of a master brewer at leading Indian beer maker United Breweries, Mazumdar is proud of her father.

She followed her father to take a master's brewing degree in Australia after graduating in zoology in her hometown, Bangalore, and later co-invented a unique cauldron that blended her skills. Biocon's patented biotechnology reactor based on fermentation

Satyajit Ray (1921-1992)

Ray is the greatest film director India has produced. He won special Oscar award and *Bharat Ratna* in 1992. His most famous films are *Pather Panchali*, *Aparajita*, and *Charulata*.

techniques is a key showpiece of the company's achievements.

Sporting a fancy scarf, and a friendly smile, Mazumdar hardly looks like a bookish scientist who heads a 1200-strong team of technical experts and a company with 130 patents to its credit.

Biocon aims to grow its revenue to more than \$1.0 billion over the next decade from an estimated \$126 million in the year to March (2003), for which final results are yet to be released. Mazumdar is also active as a

social worker in public-private partnerships to boost the creaking infrastructure of India's technology capital.

Thanks to her Irish connection, Mazumdar's office in Biocon's 80-acre campus on Bangalore's outskirts doubles as the city's Irish consulate. She works with her Scottish husband, who quit his job as a financial expert in a textile company to become Biocon's vice-chairman. "Art brought us together," says Mazumdar. The couple have a collection of 250 paintings, four of them by a famed Indian artist.

(T.N.I.E)



“OUR FUTURE DEPENDS ON AGRICULTURE”

M.S.Swaminathan

Only three Indians find a place in TIME magazine's 20 most influential Asians of the 20th century.

Professor M.S.Swaminathan is one of them. The other two being Mahatma Gandhi and Rabindranath Tagore. A plant geneticist by training, Professor Swaminathan is considered the architect of the Green Revolution. His advocacy of sustainable agriculture leading to an ever-green revolution makes him an acknowledged

world leader in the field of sustainable food security.

Professor Swaminathan has won many awards including the Ramon Magsaysay Award for Community Leadership in 1971, the Albert Einstein World Science Award in 1986, and the first World Food Prize in 1987. Recently, the Union government appointed him as the head of the National Commission on Farmers.



Dr.B.R.Ambedkar (1891-1956)

Indian Jusist, social worker, Politician, Writer, educationist, Emancipator of the downtrodden, fighter for social justice. He framed the Indian constitution. He was minister in the Indian Cabinet. *Bharat Ratna* – 1990.

PROF. M.S.SWAMINATHAN

Prof. M S Swaminathan has been acclaimed by TIME magazine as one of the twenty most influential Asians of the 20th century and one of the only three from India, the other two being Mahatma Gandhi and Rabindranath Tagore. He has been described by the United Nations Environment Programme as “the Father of Economic Ecology” and by Javier Perez de Cuellar, Secretary General of the United Nations, as “a living legend who will go into the annals of history as a world scientist of rare distinction”. He was Chairman of the UN Science Advisory Committee set up in 1980 to take follow-up action on the Vienna Plan of Action. He has also served as Independent Chairman of the FAO Council and President of the International Union for the Conservation of Nature and Natural Resources.

A plant geneticist by training, Prof. Swaminathan’s contributions to the agricultural renaissance of India have led to his being widely referred to as the scientific leader of the green revolution movement. His advocacy of sustainable agriculture leading to an ever-green revolution makes him an acknowledged world leader in the field of sustainable food security. The International Association of Women and Development conferred on him the first international award for significant contributions to promoting the knowledge, skill, and technological empowerment of women in agriculture and for his pioneering role in mainstreaming gender considerations in agriculture and rural development. Prof. Swaminathan was awarded the Ramon Magsaysay Award for

Community Leadership in 1971, the Albert Einstein World Science Award in 1986, the first World Food Prize in 1987, Volvo Environment Prize in 1999, and the Franklin D Roosevelt Four Freedoms Award in 2000.

Prof. Swaminathan is a Fellow of many of the leading scientific academies of India and the world, including the Royal Society of London and the US National Academy of Sciences. He has received 43 honorary doctorate degrees from universities around the world. Recently, he has been elected as the President of Pugwash Conferences on Science and World Affairs. He currently holds the UNESCO Chair in Ecotechnology at the M S Swaminathan Research Foundation in Chennai (Madras), India

M. S. Swaminathan Research Foundation (MSSRF) was registered in 1988 as a non-profit Trust. The basic mandate of MSSRF is to impart a pro-nature, pro-poor and pro-women orientation to a job-led economic growth strategy in rural areas through harnessing science and technology for environmentally sustainable and socially equitable development.

MSSRF is doing research in the following five areas: Coastal Systems Research, Biodiversity and Biotechnology, Ecotechnology and Sustainable Agriculture, Reaching the Unreached, and Education, Communication, Training and Capacity Building.

The Foundation operates through the following pathways to agricultural and rural

development: conservation and enhancement of natural resources, promotion of sustainable livelihoods, gender equity and voicing the voiceless as well as information and skill empowerment. Through the Hindu Media Resource Centre the Foundation

promotes public understanding of science through media practitioners.

The Foundation is known for its emphasis on bottom-up participatory approach, which places people before technology.

(From the Web Site)



Father of India's green revolution **M.S.Swaminathan** was instrumental in making India a net exporter of food grains. In the sixties the question in everybody's mind was how would India feed its growing population. Several dark prophecies were made and the Malthusian viewpoint was strong. In China, some 30 million people had starved to death. In 1964 Swaminathan developed and introduced high-yielding varieties of food-grains, ushering in the green revolution, and this was to become the most dramatic success story of modern India. Having returned to India after refusing a job abroad, he set up 2,000 model farms near Delhi to show what the new seeds were capable of. He got the support of the political leadership as food dependence was seen as a political weapon. In just a few years, India's food grain production doubled from 12 million tonnes to 23 million tonnes; today food grain production is above 220million tonnes. In retrospect, we can say that it was this single achievement that has made India self-reliant.

Swaminathan set up several institutes, including the International Crop Research Institute for Semi-Arid Tropics and the International Federation of Agricultural Research Systems for Development. He won the World Food prize in 1987, the UNEP Sasakawa Award in 1994 and has also been honoured with the Magsaysay award.

KUMAR MANGALAM BIRLA

Prized Scion

When **Kumar Mangalam Birla** stepped into his father Aditya Birla's legendary shoes in 1995, he was 28. everybody wondered how he would cope, how he would run the 60 year-old-group. In the eight years he has been at the helm, the turnover of the group has jumped from Rs.7,200 crore to Rs.27,000 crore. "One thing my father used to always say was you should have a view of the long term and no short cuts," he said in an interview to a business magazine. Birla remains unassuming and is known in the

corporate circles for his humility although he is estimated to be worth \$3.2 billion. Today he has transformed the culture of the Birla group and has steered it to new levels. In late 1997, he decided that the group executives would compulsorily retire at 60 years—something unheard of before in the group. He got the group to enter high-potential sectors such as software, insurance and branded apparels. Despite sitting on wealth, Birla is not the sort to flaunt his money. A non-smoker and a teetotaler, his only passion is paintings. He is ranked 147th in the Forbes list.



(TNSE)

THE BUSINESS ETHIC OF J.R.D. TATA

R.M.Lala

In the public mind, ethics in business is mainly identified with financial integrity. Important as that is, the real meaning of ethics goes beyond that. The dictionary defines it as “the science of morals in human conduct, a moral principle or code.” It encompasses the entire spectrum of human conduct. Business ethics lays down how a person in businesses deals with his or her colleagues, staff and workers, shareholders, customers, the community, the government, the environment and even the nation at large.

J.R.D. Tata was meticulous when it came to financial ethics. When I pointed out to him in 1979 that the Tatas had not expanded as much in the 1960s and 1970s as some other groups had, he replied: “I have often thought about that. If we had done some of the things that some other groups have done, we would have been twice as big as we are today. But we didn’t, and I would not have it any other way.”

The well-known tax consultant, Dinesh Vyas, says that JRD never entered into a debate over ‘tax avoidance,’ which was permissible, and ‘tax evasion,’ which was illegal; has sole moto was ‘tax compliance.’ On one occasion a senior executive of a Tata company tried to save on taxes. Before putting up that case, the chairman of the company took him to JRD. Mr.Vyas explained to JRD: “But sir, it is not illegal.” JRD asked, softly: “Not illegal, yes. But is it right?” Mr.Vyas says that during his decades of professional work no one had ever asked him that question. Mr.Vyas later wrote in an article: “JRD would have been the most ardent supporter of the view expressed by Lord Denning: “The avoidance of tax may be lawful, but it is not yet a virtue.”

Attitude to colleagues

When he rang us in the office he would first ask: “Can you speak?” or “Do you have someone with you?” or “Except when he was

Vikram Sarabhai had varied interests and was involved in many things—business, management institutes and space research. Born into a business family, he started many companies bearing the Sarabhai name. In 1962 he helped found the Indian Institute of Management, Ahmedabad. He was to give up the life of an Industrialist for his first love, space research. In 1993 he was inducted into the International Space Hall of Fame, a crater on the moon has been named after him by the International Astronomical Union. He was Chairman of the Indian Atomic energy Commission as Homi Bhabha’s successor and was President of the 14th General Conference of the International Atomic energy Agency in Vienna in 1970. He laid the foundation of space and nuclear research and made it capable of withstanding various sanctions by the developed world. The low-cost infrastructure for launching of satellites that exists today is also because of Sarabhai.

agitated, he would never ask you: “Can you come up?” He was always polite.

JRD’s strong point was his intense interest in people and his desire to make them happy. Towards the end of his life he often said: “We don’t smile enough.” When I was writing *The Creation of Wealth*, he told me about his dealings with his colleagues: “With each man I have my own way. I am one who will make full allowance for a man’s character and idiosyncrasies. You have to adapt yourself to their ways and deal accordingly and draw out the best in each man. At times it involves suppressing yourself. It is painful but necessary... To be a leader you have got to lead human beings with affection.”

It is a measure of his affection that even after some of them retired he would write to them. He was always grateful and loyal. To him, ethics included gratitude, loyalty and affection. It came about because he thought not only of business but also of people.

In dealing with his workers he was particularly influenced by Jamshedji Tata, who at the height of capitalist exploitation in the 1880s and the 1890s gave his workers accident insurance and a pension fund, adequate ventilation at the workplace and other benefits. He wanted workers to have a say in their own welfare and safety, and he

wanted their suggestions on the running of the company. A note that he wrote on personnel policy resulted in the founding of a personnel department. As a further consequence of that note came about two pioneering strokes by Tata Steel: a profit sharing bonus and a joint consultative council. Tata Steel has enjoyed peace between management and labour for 70 years.

Beyond business

Decades later, Tata Steel workers had received several benefits. Then JRD looked further.

In a speech in Madras in 1969 he called on the managements of industries located in rural or semi-urban areas to think of their less fortunate neighbours in the surroundings region. “Let industry established in the countryside ‘adopt’ the villages in its neighbourhood; let some of the time of its manager, its engineers, doctors and skilled specialists be spared to help and advise the people of the villages and to supervise new developments undertaken by cooperative effort between them and the company.”

To put JRD’s ideas into action, the Articles of Association of leading Tata companies were amended and social obligations beyond the welfare of employees was accepted as

India’s nuclear status owes much to **Homi Bhabha**. Trained by C.V.Raman at the Indian Institute of Science, he was to become director of the Tata Institute of Fundamental Research in 1940 and Chairman of the newly formed Atomic energy Commission in 1948. He had the unstinted support of Nehru. He was President of the UN Conference on Peaceful uses of Atomic Energy. India’s nuclear policy has been shaped by Bhabha. It was the foundation laid by him that has resulted in India developing its nuclear capability today.

part of the group's objectives. In the 19th century. Baron Edward Thurlow, the poet asked: "Did you ever expect a corporation to have a conscience?" The answer from J.R.D. Tata was: 'Yes'.

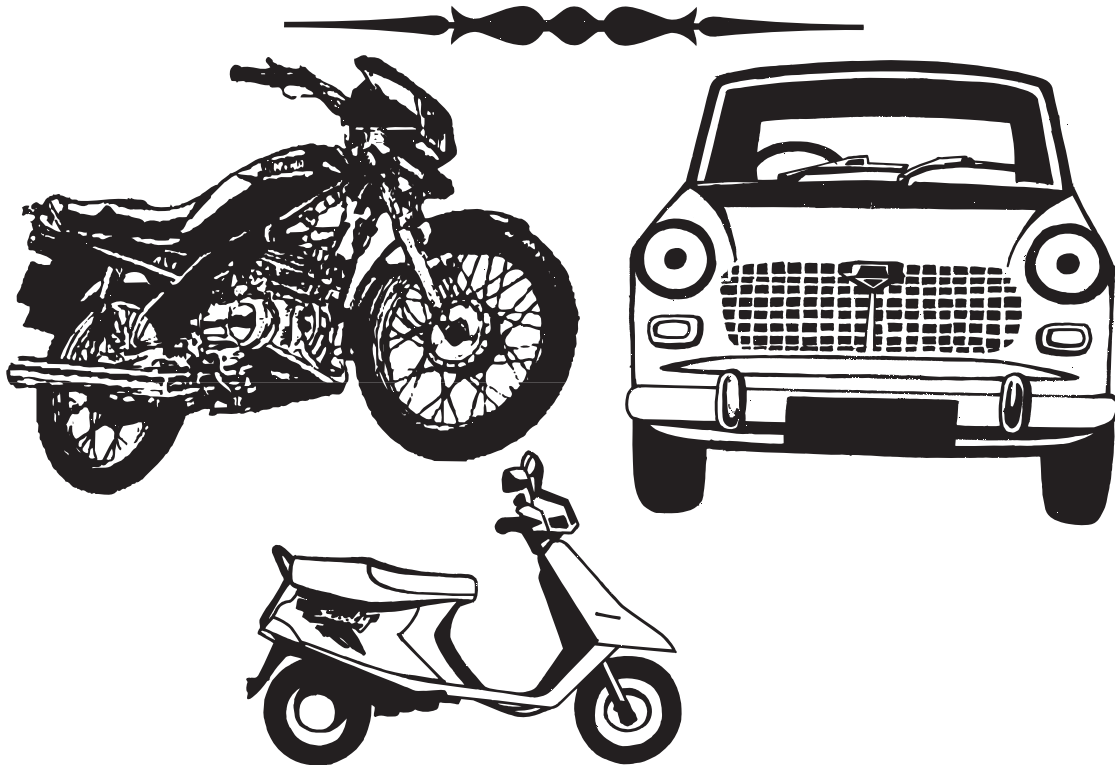
Whenever he could, he raised his voice against state capitalism. He never bent the system for his benefit. L.K. Jha recalled in 1986 that whenever JRD came to him when he was a Government Secretary, he came not on behalf of a company but the whole industry. He wanted no favours, only fairness. In his last years he was very conscious of the environment and industry's part in spoiling it. He wrote in his Foreword to *The Creation of Wealth* in 1992: "I believe that the social responsibilities of our industrial enterprises should now extend, even beyond serving people, to the environment."

The J.R.D. Tata Centre for Ecotechnology at the M.S. Swaminathan Research Foundation was created in furtherance of his desire.

To him India was not a geographical expression; it was people. When he was awarded the Bharat Ratna in 1992, Tata employees arranged a function on the lawns of the National Centre for Performing Arts in Mumbai. A gentle breeze was blowing from the Arabian Sea. When JRD rose to speak, he said: "An American economist has predicted that in the next century India will be an economic superpower. I don't want India to be an economic superpower. I want India to be a happy country."

This was not only his hope, it was also his life. He brought sunshine into the lives of many of us who knew him.

(Russi Lala is the author of "Beyond the Last Blue Mountain: A Life of JRD")



G.D.BIRLA-MASTER SCULPTOR

D.P.Mandelia

Shri G.D.Birla was a visionary. He always thought of the future. He remained always a great student of our culture and philosophy. Although he was a Hindu by birth, he revered every other religion as he thought that the basic tenets of all religions were the same. He was a man of character.

His wife died when he was only in his thirties, but he decided to lead the life of a celibate till his last breath.

In 1942 when the Quit India Resolution was passed, Mahatma Gandhi with all his associates was staying with Birlaji in Bombay. He and his elder brother, Rameshwardasji were the hosts. One fine morning Gandhiji decided that nothing would help the freedom movement than the "Quit India" Resolution. As he was staying with a big industrialist having great stakes under the British rule, Gandhiji did not want to embarrass his hosts. He, therefore, decided to shift to the Congress Office in Bombay. When Rameshwardasji and Ghanshyamdasji heard of this, they were shocked, and felt insulted. They approached Gandhiji humbly and told him that he would be doing injustice to them if, for fear of their bearing the anger of the British Empire, he shifted to the Congress Office and passed the resolution there. "God willing, we will be able to weather the storm, if it comes, and we would request you to stay on here and pass the resolution," they said.

The resolution was ultimately passed in the Birla House and it was from there that the British police took Gandhiji and his associates at midnight to the Yeravada Jail in Pune. That shows the principles to which Birlaji attached the greatest value and to which he adhered till the very last moment of his life

I would compare Birlaji to a superb master-sculptor. Birlaji did not sculpt inanimate objects but animate subjects—young men. Whenever he chose persons to take charge of his industries, charitable institutions, educational institutes or any other projects that he thought worthwhile undertaking, he would not care to go in for an experienced man, as ordinary men do; he would go and look for a novice, a young man. But not any young man—not any novice just picked up from the street. No, he would first look to his heredity.

Birlaji never left for the morrow anything that could be done today. This was the key to his success. Birlaji wanted India to become independent and strong and for that purpose started industries. Not only conventional industries, basic industries, new industries, but he wanted to improve the agricultural produce quantity-wise and quality-wise. He introduced new vegetables, new fruits. He even started an Agricultural Farm and a Dairy at Pilani.

(The Bhavan's Journal 31-8-2004)



SECTION - 3

Shining Institutions National Treasures

Each soul is potentially divine. The goal is to manifest this Divinity within, by controlling nature, external and internal. Do this either by work, or worship, or psychic control, or philosophy — by one or more or all of these — and be free. This is the whole of religion. Doctrines, or dogmas, or rituals, or books, or temples, or forms, are but secondary details.

Sitting in luxurious homes, surround with all the comforts of life, and doling out a little amateur religion may be good for other lands, but India has a truer instinct. It intuitively detects the mask. You must give up. Be great. No great work can be done without sacrifice.....

Swami Vivekananda





Thus spake Swami Vivekananda

This is the time to decide your future - while you possess the energy of youth, not when you are worn out and jaded, but in the freshness and vigour of youth. Work - this is the time; for the freshest, the untouched and unsmelled flowers alone are to be laid at the feet of the Lord and such He receives. Rouse yourselves, therefore, for life is short. There are greater works to be done than aspiring to become lawyers and picking quarrels and such things. A far greater work is this sacrifice of yourselves for the benefit of your race, for the welfare of humanity. What is in this life?

BHILAI STEEL JOINS LONG RAIL CLUB

N.N.Sachitanand

The Indian Railways, which operates the second largest railway network in the world under one management, with nearly 109,000 km of rail tracks, will soon be taking one step closer to being able to run high speed trains such as those in Japan and France. This is because its sole supplier of rails, the Bhilai Steel Plant (BSP) of the Steel Authority of India Ltd., has recently joined a select group of rail manufacturers in the world who can roll long rails of up to 80 metres in length. Such long rails, when welded together, form the tracks on which high speed trains can glide smoothly.

In the post-Independence period, rail track length and route distances in India have grown by 33 per cent and 17 per cent respectively, but passenger traffic has snowballed by 550 per cent and freight by 600 per cent. To cope with this surge in traffic, the Railways have taken up several projects to enhance transit speed, axle load and safety. One of these is the upgradation of rail tracks.

The BSP commenced manufacture of rails in 1960 and has since then supplied over 11 million tonnes of rails to the Indian Railways. It has been fulfilling the ever-changing needs of the Railways by producing first 45 kg, then 52 kg and now 60 kg class of rails with strength from 72 UTS to the present 90 UTS. Today the 90 UTS 60 kg rails supplied by

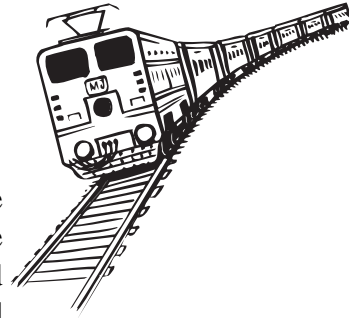
Bhilai to the Railways are the same rails as used by the advanced

countries for the most demanding traffic conditions.

This has been made possible by the continuous enhancement in the quality of steel and rolling practices. One of the most common reasons of rail failure in service is fatigue cracking caused by hydrogen embrittlement. Thanks to the installation of the latest secondary refining facilities of molten steel, before it goes for rail making, the BSP is able to produce the world's cleanest rail steel with less than 2 ppm (parts per million) of hydrogen. So far, Bhilai's Rail and Structural Mill was able to deliver rails in maximum lengths of 26 metres only. Work on the Long Rail Project, costing about Rs.400 crores, started in 2002 and the first 80 metre rail was commercially rolled and finished in April 2004. In the next few months, with the installation of special welding facilities, the BSP will be able to deliver rolled rails up to 80 metres in R52 and 65 metres in R60 category and welded panels of 240 metres in R52 and 260 metres in R60 category.

The BSP will be the world's second rail making facility after VAI, Austria, to have a unique yard mapping system for automatic storage and loading of long rails.

(The Hindu)



Indian BPO companies are expected to corner business to the tune of \$800 million from the US healthcare market by 2005.

STEEL AUTHORITY OF INDIA

Business Summary

Incorporated in 1973, the Steel Authority of India (SAIL) is a giant among the steel majors in India. It is the largest steel conglomerate in the country and the world's ninth-largest steelmaker. It manages and operates five integrated steel plants at Bhilai, Madhya Pradesh; Bokaro, Bihar; Durgapur, West Bengal; Rourkela, Orissa; and Burnpur, West Bengal. It also has four units for special and alloy steels and ferro alloys at Durgapur, West Bengal; Salem, Tamilnadu; Chandrapur, Maharashtra; and Bhadravati, Karnataka. SAIL operates nine iron ore, five limestone, three dolomite and three coal mines besides generating 700 MW of captive power. The Central Marketing Organisation, with its headquarters at Calcutta, monitors its domestic market through an expanding network of stockyards, dockyards, branch sales offices and consignment agents while the International Trade Division looks after its export of world-class steel to as many as 70 countries across the globe, by establishing close liaison with buyers abroad. The company is the only producer of extra-wide



(up to 3200 mm) and heavy plates, catering to the needs of the construction, automobile, shipbuilding, engineering and other sectors. SAIL's plants and units have received ISO 9002/1 certifications and are well-equipped with the state-of-the-art technology to meet advanced needs and applications. ISO 9002-certified stainless steel is exported to several developed countries. The Govt of India has

approved the Financial and Business Restructuring of SAIL involving waiving of loans advanced to it from Steel Dvpt Fund to a value of Rs.5073 cr and Rs.381 cr from

Govt of India; Provision of Govt guarantees with 50% interest subsidy for loan and interest thereon on Rs.1500 cr to be raised by SAIL from the market to finance reduction in manpower through voluntary retirement scheme; Provision of Govt guarantee for loan and interest thereon of Rs.1500 cr (incl.Rs.500 cr already agreed) to be raised by SAIL from the market primarily for meeting repayment obligation on past loans during 1999-2000. To initiate the process of divestment of the following non-core assets into a joint venture with protecting jobs of the existing employees

Two prominent non-resident Indians—Arun Sarin and Lakshmi Mittal—figure among the 25 most powerful people in Business in Europe, according to the Forbes magazine.

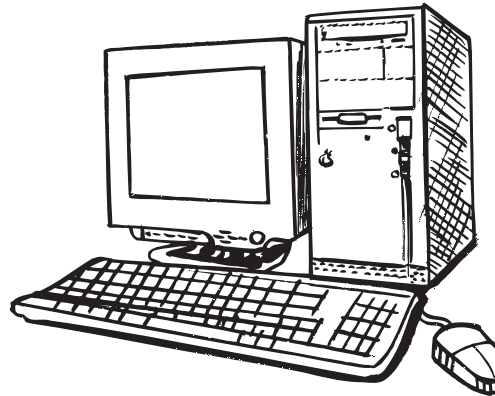
venture agreement with Tata Iron & Steel and Kalyani Steel for the creation of a company to manage their steel e-marketplace, metaljunction.com. The company tied-up with the National Building Construction Corporation (NBCC) for formation of a consortium to help reconstruction activity in quake-hit Gujarat. The combine will initially concentrate on building low-cost, quake-hit and cyclone-resistant dwelling units suitable for rural Gujarat. The company has completed the

Modernisation Programme at Bhilai Steel Plant and also the Upgradation of Durgapur Steel Plant has also been completed during 2001-02. At Bokaro Steel Plant the equipment work is in progress and the Furnace was commissioned in 2002-03. The company incurred a capital expenditure of Rs.241 crores. The Company has entered into an agreement with Corus Consulting Ltd UK for Long Rail facility and the UK company will provide a technical back up support for SAIL.

(From the Web Site)

INFOSYS IN \$1 b CLUB, RECOMMENDS 3:1 BONUS

IT bell-wether, Infosys Technologies, the Bangalore headquartered IT services company, announced on Tuesday (13/04/04) that it had earned revenues of over a billion dollars for the year ended March 31, 2004. This year, a firmer rupee was still a cause for concern, but prices would hold and the company would grow revenues by 24 per cent, senior Infosys executives told reporters at Bangalore.



large outsourcing deals in the BPO sector could be 'on hold,' K.Gopalakrishnan, Infosys' chief operating officer said.

On the billion-dollar revenues, an ebullient Chairman and Chief Mentor, N.R.Narayana Murthy, termed it "a historical milestone". Nandan M.Nilekani, CEO, President and Managing Director, said, "We have grown from \$121 million in

Infosys Plans include higher investments in subsidiaries in China, Australia, the BPO arm **Projeon** and in a new consulting firm, Infosys Consulting, in the U.S. More investments were also planned in improving Infosys' banking product, Finacle. However,

1999 to a consolidated revenue of \$1.06 billion in 2004. Today, we have the required size, brand, compelling value proposition and ambition to build the next generation software services and consulting company."

The technology of the Leh Berry drink comes from the Defence Research and Development Organisation's field Research Laboratory in Leh, thereby making it the world's highest life science laboratory. Leh Berry is an innovative fruit nector extracted from a Himalayan Shrub Seabuckthorn.

AT INFOSYS, THEY DON'T REINVENT THE WHEEL

B.M.Thanuja

Most knowledge management (KM) literature shows that a company should constantly invest in managing, as well as renewing its intellectual capital on an institutionalised basis. This is especially true of companies in software sector, which has a high knowledge component and evolves in a fast-paced globalised economy.

Bangalore-based IT major Infosys has been one of the pioneers when it comes to knowledge management. During late 1999, when the company was on a particularly aggressive growth path, the seeds of a formal, organisation wide, integrated KM initiative were sown. The initiative is now driven by a steering committee consisting of the key heads plus members of the board of directors, with a formal budget process.

One of the key initiatives under KM was the establishment of the Infosys Knowledge portal, "At Infosys, the focus has been on the culture and incentivisation of knowledge sharing, attention to the currency of information and ensuring its utility. The basic idea is that if something has been done already, that knowledge should be shared with the other employees. The process should not be repeated," M.P.Ravindra, vice president and head-education and research says.

"We started this initiative in 1999 and since then there has been fantastic progress. We take in almost 7,000 freshers every year. So the information stored helps a lot as these

newcomers don't have to go through a trial method. They can just log on to the internal KM portal and get the information they want," he adds.

Most companies put technology first, believing that if technology is in place, then everything will be fine. "The environment should be conducive and non-threatening for people to share knowledge. Infact, around 45 percent of our Infosys community are part of the KM initiative now and we expect it to grow fast. This is completely voluntary," Ravindra says.

The knowledge management portal provides the technology infrastructure for the KM initiative. Built on a platform of Microsoft suite of servers, the homegrown knowledge portal has an impressive array of features that facilitate the user in knowledge sharing and reuse. There were nearly 2400 knowledge areas in the Infosys-proprietary knowledge taxonomy, arranged in a simple and intuitive 4-level hierarchical structure which includes case studies, project snapshots, FAQs, experiential write-ups, tutorials, publications/white papers, etc.

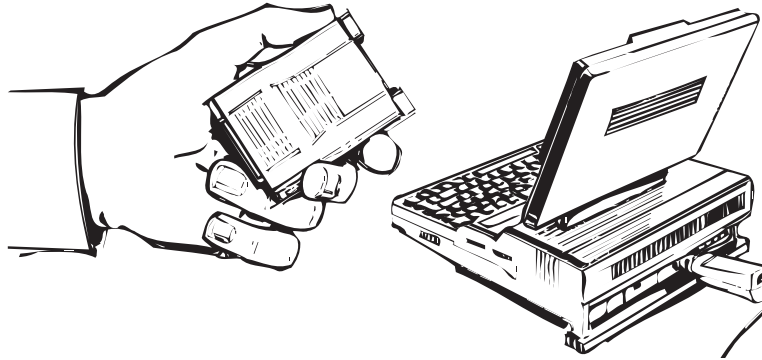
"The knowledge thus generated is even delivered to clientfacing Infoscions and those outside the corporate intranet through appropriate delivery channels," Ravindra says. The company's KM initiative has made it the first Indian company to win the Global MAKE (Most Admired Knowledge Enterprises) award for 2003. (TNIE)

LITTLE KNOWN FACTS ABOUT BEST KNOWN TCS

Romme Rodrigues

Their recall value will tell you that Tata Consultancy Services (TCS) is one of the largest software development and services companies in the world. However, there is another facet to their commercial line of business, perhaps not known to many.

The company is also the pioneers in developing and implementing computer-based programmes, which help in educating illiterate adults. The company provides this software and in some cases the hardware absolutely free to literacy endeavours taken up by NGOs and government agencies. Atul Takle, vice president (communication) of TCS said, "The software we have created is a object-oriented visual recognition software, called computer based functional literacy programme (CBFL), which uses the objects and sounds as implements to teach a language. This helps the illiterate person to actually understand and learn the language. Through this aid we have seen that a completely illiterate person can start reading a newspaper in about 45 days". The CBFL model is presently offered



in six Indian languages including Tamil, Telugu, Bengali, Hindi, Marathi and Gujarati.

According to Takle, TCS has been working on the CBFL programme with several NGOs spread across 1000 literacy centres in India, and so far has helped over 20,000 illiterates between the ages of 18-50 years who have

missed formal schooling but speak some dialect of the language.

"In India we conducted extensive trials in tandem with

the State literacy mission in Andhra Pradesh, and have been working with various other NGOs involved in this areas", he said.

TCS is now planning to aggressively implement this programme in South Africa. The company has been working with local linguists and NGOs for a few months now assisting them in mapping the sounds and developing a script for one South African language, viz. Northern Sotho, spoken by one of the Zulu tribes. South Africa has 11 official languages including Afrikaans, English, isiNdebele, isiXhosa,

The Tata Power Trading Company Ltd (TPTCL) has been awarded the first-ever power trading licence in India, by the Central Electricity Regulatory Commission (CERC).

isiZulu, Spepedi, Sotho, Setswana, Siswati, Tshivenda and Xitsonga, besides several dialects. Many of these dialects do not have their own script and therefore use the Roman Script.

Takle said, "We have been working with various agencies in South Africa in adult literacy programme for some time now, and have completely adapted the software to the

local language. The programme will now be implemented and we expect that it will spread throughout the region in the next few years". As part of its social commitment, the company also provides the hardware in terms of computers and other peripherals required to run and use the software, where it spends a substantial amount. Takle, however, did not want to reveal any figures.

NO.1 WEALTH CREATOR IN THE MAKING

T.Bhanu

TCS is Asia's largest exporter of IT services and India's first IT services company to post revenues in excess of US \$1 billion, and is rated as the number one IT Services Company in India in terms of revenue and profits. Now, with the inclusion of TCS, the Tata Group market capitalization would jump from a level of Rs.57,664 crore to some Rs.98,375 crore and before long achieve the nice, round, magic figure of Rs.100,000 crore.

As it is, even among individual private sector companies, TCS would be just behind Reliance Industries' market capitalization of Rs.75,132 crore with its market capitalization figure of Rs.40,611 crore, ahead of Bharti Tele-Ventures (Rs.28,662

crore), Tata Motors (Rs.11,866 crore) and Reliance Engg. (Rs.13,431 crore).

Analysts believe that by 2005-06, "TCS could well get past Reliance Industries to take the No.1 wealth creator position among all individual companies." To back their optimism, analysts point out that with the company's vision to become a 'global ten by 2010', both turnover and profits would rise sharply as was witnessed in 2004 and secondly Tata Group which holds nearly 85 percent of the stock is not known to offload its scrips in the market. "Like Wipro, TCS too in the medium term attracts a price earning multiple of 40 plus," analysts feel. Expect a lot of action when the share gets listed on the bourses.

[T.N.I.E.]

70,000 units of notebook computers were sold in our country last year.

IOC, SBI TOP INDIAN PACK IN FORBES

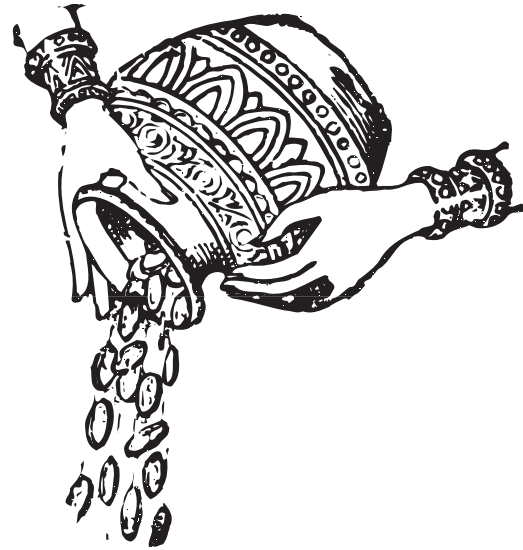
Twenty-seven Indian companies have made it to Forbes magazine's list of 2000 top firms worldwide with their ranking based on composite sales, profits, assets and market value.

The Indian pack is led by Indian Oil Corporation followed by State Bank of India and is dominated by banking, oil and gas industries. Among the Indian companies making it to the list are ten banking organizations, five oil and gas industries, two telecommunications firms and two software giants, Infosys and Wipro.

Indian Oil is ranked 243 and Oriental Bank of Commerce just about makes it, getting the last position—2000. The number of Indian firms making to the list is up from last year's 20.



Besides State Bank of India, which is ranked 251, the Indian banking group making it to the list include ICICI Bank (820), Canara Bank (1271), Punjab National Bank (1286), Bank of India (1344), Bank of Baroda (1358), Industrial Development Bank of India (1555), Union Bank of India (1642) and Indian Overseas Bank (1984). The companies dealing with oil

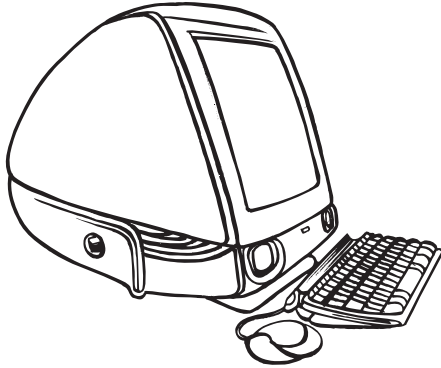


and gas are led by Indian Oil Corporation, followed by Oil and Natural Gas Corporation (273), Reliance industries (303), Bharat Petroleum Corporation (804) and Hindustan Petroleum Corporation (856). Among telecommunication companies, Mahanagar Telephone Nigam is placed at 1922nd position followed by Bharti Tele Ventures at 1983. Software company Infosys Technologies, is ranked 1320 just above Wipro whose position is 1343.

GAIL (India) is ranked 1238 and ITC gets a rank of 1311.

The Steel Authority of India is placed at 1393 position much above Tata Iron and Steel Company, which is ranked at 1530. Among others, HDFC gets 1380th ranking, Ranbaxy Lab 1621, Neyveli Lignite Corporation 1975 and Hindalco Industries 1998. Of the four parameters set by *Forbes*, IOC leads in sales (\$25.26 billion), SBI in assets (\$104.80 billion) and ONGC in profits (\$2.20 billion) and market value (\$23.26 billion)

Reliance Industries had made two new gas discoveries of its D-6 block, the site of the world's largest gas find of 2002, in the Bay of Bengal.



WIPRO FOLLOWS RIVAL INFY INTO BILLION- DOLLAR CLUB

Three days after rival IT firm Infosys crossed the \$1 billion-in-revenue landmark, Wipro Ltd too has followed suit, bringing a lot of cheer to the industry (on 16/04/2004).

The company has registered a total revenue of Rs.5,881 crore for fiscal 2004, an increase of 36 percent year-on-year. Its global IT services and projects revenue was Rs.4,358 crore, an increase of 43 percent over last

year, thus taking the company's IT global services business revenues past the \$1 billion mark.

The IT giant surpassed market expectations with a total profit after tax of Rs.1,032 crore, a jump of 26 percent over last fiscal, while profit before interest and tax (PBIT) in global IT services and products was Rs.954 crore, an increase of 14 percent year-on-year.



RELIANCE STRIKES GAS OFF ORISSA COAST

Ramnath Subbu

In a significant development in oil and gas exploration, Reliance Industries has struck gas off the Orissa Coast in the Bay of Bengal in the exploration block NECOSN-97/2.

which indicate an in-place volume of about 4-5 trillion cubic feet. We will, however, declare the value only after we have a certificate". The Reliance authorities claimed.

"We have made an initial estimate of the potential from seismic and other studies,

Sundaram-Clayton won the Demining award for quality, a coveted honour. Last year four Indian companies, Rane Brakes, Brakes India, Mahindra and Mahindra and Sona Koya landed this award.

The number of Indian companies operating in the United Arab emirates has crossed the 10,000 mark.



AMUL - THE PRICELESS

The mighty Ganges at its origin is but a tiny stream in the Gangotri ranges of the Himalayas. Similar is the story of Amul which inspired 'Operation Flood' and heralded the 'White Revolution' in India. It began with two village cooperatives and 250 liters of milk per day, nothing but a trickle compared to the flood it has become today. Today Amul collects, processes and distributes over a million liters of milk and milk products per day, during the peak, on behalf of more than a thousand village cooperatives owned by half a million farmer members. Further, as Ganga-ma carries the aspirations of generations for moksha, Amul too has become a symbol of the aspirations of millions of farmers. Creating a pattern of liberation and self-reliance for every farmer to follow.

The revolution started as an awareness among the farmers that grew and matured into a protest movement and the determination to liberate themselves. Over four decades ago, the life of a farmer in Kaira District was very much like that of his counterpart anywhere else in India. His income was derived almost entirely from seasonal crops. The income from milch buffaloes was undependable. The marketing and distribution system for the milk was controlled by private traders and middlemen. As milk is perishable, farmers were compelled to sell it for whatever they were offered. Often, they had to sell cream and ghee at throwaway prices. In this situation, the one who gained was the private trader. Gradually, the realisation dawned on the farmers that the exploitation by the trader could be checked only if marketed their milk themselves. In order to do that they needed to form some sort of an

organisation. This realisation is what led to the establishment of the Kaira District Cooperative Milk Producers' Union



Limited (popularly known as Amul) which was formally registered on December 14, 1946.

The Kaira Union began pasteurising milk of for Bombay Milk Scheme in June 1948. An assured market proved a great incentive to the milk producers of the districts. By the end of 1948, more than 400 farmers joined in more village societies, and the quantity of milk handled by one Union increased from 250 to 5,000 liters per day.

Obstacles: Springboards for success.

Each failure, each obstacle, each stumbling block can be turned into a success story. In the early years, Amul had to face a number of problems. With every problem came opportunity. A chance to turn a negative into a positive. Milk by-products and supplementary yield which suffered from the same lack of marketing and distribution facilities became encumbrances. Instead of being bogged down by their fate, they were used as stepping-stones for expansion. Backward integration of the process led the cooperatives to advances in animal husbandry and veterinary practice.

Milk by-products: An excuse to expand.

The response to these provided stimulus for further growth. For example, as the movement spread in the district, it was found that the Bombay Milk Scheme could not absorb the extra milk collected by the Kaira

Union in winter, when the production on an average was 2.5 times more than in summer. Thus, even by 1953, the farmer-members had no assured market for the extra milk produced in winter. They were again forced to sell a large surplus at low rates to the middlemen. The remedy was to set up a plant to process milk into products like butter and milk powder. A Rs 5 million plant to manufacture milk powder and butter was completed in 1955. In 1958, the factory was expanded to manufacture sweetened condensed milk. Two years later, a new wing was added for the manufacture of 2500 tonnes of roller-dried baby food and 600 tonnes of cheese per year, the former based on a formula developed with the assistance of Central Food Technological Research Institute (CFTRI), Mysore. It was the first time anywhere in the world that cheese or baby food was made from buffalo milk on a large, commercial scale. Another milestone was the completion of a project to manufacture balanced cattle feed. The plant was donated by OXFAM under the Freedom From Hunger Campaign of the FAO. To meet the requirement of milk powder for the Defense, the Kaira Union was asked by the Government of India in 1963 to setup additional milk drying capacity. A new dairy capable of producing 40 tonnes of milk powder and 20 tonnes of butter a day was speedily completed. It was declared open in 1965. The Mogar Complex where high protein weaning food, chocolate and malted food are being made was another initiative by Amul to ensure that while it fulfilled the social responsibility to meet the demand for liquid milk, its members were not deprived of the benefits to be had from the sale of high value-added products.

Cattle: From stumbling blocks to building blocks. Traditionally dairying was a subsidiary occupation of the farmers of Kaira. However, the contribution to the farmer's income was

not as prominent as his attachment to dairying as a tradition handed down from one generation to the next. The milk yield from animals, which were maintained mainly on the



by products of the farm, was decidedly low. That together with the lack of facilities to market even the little produced rendered the scientific practice of animal husbandry irrational as well as unaffordable. The return on the investment as well as the prospects of being able to market the product looked very bleak. It was a vicious cycle reinforced by generations of beliefs.

The Kaira Union broke the cycle by not only taking upon themselves the responsibility of collecting the marketable surplus of milk but also provided the members with every provision needed to enhance production. Thus the Kaira Union has full-fledged machinery geared to provide animal health care and breeding facilities. As early as late fifties, the Union started making high quality buffalo semen. Through village society workers artificial insemination service was made available to the rural animal population. The Union started its mobile veterinary services to render animal health care at the farmers' doorstep. Probably for the first time in the country, veterinary first aid services, by trained personnel, were made available in the villages. The Union's 16 mobile veterinary dispensaries are manned by fully qualified staff. All the villages are visited bi-monthly, on a predetermined day, to provide animal health care. A 24-hour Emergency Service

is also available at a fee (Rs. 35 for members and Rs. 100 for non-members). All the mobile veterinary vans are equipped with Radio Telephones.

The Union runs a semen production center where it maintains high pedigreed Surti buffalo bulls, Holstein Friesian bulls, Jersey bulls and 50 per cent crossbred bulls. The semen obtained from these bulls is used for artificial breeding of buffaloes and cows belonging to the farmer members of the district. The artificial insemination service has become very popular because it regulates the frequency of calving in cows and buffaloes thus reducing their dry period. Not only that, a balanced feed concentrate is manufactured in the Union's Cattle Feed Plant and sold to the members through the societies at cost price.

Impressive though its growth, the unique feature of the Amul sagas did not lie in the extensive use of modern technology, nor the range of its products, not even the rapid inroads it made into the market for dairy products. The essence of the Amul story lies in the breakthrough it achieved in modernizing the subsistence economy of a sector by organizing the rural producers in the areas.

The Kaira experiment: A new beginning in more ways than one.

A system which involves participation of people on such a large magnitude does not confine itself to an isolated sector. The ripples of its turbulence affect other areas of the society as well. The cooperatives in the villages of Kaira are contributing to various desirable social changes such as:

- The yearly elections of the management committee and its chairman, by the members, are making the participants aware of their

rights and educating them about the democratic process.

- Perpetuating the voluntary mix of the various ethnic and social groups twice-a-day for common causes and mutual betterment has resulted in eroding many social inequilibria. The rich and the poor, the elite and the ordinary come together to cooperate for a common cause.

- Live exposure to various modern technologies and their application in day-to-day life has not only made them aware of these developments but also made it easier for them to adopt these very processes for their own betterment. One might wonder whether the farmer who knows almost everything about impregnating a cow or buffalo, is also equally aware of the process in the humans and works towards planning it.

- More than 900 village cooperatives have created jobs for nearly 5000 people in their own villages — without disturbing the socio-agro-system — and thereby the exodus from the rural areas has been arrested to a great extent.

- The income from milk has contributed to their household economy. Besides, women, who are the major participants, now have a say in the home economy.

Independent studies by various individuals and institutions have shown that as high as 48 per cent of the income of the rural household in Kaira District is being derived from dairying. Since dairying is a subsidiary occupation for the majority of the rural population, this income is helping these people not only to liberate themselves from the stronghold of poverty but also to elevate their social status.

(From the Web Site)

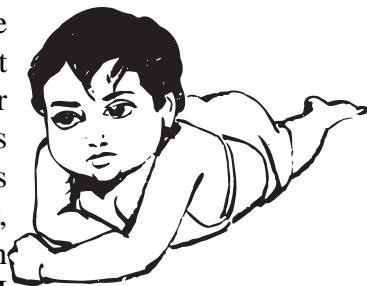
AMUL, ALL OF 40 YEARS

Ramesh Narayan

I read somewhere that Amul completed 40 years as a brand. The mind is filled with images. To me Amul has always been even more than a brand. It has symbolized a movement. Another way to look at it is that Amul the brand symbolizes a movement. A co-operative movement where thousands of villages have gotten together to pool their resources and create wealth for themselves, and for the nation.

Milk was a scarce commodity 40 years back. I distinctly recall the trouble one had to take to get a milk card. This card entitled you to a specified quantity of milk at a particular time from a government run milk booth. Today, half of India's urban population will not even believe this. They have been born and bred in a scenario where several brands of milk jostle with each other for precious shelf space in retail stores.

To a large extent this happy situation is on account of a brand called Amul. And the movement it represents. On the advertising front, Amul has meant several things to me. Firstly there have been some of the finest examples of topical outdoor advertising from Da Cunha's for Amul butter. Sometimes provocative, sometimes funny, always interesting, never with malice. That's the message I



took away from the Amul butter outdoor campaign. Though I do not have first hand information, I also see the hidden hand of a mature client behind the clever copy of a dedicated, thinking advertising agency. Interference by a lesser client would have ruined the entire effort. It is something that most clients can learn from.

Amul chocolates were launched at a time when Cadbury's was a generic name. "A gift for someone you love" was the tagline that positioned the chocolate as a special gift. Interesting packaging added the unique positioning and Amul chocolates clawed its way into an almost monopolistic market scenario.

Amul milk has always had advertising with a fun theme. I believe a great consumer insight has driven this effort. Children seem to go through a phase where they detest milk only because it is very high on the list of compulsion that is trotted out to them by their mom's. "It's good for you" transforms into "it's boring" in the mind of the child. The "Doodh dooh.." film has the lively lilt in its music and the energetic bounce in its action

India's fixed line telecom network is estimated to touch 47 million by March 2005.

that converts milk into a frothy, splashy, fun drink. That it is healthy is just a bonus.

The entire range of milk products from Amul including cheese have been a modern case study. Their abortive foray into pizzas, though intellectually sound could be dismissed as an aberration.

Amul has helped produce a movie "Manthan", The wonderful film that starred

the late Smita Patil was a tribute to the movement and to the communication process as well. Apart from the products, the corporate film that is still showing holds a very special place for me. The music, the words, the 'super' at the end of the film all contribute to make it worthy of the movement itself. All in all, it's been a wonderful four decades of brand building for a wonderful brand. Their agencies can take a collective bow.



TELCO CONSTRUCTION EQUIPMENT COMPANY

Profile

The company manufactures construction equipment that is used in major infrastructure projects in India. It has remained a market leader for the past five years, despite stiff competition. It has revolutionised the Indian construction equipment industry, with the introduction of the V series of hydraulic excavators. The company has an extensive customer base that includes government and institutional buyers, and contractors. The company was the country's first construction equipment manufacturer to receive ISO 9001 certification.

Areas of business

The company has used state-of-the-art technology to manufacture excavators and backhoe loaders. It enjoys a 90 per cent share of the crawler crane market in India. It is the only Indian manufacturer that produces

100 tonne cranes. These are the largest machines made locally. The company was the first to introduce mini-excavators in India, and its brand



EX60, is the most successful machine to be made in India so far, with more than 1,300 machines being sold in the last three years. It is the largest manufacturer of hydraulic excavators in India, with over 6,000 machines in the market. It offers the widest available range of hydraulic excavators, eight models ranging from 2 tonnes to 60 tonnes in size. The company can indigenously design and develop products. The company's revenue in 1998 was Rs. 3.81 billion. It has an average annual growth rate of 21 per cent.

(From the Web Site)



Knitwear exports from Tirupur are expected to touch Rs.10,000 crore by 2007.

AMUL ADS-MAKE YOUR DAYS

AMUL means “priceless” in Sanskrit. The brand name “Amul,” from the Sanskrit “Amoolya,” was suggested by a quality control expert in Anand. Amul products have been in use in millions of homes since 1946. Amul Butter, Amul Milk Powder, Amul Ghee, Amulspray, Amul Cheese, Amul Chocolates, Amul Shrikhand, Amul Ice cream, Nutramul, Amul Milk and Amulya have made Amul a leading food brand in India. Today Amul is a symbol of many things.... Of high-quality products sold at reasonable prices.... Of the genesis of a vast co-operative network.... Of the triumph of indigenous technology.... Of the marketing savvy of a farmers’ organisation.... And of a proven model for dairy development.

50 years after it was first launched, Amul’s sale figures have jumped from 1000 tonnes a year in 1966 to over 25,000 tonnes a year in 1997. No other brand comes even close to it. It was all because a thumb-sized girl climbed on to the hoardings and put a spell on the masses.

Bombay: Summer of 1967. A Charni Road flat. Mrs. Sheela Mane, a 28-year-old housewife is out in the balcony drying clothes. From her second floor flat she can see her neighbours on the road. There are other people too. The crowd seems to be growing larger by the minute. Unable to curb her curiosity Sheela Mane hurries down to see what all the commotion is about. She expects the worst but can see no signs of an accident. It is her four-year-old who draws her attention to the hoarding that has come



up overnight. “It was the first Amul hoarding that was put up in Mumbai,” recalls Sheela Mane. “People loved it. I remember it was our favourite topic of discussion for the next one week! Everywhere we went somehow or the other the campaign always seemed to crop up in our conversation.”

Call her the Friday to Friday star. Round eyed, chubby cheeked, winking at you, from strategically placed hoardings at many traffic lights. She is the Amul moppet everyone loves to love. How often have we stopped, looked, chuckled at the Amul hoarding that casts her sometime as the coy, shy cine star, a bold sensuous actress or simply as herself, dressed in her little polka dotted dress and a red and white bow, holding out her favourite packet of butter.

That October, lamp kiosks and the bus sites of the city were splashed with the moppet on a horse. The baseline simply said, Thoroughbread, Utterly Butterly Delicious

Amul. It was a matter of just a few hours before the daCunha office was ringing with calls. Not just adults, even children were calling up to say how much they had liked the ads. “The response was phenomenal,” recalls Sylvester daCunha. “We knew our campaign was going to be successful.”

For 30 odd years the Utterly Butterly girl has managed to keep her fan following intact. So much so that the ads are now ready to enter the Guinness Book of World Records for being the longest running campaign ever. The ultimate compliment to the butter came when a British company launched a butter and called it Utterly Butterly, last year. India looked forward to Amul’s evocative humour. If the Naxalite movement was the happening thing in Calcutta, Amul would be up there on the hoardings saying, “Bread without Amul Butter, cholbe na cholbe na (won’t do, won’t do). If there was an Indian Airlines strike Amul would be there again saying, Indian Airlines Won’t Fly Without Amul.

There are stories about the butter that people like to relate over cups of tea. “For over 10 years I have been collecting Amul ads. I especially like the ads on the backs of the butter packets,” says Mrs. Sumona Varma. What does she do with these ads? “I have made an album of them to amuse my

grandchildren,” she laughs. “They are almost part of our culture, aren’t they? My grandchildren are already beginning to realise that these ads are not just a source of



amusement. They make them aware of what is happening around them.”

From the Sixties to the Nineties, the Amul, and their ads have come a long way. While most people agree that the Amul ads were at their peak in the Eighties they still maintain that they continue to tease a laughter out of them. Where does Amul’s magic actually lie? Many believe that the charm lies in the catchy lines. That we laugh because the humour is what anybody would enjoy. They don’t pander to your nationality or certain sentiments. It is pure and simple, everyday fun.

2003 Saw Maruti 800 Model production grow by 12% to reach 1,70,000 cars. Maruti Zen, the higher priced vehicle achieved a 3% growth to sell Rs.2864 crores worth cars.

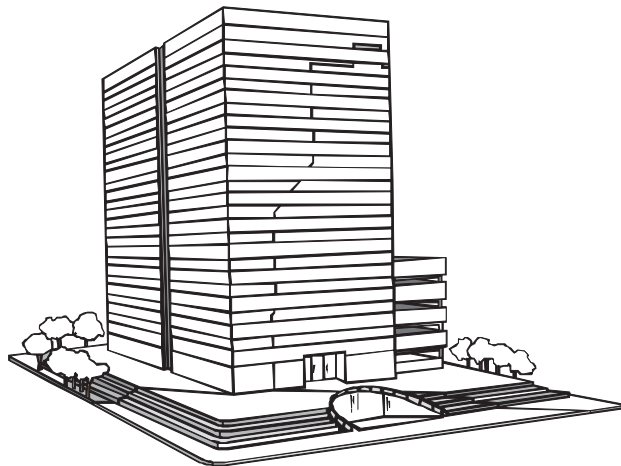
TATA STEEL'S COMMITMENT TO STAY AHEAD IN INDIAN INDUSTRY

Established in 1907 by its founder J.N.Tata, Tata Steel is Asia's first and India's largest integrated private sector steel company. Over the years, Tata Steel has emerged as a thriving steel enterprise due its to ability to transform itself rapidly to meet the challenges of the highly competitive global economy and commitment to become a supplier of choice by delighting its customers with service and products. Constant modernization and the introduction of the state-of-the art technology at Tata Steel has enabled it to stay ahead in the industry and successfully meet the expectations of all sections of the stakeholders. Tata Steel's four phase modernization programme in the steel works has enabled it to acquire the most modern steel making facilities in the world. Recently the company commissioned its 1.2 million tonne capacity Cold Rolling Mill complex at Jamshedpur at global speed and cost. Its fifth phase of modernization programmed leveraged the intellectual capabilities of its employees to generate sustainable value for the stakeholders.

Tata Steel is taking knowledge management initiatives to shift focus from creating new physical assets to utilizing them with ingenuity and a study business sense. The company has been recognized as Asia's Most Admired Knowledge Enterprise at the World Knowledge Forum in Seoul, South Korea.

Most recently it has embarked on a programme for the expansion of its existing steel making capacity by one million tonne to reach a rated capacity of five million tonne per annum.

Tata Steel's turnover in the 02-03 fiscal was nearly Rs.9800 crore. The company's profit in the same financial period was Rs.1012 crore which is the highest that it has ever



achieved. The company also produced a record 3.98 million tonne of saleable steel. And if indications are to be believed, the 03-04 fiscal will produce much better results. With the steel industry passing through a boom, officials of the company believe that the profit margin may increase by more than 25 percent. In the 02-03 financial year, the company also announced a record dividend of 80 percent.

Some Senior business executives stress that outsourcing is nothing but a "natural flow money to a more efficient system".

It should also be mentioned here that Tata Steel's community based initiatives far exceed its business mandate. Its numerous socially responsible activities are aimed at those living in and round its areas of operations, including its mines and collieries. The Community Development and Social Welfare, Rural and Tribal Services, Centre for Family Initiatives and Sports departments run and manage programmes which are designed to improve living conditions of the socially and economically under-privileged. These are self-sustaining programmes and involve the maximum participation by the target groups. Income generation scheme for the women, farmers, and youth, providing safe drinking water in the rural areas, health clinics, drugs, alcohol and HIV/AIDS awareness programmes, youth involvement in sports and cultural pursuits are some of the significant activities undertaken by the company.

Tata Steel has also been conferred with the Global Business Coalition Award for 2003 for Business Excellence in the community for its outstanding contribution in the field of HIV/AIDS awareness campaign. Its civic branch services, the municipal and all other civic services and amenities that are required for the township of Jamshedpur and has been awarded the



ISO 14000 Environment Management System Certificate, the first in the country.

The quest for excellence at Tata Steel is not just a process but a way of life. It was adjudged the Best Integrated Steel Plant by the Ministry of Steel in 2000-01 and was conferred the Prime Minister's Trophy for the third time in a row and fourth overall.

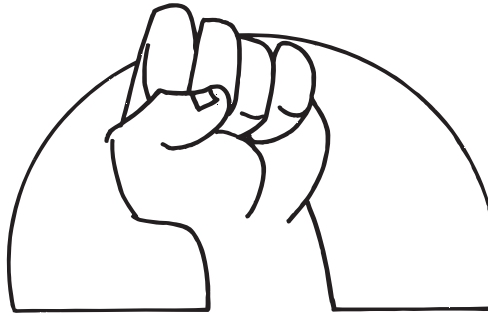
Tata Steel also received the JRD Quality Value Award and Sustained Excellence Award: the Export Engineering Promotion Council Award in 2000-01. The Tata Steel website was declared the best in 2002 by the International Iron and Steel Institute in Belgium. All its divisions including its steel works, mines and collieries have been ISO 14001 certifies for environment management. This certification is a reaffirmation of Tata Steel's belief that better environmental management leads to superior business performance.

The company has also been recognized by World Steel Dynamics as a world class steel maker. The steel company caters to a wide gamut of customers in India and abroad. They include automobile manufacturers, producers of white goods, the construction industry and consumers of tubes, bearings etc. (The New Indian Express)

Konkan Railway Corporation Ltd, celebrated its 14th Foundation Day and the 6th successful year of its operation phase on October 15,2003. On this momentous occasion it announced the launch of its revolutionary 'Sky Bus Technology' which is designed to eliminate 2000 tonnes of carbon emission daily.

TATA STEEL TO PUSH FOR SOCIAL RESPONSIBILITY OF BUSINESS

The Tata Iron and Steel Company (Tisco) will announce in the course of this year and policy framework whereby it “will do business” only with entities which show a commitment to corporate social responsibility. “We want to encourage our suppliers and customers to adopt social responsibility because business has an obligation to give something back to society”, said B.Muthuraman, Managing Director of Tisco, which is known for its committed budgets down the decades for community welfare beyond the confines of its own employees.



Mr.Muthuraman disagreed with the proposition that the “business of business is business and adding to shareholder value” and that social welfare was beyond its purview. For business to be “sustainable in the long term”, they had to commit themselves to social good, he said.

The Tisco MD said his company was already the lowest cost producer of steel in the world, thanks to huge investments it made

in modernization in the post-1991 years and total involvement of the workforce up to the lowest level in evolving and implementing the company’s vision. Further cost cuts would be possible only if externalities like infrastructure and rail freight improved.

The steel industry the world over had performed poorly till the last three years or so, because of slump in demand with developed countries with limited populations having crossed the stage of creation of infrastructure. The revival in the fortunes of steel at present was

due to the demand shifting to countries like India and China, which had both large programmes for building infrastructure like roads and ports and huge populations that could sustain a rising domestic demand, he observed. Mr.Muthuraman said his company has started drilling work for its Titanium dioxide project in Tamil Nadu and had commissioned studies on availability of water, power and other requirements.



The domestic IT industry is expected to clock a revenue of Rs.33,700 crore in 2003-04.

TATA STEEL BUYS NAT STEEL DIVISION

Ramnath Subbu

In line with its stated objective of growth and globalization, the Tata Iron and Steel Company has signed definitive agreements with Nat-Steel Ltd., Singapore, \$486.4 million (about Rs.1,313 crores).

Nat Steel will spin off its entire steel business into a wholly owned subsidiary. Nat Steel Asia Pte.ltd., subsequent to which Tata Steel will acquire 100 per cent of the equity interest in Nat Steel Asia.. The steel business of Nat Steel reported a turnover of S\$1.4 billion (Rs.3,820 crores) and a profit before tax of S\$47 million (Rs.127 crores).

Nat Steel is the dominant steel producer of Singapore and owns steel mills in China, Thailand, Vietnam, the Philippines, Malaysia and Australia. The business is focused on long products and has a capacity to produce about two million tones annually of rebars, wire rods, pre-stressed concrete wires and strands. The acquisition also includes a 26 per cent equity interest owned by Nat Steel in Southern Steel Berhad, a 1.3 million tonne steelmaker in Malaysia. The board of the new company will be reconstituted only after the transaction is completed.

Globalisation initiative

B.Muthuraman, Managing Director, Tata Steel, said the acquisition was a significant step in Tata Steel's globalization initiative and will act as a beach-head investment for

Tata Steel in the high growth geographies of China and Southeast



Asia. Through this transaction, Tata Steel will increase its manufacturing footprint to seven new countries in Asia. "All of these countries are strong in steel consumption. The opportunity to go beyond the seven countries is even greater now than earlier. We will look for more acquisitions and acquisitive growth and this is a good platform for further acquisitions in Southeast Asia," said Mr.Muthuraman. Mr.Muthuraman added that plans were being worked out for Nat Steel to source semi-finished steel from India. "Steel billets could be sourced from Tata Steel and hop for better value addition. Infact, the value addition would start as soon as the billets are supplied by Tata Steel," in 2003-04, Tata Steel produced and sold our million tonnes of flat and long products.

Expansion plans

The company is at present implementing a one million tonne expansion project at its Jamshedpur works, which will raise capacity to five million tones annually by September 2005. Further expansion to 7.4 million tonnes is in an advanced stage of planning and will be commissioned in 2008-09.

3,84,935 units of automobiles were exported by India between April 2003 and January 2004.



IDEAS THAT HAVE WORKED: THE INDIAN CAR – 1 [TATA INDICA]

Ajay Kumar

Till about two years ago, India was no different from other less developed countries in one crucial aspect: it had not designed and produced a car indigenously. India's case was even curiouser: the country had sent missiles into space but had not been able to produce an indigenous car.

That situation changed with the launch of the Tata Indica in December 1998. How did Tata Engineering achieve this feat? R N Tata, Executive Chairman of Tata Engineering, shared his experience of creating the Indica with a select audience in New Delhi recently.

Mr Tata was speaking for an ongoing lecture series on "The Ideas That Have Worked".

The story began, said Mr Tata, in 1993, when, speaking at the annual convention of the Automotive Component Manufacturers' Association (ACMA), he put forth the idea of an Asian car to be produced as a collaborative effort by the Indian automobile industry. The response of the industry, Mr Tata recalled, was a mix of skepticism and cynicism.

Tata Engineering then decided it would attempt to produce the car on its own. In taking this decision, it was emboldened by two factors:

One: the company's record of having developed its own products. In the early '80s, Tata Engineering had developed a range of commercial vehicles — the popular 407 and 709 series— followed by the Tata Estate and Sierra, both built on a pick-up platform, and later by the Sumo and the Safari.

Two: Mr Tata's faith in the capabilities of the company's engineers, particularly its 300-odd young engineers, whose talent and skills, he said, are symptomatic of India's spirit of wanting to dare.

The basic concepts of the car were set out in 1995. The car should, it was decided, be designed around the specific needs of the Indian car owner.

With these as the specs, the company's designers at its Engineering Research Centre (ERC) created some renderings of the car which were refined and finalised in association with the famous Milan-based design house, I.D.E.A.

Computer aided designs of the Indica

- Total number of engineers who worked on the Indica project: 700.
- Time taken from conception to completion: 31 months.

Sardar Patel University in Gujarat has become India's first varsity to have a radio station of its own.

- Number of components specially developed for the Indica: 3,885
- Number of dies specially manufactured for the Indica: 740
- Number of production fixtures created for the Indica: 4,010
- Cost of the project: Rs 1,700 crore, sub-divided into: development Rs 206 crore, tooling Rs 74 crore, and plant Rs 1,420 crore.

Compared to the \$400 million that Tata Engineering spent on creating the Indica, Mr Tata said, the creation of a new car in the West typically entails an investment of well over \$1.5- \$2 billion in creating the production facilities, with development and tooling costing in the region of \$800 million more.

The work is done in the five shops that create the Indica: the engine shop, the transmission shop, the press and welding shop, the paint shop and the assembly shop.

The other initiative that Tata Engineering took was to involve its vendors in the development of the car in a major way — right from the concept stage. Eventually, over 300 vendors supplied some 1,360 parts of the Indica to Tata Engineering, comprising

77 per cent of the vehicle's cost. In doing all this, Mr Tata says, the vendors have created some 12,000 jobs.

The Indica has now been on the Indian roads for the last 20 months. How has it done? According to the latest figures available, Tata Engineering has sold nearly 82,000 Indicas



and has captured a market share of 14.4 per cent in its segment. For its passenger cars, Tata Engineering decided to create a separate Strategic

Business Unit (SBU) with its own sales and marketing set-up. Currently, the Indica is sold and serviced at over 70 dealers and 164 authorised service centres.

As far as the Indica is concerned, Mr Tata said, Tata Engineering's next challenges are: one, to begin exports — with a batch of 200 on its way to Italy as a "seeding" operation; two, to tackle quality-related issues, and, three, to speedily come out with variants.

Together, R.N.Tata concludes, "We can make things happen; we just need to do it." Like Tata Engineering did, with the Indica. (From the Web Site)



Scientists of the Central Institute of Medicinal and Aromatic plants (CIMAP), Lucknow, have got a US patent for developing a disease-resistant and high straw and seed yielding variety of poppy plant. The new, plant, known as "Rakshit" took about seven years to develop by a long process of hybridisation, both in the laboratory as well as in the fields.

TISCO NOTES ON VISION 2007

1. To seize the opportunities of tomorrow and create a future that will make us an EVA positive company:
2. To continue to improve the quality of life of our employees and the communities we serve.
3. Revitalize the core business for a sustainable future:
4. Venture into new businesses that will own a share of our future:
5. Uphold the spirit and values of TATAs towards nation building:

Strategic Goals:

6. Move from commodities to Brands:
7. EVA Positive Core Business:
8. Continue to be lowest cost producer of steel:
9. Value creating partnerships with customers and suppliers:
10. Enthused & Happy employees:
11. Sustainable Growth:



Strategy

12. Manage Knowledge:
13. Outsource Strategically:
14. Encourage Innovation and Allow the Freedom to Fail:
15. Excel at TBEM: (The TATA Business Excellence Model)
16. Unleash people's potential and create leaders who will build the future:
17. Invest in attractive new Businesses:
18. Ensure Safety & Environmental Sustainability:
19. Divest, Merge, Acquire:

(From the Web Site)



Four Indian companies have made it to 2004 edition of fortune 500 the list of the world's largest corporations (by sales) brought out by the Fortune magazine—up from three in 2003. Till 2003, Indian Oil was the only company to feature on the list. It has now been joined by Reliance Industries, Bharat Petroleum and Hindustan Petroleum.

150 YEARS OF THE INDIAN POST OFFICE

The Indian Post Office was recognised as a separate organisation of national importance and was placed, for the first time, under the unitary control of a Director General on October 1, 1854 Today, India has the largest postal network in the world with 1,55,618 post offices (as on March 2003), of these, 1,39,081 post offices are in rural areas. At the time of Independence, there were 23,344 post offices in India.

A look at how the Indian postal network compares with some other countries

Countries	Population (Million)	Area (lakh Sq.Km.)	No.of Post Office	People per Post Office	Service Area per Post Office (Sq.KM)
USA	284.8	93.72	38,123	7,471	245.85
UK	59.5	2.44	17,633	3,377	13.84
Germany	82.4	3.57	13,000	6,335	27.46
Brazil	172.4	85.12	12,520	13,769	679.87
South Africa	44.3	12.21	2,650	16,728	460.77
Nigeria	116.9	9.24	4,624	25,288	199.78
China	1284.9	95.96	57,135	22,490	167.97
Australia	19.4	77.13	3,872	5,008	1,992.09
Japan	127.3	3.78	24,760	5,143	15.26
Egypt	67.9	10.01	5,399	12,575	185.49
India	1027.0	32.88	1,55,618	6,602	21.13

Some landmarks

*1854: Post Office Act XVII introduced * 1863: Railway Sorting * 1873: Embossed envelopes on sale * 1876: India joins Universal Postal Union * 1877: VPP and parcel services started * 1879: Postcard introduced * 1880: Money Order launched * 1935: Indian Postal Order * 1972: PIN introduced * 1985: Post and Telecom departments separated * 1986: Speed Post launched * 2004: e Post introduced

(The Hindu)



\$120 billion is the size of the apparel and textile industry in our country.

COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

The council of Scientific and Industrial Research (CSIR) has remarkably transformed itself into a performance-driven and user-focussed organization.

1. CSIR transformation is listed as being amongst the top ten achievements of Indian Science and Technology in the 20th Century by J.V.Narlikar.
2. CSIR is listed along with WIPRO, Infosys and Reliance as organizations that managed radical change, the best in the post-liberalized India-in the book “World Class in India”-by Sumantra Ghoshal.
3. Business India says that the CSIR labs have been transformed by the power of enterprise and proactive management.
4. Making India globally competitive in Science and Technology is CSIR’s job. It achieved the first-ever breakthrough of flowering of Bamboo within weeks as against 20 to 120 years in Nature.
5. CSIR was the first to analyse genetic diversity of the most enigmatic tribes of Andaman and established their origin out of Africa 60,000 years ago.
6. CSIR developed the first transgenic Drosophile model for drug screenings for human cancer.
7. CSIR introduced DNA finger-printing in India which is very critical in crime detection, paternity determination and wild life preservation.
8. CSIR catapulted India to be the first Pioneer Investor under the U.N. Law of Sea Treaty.
9. CSIR has invented the first-ever once a week non-steroidal family planning pill in the world-Saheli.
10. CSIR has designed India’s first-ever parallel processing computer FLOSOLVER
11. CSIR spearheaded the discovery of a new anti-tubercular molecule after a gap of 40 years through a unique public-private partnership.
12. CSIR has developed an oral genetically engineered vaccination to treat cholera.
13. CSIR has developed a potential therapeutic agent from herbal sources for chronic myelogenous Leukaemia.
14. CSIR has saved thousands of lives world-over by developing the anti-cerebral Malaria drug E-MAL.
15. CSIR has developed Asman the novel herbal therapeutic, which is giving relief to thousands of Asthma patients.
16. CSIR has set up the biggest net-worked programme on bioactives for drug discovery based on traditional medicines.
17. CSIR has partnered more than 50,000 companies with turnover ranging from Rs.5 lakhs to Rs.five lakh crores.
18. CSIR has spearheaded India’s largest public-private partnership programme of New Millennium Indian Technology Leadership Initiative with over 220 private sector and institutional partners.
19. CSIR has heralded the dawn of Civil Aviation in the country by the inaugural flight of a 14 seater multi-role aircraft SARAS.

3,63,655 units of motorcycles were sold in India during February 2004.
--

20. CSIR has rejuvenated India's one hundred-year old refinery at Digboi using the most modern molecular distillation Technology.
 21. CSIR has, provided the critical technology for NMP Lube Extraction plant of the capacity 2,50,000 tonnes per annum.
 22. CSIR is the first to break the cartels in high technology areas of catalysts and do reverse transfer of technology to the Europe and the US.
 23. CSIR has provided the leverage to the biotech and pharma industry by spearheading the development of a versatile portable P.C. based Software '*Bio-suite*' for Bioinformatics.
 24. CSIR has successfully challenged the grant of a patent in the US for use of Haldi (turmeric) for wound-healing, now popularly known as the "*Second Battle of Haldighati*"
 25. CSIR fought at the global fora to give Indian Traditional Knowledge its pride of place, so that it could be treated at par with industrial property system.
 26. CSIR has established-the first-ever-in the world-"Traditional Knowledge Digital Library" accessible in eight international languages.
 27. CSIR has remained among the top three in the list of PCT patent applications amongst all the developing countries during the last three years.
 28. CSIR has topped the list of U.S. patent holders for the last 5 years in India
- (From the CSIR Bulletins)



LIC has emerged the biggest term lending institution in the country, up from its number three position a year ago. LIC loan disbursements grew 154%, to Rs.15,781 crore in 2003-04, which is 12% higher than the combined disbursements of IDBI, IFCI, IDFC, SIDBI and IIBI.

India exports 4 lakh tonne of stainless steel every year valued at Rs.4,000 crore.

THE INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR)

Kalpana Rajaram and Dr.P.K.Suri

The ICAR is a registered society, an autonomous body under the Department of Agricultural Research and Education. It promotes, conducts and coordinates research, education and primary extension and educates in agriculture, animal sciences, fisheries, and allied sectors.

Each distinct agro-climatic zone of India has a multi-disciplinary regional research station under the National and Research Project.

28 Agricultural universities, The Indian Agricultural Research Institute, New Delhi, Indian Veterinary Research Institute, IVRI Izat Nagar, National Dairy Research Institute, NDRI Karnal and Central Institute of Fishery Education CIFE (Bombay) are the constituent bodies of ICAR.

ICAR has established three National Research Centres in Bio-technology in agriculture, animal health and animal production.

ICAR's priority and thrust areas for future research are a) conservation and planned exploitation of germ plasm resources b) enhancing productivity through evolution of high yielding high birds and varieties with

tolerance to Biotic and abiotic stresses c) development of integrated pest management practices for optimum plant protection d) breeder seed protection e) research on export-oriented commodities f) diversification with emphasis on agro-forestry, livestock and fisheries g) development and refinement of dry-farming technology h) improving nutrient management system i) inventory of natural resources j) energy managements k) post-harvest technology, l) fostering excellence in research and education m) transfer of technology and improving communications system and n) human resource development.

Latest technological advances made by scientists are demonstrated to farmers and extension workers.

Working through National Demonstration Projects, Operational Research Projects, Krishi Vigyan Kendras, and lab to land programmes, the ICAR takes the fruits of research to the farmer directly.

Appropriate technology, low cost technology, reliance on locally available materials, utilisation of optimum levels of inputs, etc. form ICAR's strategies.

Three Indian corporate heads, Wirpro's Azim Premji, Mukesh Ambani of Reliance group and Nandan Nilekani of Infosys have been chosen as "the most powerful people in business" in Asia's power 25 list. According to the latest issue of the Fortune magazine, Premji has been ranked 10th, while Ambani is 13th and Nilekani 23rd.

- The first variety of super rice in the world named 'Lunishree' was developed at Central Rice Research Institute. It has been commercially cultivated in coastal Orissa.
- Renu, Bipasa, Amrut, etc. are rainfed-rice varieties
- Hybrid rice seed production is being made
- An integrated rice-fish-prawn, vegetable, horticultural farm system has been developed.
- 160 varieties of wheat have been released for different agro-climatic regions.
- Genetically engineered mustard variety has been released.
- Cross maize hybrid 'Paras' has come in for commercial production.
- Man-made cereal Triticale, non-toxic-strains of Kesari dal, high-yielding varieties of tuber crops and cotton hybrids, have been developed.
- Methods to improve the shelf-life of fruits have been standardised.
- In the field of animal sciences, DNA finger-printing, studies

on major histocompatibility complexes, cross-breeding with improved exotic breeds, evolution of new genotypes, new strains of sheep, for carpet wool and high yielding poultry layers are ICAR's achievements.

- Identification of non-traditional feed-resources with high nutritional content, for cattle and poultry and development of vaccines for sheep and poultry, are ICAR's achievements.
- The Fisheries' sector has become self-sufficient in fish-seed. Composite carp-culture, air-breathing fish-culture, integrated aqua-culture with crop and animal culture for the benefit of the rural people etc. are the ICAR contributions.

It is to the credit of ICAR, that it has not only managed to feed India's 1000 million population with food to spare, it has also made India, the world's number one milk producer.

All this ICAR has done with constant efforts at sustainability, cost-effectiveness and eco-friendliness.

(Adapted from "Science and Technology in India" Spectrum Books (P) Ltd; New Delhi 58 – 2004)



The Canadian economic writers react differently from Americans on the issue of B.P. outsourcing. Top executives of major corporations take the view that if over the years, the West has forced the emerging markets (read developing countries like India) to make adjustments, "we have to make them as well". But unlike US this subject is not likely to become a paranoid political issue in Canada.

INDIAN RAILWAYS

The first railway on Indian sub-continent ran over a stretch of 21 miles from Bombay to Thane.

The formal inauguration ceremony was performed on 16th April 1853, when 14 railway carriages carrying about 400 guests left Bori Bunder at 3.30 pm “amidst the loud applause of a vast multitude and to the salute of 21 guns.” The first passenger train steamed out of Howrah station destined for Hooghly, a distance of 24 miles, on 15th August, 1854.

In south the first line was opened on 1st July, 1856 by the Madras Railway Company. It ran between Veyasarpady and Walajah Road

(Arcot), a distance of 63 miles. In the North a length of 119 miles of line was laid from Allahabad to Kanpur on 3rd March 1859. The first section from Hathras Road to Mathura Cantonment was opened to traffic on 19th October, 1875.

These were the small beginnings which in due course developed into a network of railway lines all over the country. By 1880 the Indian Railway system had a route mileage of about 9000 miles.

INDIAN RAILWAYS, the premier transport organisation of the country is the largest rail network in Asia and the world’s second largest under one management.

Indian Railways is a multi-gauge, multi-traction system covering the following:

Track Kilometres	Broad Gauge (1676 mm)	Metre Gauge (1000 mm)	Narrow Gauge (762/610 mm)	Total
	86,526	18,529	3,651	108,706
Route Kilometres	Electrified	Total		
	16,001	63,028		

Other Interesting facts of Indian Railways

Indian Railways runs around 11,000 trains everyday, of which 7,000 are passenger trains.

7566 - locomotives	37,840 - Coaching vehicles	222,147 - Freight wagons	6853 - Stations
300 - Yards	2300 - Goodsheds	700 - Repair shops	1.54 million - Work force

The Salient and new features of Indian Railways are:

(i) Territorial Readjustment of Zones and In-House Reforms

(ii) National Rail Vikas Yojana

- Strengthening of the Golden Quadrilateral to run more long-distance mail/express and freight trains at a higher speed of 100 kmph.
- Strengthening of rail connectivity to ports and development of multi-modal corridors to hinterland.

(iii) New Steps towards Safety and Security:

(iv) Improving Financial Health :

(v) New Trends in Passenger Amenities:

To take care of the unreserved segment of the passengers, a new pilot project on **computer based unreserved ticketing** has been launched this year. Of the 13 million passengers served by the network everyday, nearly 12 million are unreserved passengers. To cater to this huge segment, computer based ticketing systems has been launched for all stations in Delhi area and in due course throughout the country. With this,



- Construction of four mega bridges – two over River Ganga, one over River Brahmaputra, and one over River Kosi.
- Accelerated completion of those projects nearing completion and other important projects.

unreserved tickets can be issued even from locations other than the boarding station and will reduce crowds at booking offices and stations.

(vi) Indian Railway Catering and Tourism Corporation:

Has launched On-line ticketing facility
Computerized reservation facilities were

The total installed capacity of the Indian cement industry is 142 million tonne.

added at 245 new locations. At present these facilities are available at 758 locations in the country covering about 96 per cent of the total workload of passenger reservation. A pilot project for issuing **monthly and quarterly season tickets through Automated Teller Machines (ATMs)** has been launched in Mumbai this year and has been found very successful. Another pilot project for purchasing tickets including monthly and quarterly season tickets through **Smart Card** has also been launched.

(vii) **‘National Train Enquiry System’** has been started in order to provide upgraded passenger information and enquiries.

(viii) Freight Operations Information System (FOIS)

(ix) Railways have established their own **intra-net ‘Railnet’**.

(x) **Sterling Performance by PSUs** The public sector undertakings of the Railways, especially IRCON and RITES, scored commendable achievements during the last three years. IRCON International has achieved a record turnover of Rs.900 crore during 2001-02 and the foreign exchange earnings of this prestigious organisation has increased six fold over the years. At the international level, IRCON is at present executing different projects in Malaysia, Bangladesh and Indonesia. The PSU has registered a strong presence in the international scenario by its sterling track record.

(xi) **RITES**, another prestigious PSU under the Ministry has scaled new heights in

performance, profit and dividend to the shareholders during the last three years. Its turn over increased from Rs.172 crore in 1999 to Rs.283 crore in 2002. RITES for its sterling performance secured the prestigious ISO-9001 Certification this year. The company has also entered into export/leasing of locomotives in different countries in Asia and Africa. RITES is operating all over the world including Columbia, UK, Iran, Malayasia, Myanmar, Bangladesh, Sri Lanka, Tanzania, Uganda, Ethiopia, Turkmenistan and Uzbekistan.

(xii) Indian Railways Finance

Corporation Limited secured excellent rating for fourth year in succession.

(xiii) **Indian Railway Catering & Tourism Corporation (IRCTC) Internet based ticket booking** has been launched by IRCTC in Delhi, Chennai, Bangalore, Mumbai and Calcutta this year.

(xiv) **Innovative Technologies by Konkan Railway** : Konkan Railway Corporation (KRC), the technological marvel of Indian Railways, has invented quite a few new technologies. Anti Collision Device (ACD), state-of-art indigenous technology of KRC is currently under-going intensive field trials and is capable of avoiding collision between trains. Sky bus metro is another innovative, economic and eco-friendly mass rapid transportation solution devised by Konkan Railway. Self Stablising Track (SST) devised by KRC, which is undergoing trials at present, will help Railways run the fastest train in the near future and will make tracks much more safe and sustainable.

The IT-assisted education market is estimated at \$2 billion out of the total global IT learning industry of \$26 billion.
--

(xv) Private Sector Participation:**(xvi) Telecommunication – New Trends :**

To give improved telecommunication systems on Railways, Optical Fibre based communication systems has been adopted and laying OFC has increased to 7,700 route kilometer this year.

(xvii) New Technologies : India became the first developing country and the 5th country in the world to roll out the first indigenously built “state-of-the-art” high horse power three phase electric locomotive when the first such loco was flagged off from Chitranjan Locomotive Works (CLW). CLW has been achieving progressive indigenisation and the cost of locomotives has come down to the level of Rs.13.65 crore. Diesel Locomotives Works, Varanasi has produced state-of-the-art 4000 HP AC/AC diesel locomotive in April this year. These locos are capable of hauling 4,800 tonne freight trains at a speed of 100 KMPH and can run continuously up to 90 days in one stretch without any major maintenance.

(xviii) Honours and Awards: Indian Railways achieved a number of recognitions and awards in sports, tourism sector and for excellence in operational matters.

(xix) Darjeeling Himalayan Railways attained the World Heritage Status from UNESCO. **Fairy Queen**, the oldest functioning steam engine in the world, which finds a place in the Guinness Book of World

Records, got Heritage Award at the International Tourist Bureau, Berlin in March, 2000. On operational front, Delhi Main station entered the Guinness Book for having the world’s largest route relay interlocking system.

(xx) Social obligations and care for weaker sections:

Senior citizens, students, disabled persons etc. enjoy concessional benefits from Railways. New initiatives in this area during the last three years include reduction of age limits for special concession to senior women citizen from 65 to 60 years, blind and mentally challenged persons can now travel in AC classes on concessional rates. Free second class Monthly Season Tickets (MSTs) for school going children upto tenth standard for travel between home and school was also introduced.

(xxi) Tie-Up with Foreign Railways:

Indian Railways is in constant touch with Railways across the world to bring in state-of-art facilities in its system. Towards this, a Memorandum of Understanding was signed during the Eighth Session of the Indo-Austria Joint Economic Commission held in Vienna. This seeks to promote and deepen long-term infrastructure-specific cooperation between Indian and Austrian Railways to their mutual benefit. A three-day International Conference of Union of Railways was organised by Indian Railways in New Delhi in which hundreds of delegates from various industries and Railways around the world participated.

(From the Web Site)

99.7 million pieces of garments valued at \$380.1 million were exported by our country during April this year to the quota countries.

KONKAN RAILWAY- POSITIVE, CONSTRUCTIVE DARING

The Challenge

The task was formidable. As Karlis Goppers pointed out in his Swedish International Development Cooperation Agency (SIDA) report in July 1997: With a total number of 2,000 bridges and 92 tunnels to be built through this mountainous terrain containing many rivers, the project is the biggest and perhaps most difficult railway undertaking during this century, at least in this part of the world. The various problems, had been carried out efficiently and in a very short time.

The largest railway project in this part of the world in the last five decades threw up a whole range of difficulties technical, financial, emotional and psychological. The rocky Sahyadris had to be bored through, 1,500 rivers had to be forded, a railway line had to be built out of nowhere. And once in a while, a poisonous snake, or a tiger, decided to take a close look at goings-on! In the face of collapsing embankments and unrelenting mountains, the engineers had to be tough. But they also had to be deeply sensitive to the feelings of those who had given up their land.

Family life took a backseat during those arduous years; when the engineers went to work, their wives did not know if their husbands would return home that night, and one engineer even delayed his marriage until the work was complete. Many engineers stayed away from their families during this period, not even returning home for festivals like Diwali.

At the very least, working conditions were uncomfortable; in June 1994, Mahad had floods 10 to 12 feet above the road level,

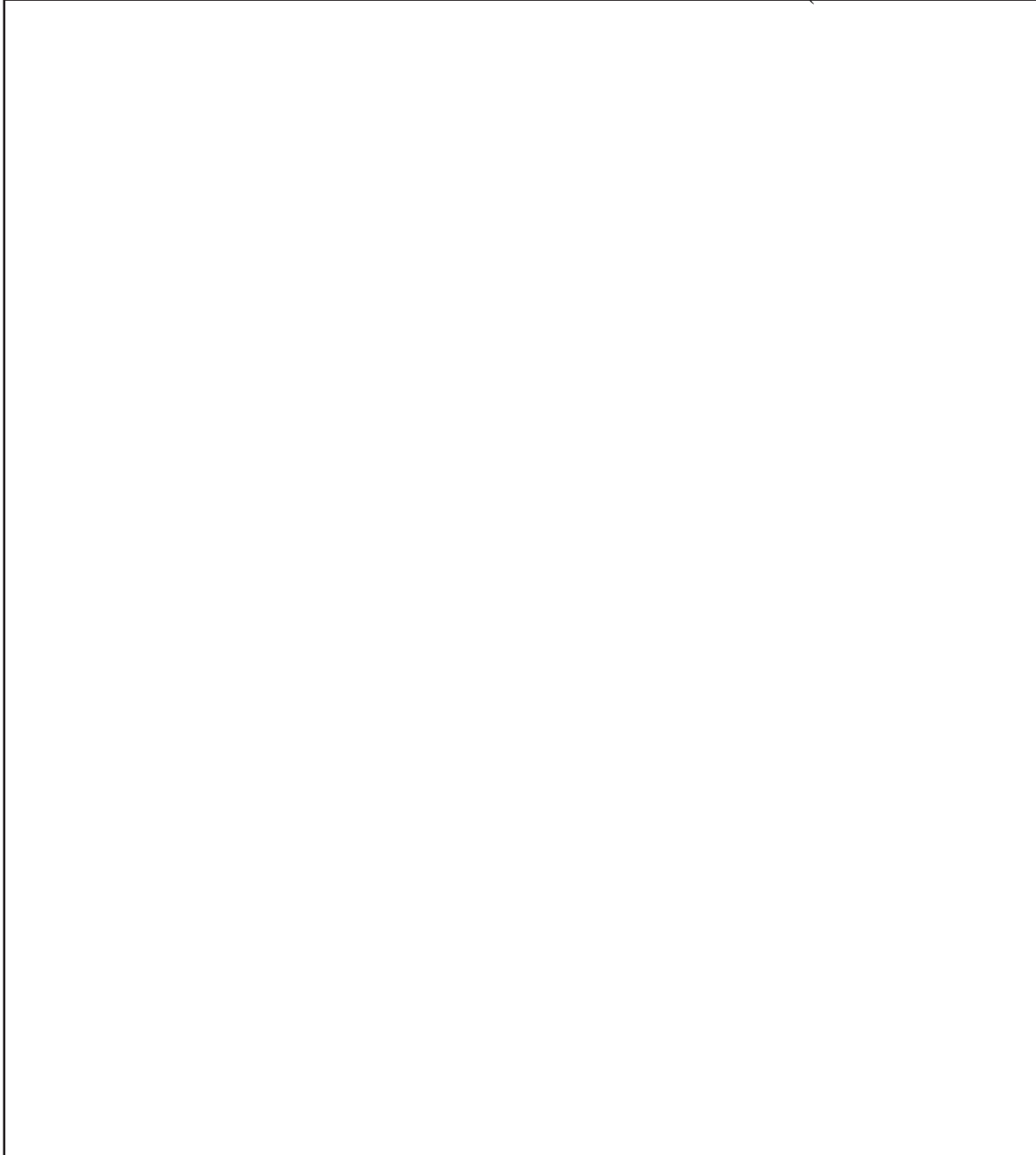
and when they receded, Konkan Railway jeeps had six-inch layers of silt on the seats. Four workers in the Byndoor tunnel in Karnataka faced their own battle with water they were thrown back 60 feet by a sudden gush. Water was not the only element that posed danger. Mr. A.F. Shevare, Chief Engineer of Ratnagiri (North and South) and Kudal, who succeeded Mr. B.R. Kulkarni, recalls how, during the monsoons in July 1997, an entire mountainside collapsed at Ukshi. Machines were buried under the debris, but 200 labourers had a miraculous escape. People like 30-year-old Ravi Kapoor, an Executive Engineer, had amazing luck as well. On October 10, 1997, three months before the Pernem Tunnel was completed, a major collapse took place, just above where he was standing. Mr. Kapoor found himself in chest-deep soil, his helmet crushed and a boulder on his foot. A colleague, Mr. V. Jayasankaran, stayed back to rescue him, and Mr. Kapoor escaped, but only just. Mr. Jayashankaran later received an award for bravery. Thanks to Mr. Jayasankaran's alertness, several other workers' lives had also been saved; earlier, on August 26, 1997, it was his timely warning that resulted in workers being evacuated when a serious collapse occurred at Pernem Tunnel.

For those who kept going despite the toughest of challenges, the sense of achievement made it all worthwhile. Looking back, Mr. D.R. Shyama Sundar, now Regional Railway Manager in charge of the 363.88 km. Section between Roha and

Sawantwadi says, beaming with pride: The task was so difficult that when I travel along the route, I find it hard to believe that we built it! It was the very challenging nature of the work, he adds, that led to the team spirit that was so crucial in the successful completion of the project. As one engineer pointed out at celebratory function

in Kudal on January 25, 1998, the day before the through commissioning of the Railway: If people had considered this merely as a job, it would have taken 25 years to complete. The Chief Engineer of Panaji, Mr. S. Balakrishna, put it simply: After seven years of hard struggle, he said, we have proved that the impossible is possible.

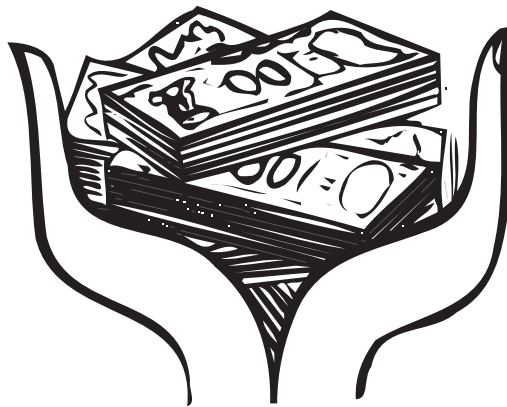
(From the Web Site)



STATE BANK OF INDIA

The origin of the State Bank of India goes back to the first decade of the nineteenth century with the establishment of the Bank of Calcutta in Calcutta on 2 June 1806. Three years later the bank received its charter and was re-designed as the Bank of Bengal (2 January 1809). The right of note issue was very valuable not only for the Bank of Bengal but also its two siblings, the Banks of Bombay and Madras. Initially loans were restricted to Rs. one lakh and the period of accommodation confined to three months only. The security for such loans was public securities, commonly called Company's Paper, bullion, treasure, plate, jewels, or goods 'not of a perishable nature' and no interest could be charged beyond a rate of twelve per cent. Loans against goods like opium, indigo, salt woollens, cotton, cotton piece goods, mule twist and silk goods were also granted but such finance by way of cash credits gained momentum only from the third decade of the nineteenth century. The presidency Banks of Bengal, Bombay and Madras with their 70 branches were merged in 1921 to form the Imperial Bank of India. The triad had been transformed into a monolith and a giant among Indian commercial banks had emerged. The new

bank took on the triple role of a commercial bank, a banker's bank and a banker to the government. But this creation was preceded by years of deliberations on the need for a 'State Bank of India'. What eventually emerged was a 'half-way house' combining the functions of a commercial bank and a quasi-central bank. When India attained freedom, the Imperial Bank had a capital base (including reserves) of Rs. 11.85 crores, deposits and advances of Rs. 275.14 crores and Rs. 72.94 crores respectively and a network of 172 branches and more than 200 sub offices extending all over the country.



All India Rural Credit Survey Committee recommended the creation of a state-partnered and state-sponsored bank by taking over the Imperial Bank of India, and integrating with it, the former state-owned or state-associate banks.

An act was accordingly passed in Parliament in May 1955 and the State Bank of India was constituted on 1 July 1955. More than a quarter of the resources of the Indian banking system thus passed under the direct control of the State. Later, the State Bank of India (Subsidiary Banks) Act was passed in 1959, enabling the State Bank of India to take over eight former State-associated banks as its subsidiaries (later named Associates).

India's exports of iron and steel between April 2003 and January 2004 were valued at \$1,847,80 million.

The State Bank of India is the largest commercial bank in India in terms of profits, assets, deposits, branches and employees. The total number of branches of SBI and its associates till March 2003 were 13579. State Bank of India (SBI) was constituted through an Act of Parliament in May '55 to carry on the business of banking and other business, and for the purpose of taking over the undertaking of the Imperial Bank with effect from 1 Jul. '55.

SBI plays a vital role in providing working capital and term finance to the Indian industry. Due to its large network of branches, SBI has been able to garner a large chunk of deposits from the rural sector. It is also a leader in the international banking business. About 46% of the Bank's branches are located in rural areas, 27 % in semi-urban areas and 16% and 11% are located in urban and metropolitan areas respectively. SBI has eight business units namely, corporate banking, international banking and domestic banking for concentrating on core areas, associate banks division for looking after the working of these banks, credit division to monitor the overall credit, and three other business units-finance, corporate development and inspection for in-house work, to help keep the mammoth organisation in order. In October 1996 the Bank successfully floated the first GDR issue by any commercial bank in the country and raised US\$ 369 million, including the greenshoe option. The "World Equity"



journal adjudged the SBI GDR issue as the "Asian Equity Issue of the Year" for its being a 'well-planned, well-priced and well executed issue that continued to perform well for the investors'.

Around 21,000 employees, including officers, were permitted to retire. The bank spent Rs 2271.24 crore as VRS compensation. The Bank has crossed another milestone by making a successful foray into

insurance. SBI is the only Bank to have been permitted a 74% stake in the insurance business. The Bank's insurance subsidiary, SBI Life Insurance Company, a joint venture with the Bank holding 74% and Cardif S.A., the Joint venture partner, the balance 26%, was incorporated to

undertake life insurance and pension business. Cardif S.A. is a wholly-owned subsidiary of BNP-Paribas, which is the largest bank in France and one of the top ten banks in the world. Cardif S.A. is the largest bancassurance company in France.

The bank's efforts to establish a world-class credit information bureau in India culminated in the successful setting up of the Credit Information Bureau (India) Ltd., a joint venture of the Bank with HDFC Ltd., Dun and Bradstreet Information Services India Pvt. Ltd. and Trans Union International Inc.

The bureau will handle both positive and negative credit information in commercial and consumer market segments and we expect that the joint venture will benefit from

2.60 lakh units of commercial vehicles were sold in the country during 2003-04.

the synergy of alliance of market leaders in their respective fields. In order to reduce risk and develop a transparent and active debt market in general and Government securities market in particular, the Clearing Corporation of India Ltd. has been set up in Mumbai with the Bank as the chief promoter. The Bank has an equity holding of 26% along with all India financial institutions, other scheduled commercial banks and primary dealers. The Corporation will act as a clearing house for sale and purchase of Government securities and foreign exchange. The bank has formalized all arrangements for its new technology platform for branch operations, treasury business and risk management. Work is well underway in all related projects including connectivity between 49 cities, which will be achieved during the current year. The core banking software is under customization.

The bank will soon launch its debit card viz. SBI Cash Plus. Customers can use it to draw cash and do other transactions at the ATMs and also use it at merchant establishments for paying their shopping bills. This facility will be available to all SBI customers.

The State Bank of India is the largest commercial bank in India in terms of profits, assets, deposits, branches and employees. The total number of branches of SBI and its associates till March 2003 were 13579. State Bank of India (SBI) was constituted through an Act of Parliament in May '55 to carry on

the business of banking and other business, and for the purpose of taking over the undertaking of the Imperial Bank with effect from 1 Jul.'55.

SBI plays a vital role in providing working capital and term finance to the Indian industry. Due to its large network of branches, SBI has been able to garner a large chunk of deposits from the rural sector. It is also a leader in the international banking business. About 46% of the Bank's branches are located in rural areas, 27 % in semi-urban areas and 16% and 11% are located in urban and metropolitan areas respectively. SBI has eight business units namely, corporate banking, international banking and domestic



banking for concentrating on core areas, associate banks division for looking after the working of these banks, credit division to monitor the overall credit, and three other business units-finance, corporate development and inspection for in-house work, to help keep the mammoth organisation in order. In October 1996 the Bank successfully floated the first GDR issue by any

commercial bank in the country and raised US\$ 369 million, including the greenshoe option. The "World Equity" journal adjudged the SBI GDR issue as the "Asian Equity Issue of the Year" for its being a 'well-planned, well-priced and well executed issue that continued to perform well for the investors'.

Having nurtured the subsidiaries, especially investment banking and asset management

As many as 1.6 million mobile handsets were sold in India during March 2004.

in their formative years, the Bank would now like them to spread their wings and soar high. With freedom (a) to scout for strategic foreign partners to enhance their capabilities in cross-border deals, product innovation and delivery, (b) to induct professional management and (c) to formulate new strategies for business development, they should better consolidate their position and emerge as leaders in the changing competitive environment. In the HRD area, a major event during 2000-01 was the implementation of a voluntary retirement scheme, with the objective of improving the age and skill profile of the staff in keeping with the Bank's business strategies. Around 21,000 employees, including officers, were permitted to retire. The bank spent Rs 2271.24 crore as VRS compensation. The Bank has crossed another milestone by making a successful foray into insurance. SBI is the only Bank to have been permitted a 74% stake in the insurance business. The Bank's insurance subsidiary, SBI Life Insurance Company, a joint venture with the Bank holding 74% and Cardif S.A., the Joint venture partner, the balance 26%, was incorporated to undertake life insurance and pension business. Cardif S.A. is a wholly-owned subsidiary of BNP-Paribas, which is the largest bank in France and one of the top ten banks in the world. Cardif S.A. is the largest bancassurance company in France.

While the Bank will market the products through its branches and also through tied agents subsequently, Cardif S.A. will provide active support in product development, risk

management and IT areas. SBI Life launched its first product 'Sanjeevan' on the 15 June 2001. SBI Life has introduced several Group Insurance Schemes including coverage for housing loan borrowers and deposits account holders. With the required approvals falling in place enabling SBI branches to handle insurance business, SBI Life's Bancassurance products are expected to get a big boost and also bring substantial non-interest income to the bank's branches. The bank's efforts to establish a world-class credit information bureau in India culminated in the successful setting up of the Credit Information Bureau (India) Ltd., a joint venture of the Bank with HDFC Ltd., Dun



and Bradstreet Information Services India Pvt. Ltd. and Trans Union International Inc.

The legislation for enabling legal framework to share information is expected shortly. The bureau will handle both positive and negative credit information in commercial and consumer market segments and we expect that the joint venture will benefit from the

2.8 million Personal computers were sold in the country during 2003-04.

9.2 million units of colour televisions are expected to be sold in India during this fiscal.

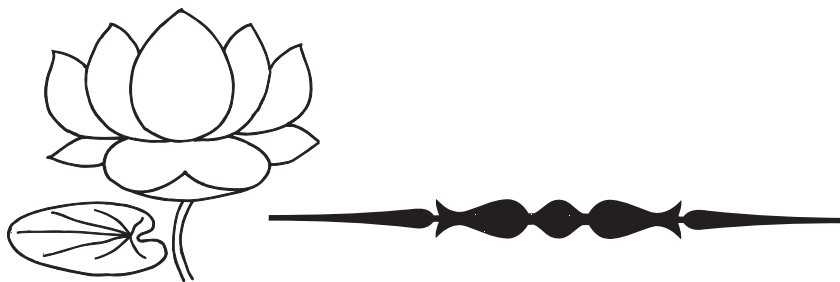
synergy of alliance of market leaders in their respective fields. In order to reduce risk and develop a transparent and active debt market in general and Government securities market in particular, the Clearing Corporation of India Ltd. has been set up in Mumbai with the Bank as the chief promoter. The Bank has an equity holding of 26% along with all India financial institutions, other scheduled commercial banks and primary dealers. The Corporation will act as a clearing house for sale and purchase of Government securities and foreign exchange. It is expected to commence operations shortly. As a part of restructuring the Bank's representative office at Moscow is to be upgraded to a subsidiary and it is also going to a JV with Canara Bank and its Sydney Representative Office will be upgraded to a full-fledged Branch. As a part of restructuring the bank has closed its Jakarta and Sao Paulo offices in 2002-03. The bank has formalized all arrangements for its new technology platform for branch operations, treasury business and risk management. Work is well underway in all related projects including connectivity between 49 cities, which will be achieved



during the current year. The core banking software is under customization.

The bank will soon launch its debit card viz. SBI Cash Plus. Customers can use it to draw cash and do other transactions at the ATMs and also use it at merchant establishments for paying their shopping bills. This facility will be available to all SBI customers.

(From the Web Site)



3.44 million pieces of garments valued at \$16.6 million were exported by India to the US during April this year.

Indian companies are able to compete with foreign companies in their own countries, because of their quality and competitive rates. In 1998 Sundaram Fasteners was awarded the Japanese Prize for Total Quality Maintenance. That company also bagged the 'Supplier of the year Award' from the giant General Motors.

CANARA BANK

1. Canara bank was founed by A.Subbarao Pai in Mangalore Karnataka on 1.7.1906.
2. Backed by a team of professionals, committed staff and extended clientele base, the bank has over the last 98 years, achieved many a milestone in the fields of commercial and social banking.
3. The bank began operations as the Canara Hindu Permanent Fund in 1910.
4. The bank took over a number of banks starting with the Bank of Kerala Ltd. In 1961, and ending with Pangal Nayak Bank Ltd. In 1968.
5. In 1969 the Canara Bank was nationalised.
6. In 1985 it took over Laxmi Commercial Bank Ltd.
7. In its nearly a century of operations, the bank has grown into 2409 branches with a total size of over Rs.97,000 crores and currently employs over 47500 people.
8. Steadily the bank has grown. In the period 1995-2000, the deposits have grown at a compounded growth rate of 13.9%. Its advances in the same period grew by 18.5%.
9. Its operational efficiency has improved. Business size per branch shows a growth rate of 14.4% for the last 7 years.
10. The bank has international operations with, a wholly-owned foreign subsidiary.
11. Canara bank's foreign business is an important component. In FY 2002 it contributed 59,333 crores to the Bank's turnover.
12. Information technology initiatives, computerisation of branches, tele-banking, Anywhere banking, Remote. Access Terminal Facilities etc. are Canara Bank's special features.
13. Canara Bank is a world class, world-size bank, with Profitability, Efficiency and Productivity as its corporate Mission.
14. The key areas of the bank are retail-advances, housing loans, loans to retail traders and self-employed businessmen, SSI lending, and agricultural advances.

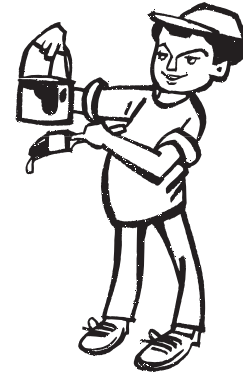


century of operations, the 2409 branches with a total Rs.97,000 crores and over 47500 people. In the period 1995-2000, the deposits have grown at a growth rate of 13.9%. Its advances in the same period grew by 18.5% efficiency has improved. branch shows a growth last 7 years. international operations owned foreign subsidiary. foreign business is an component. In FY 2002 59,333 crores to the

(From the Web Site)

53.6 lakh units of two-wheelers were sold in the country during 2003-04.

THE INSTITUTE OF MATHEMATICAL SCIENCES



About IMSC

The Institute of Mathematical Sciences (IMSC), founded by Alladi Ramakrishnan in 1962, is a national institution for fundamental research in frontier disciplines of the mathematical sciences. It is an autonomous institute funded by the Department of Atomic Energy of the Government of India and by the Government of Tamil Nadu.

At present, IMSC has about 45 faculty members working in the areas of Mathematics, Theoretical Computer Science and Theoretical Physics. The Institute trains graduate students through active research programmes which culminate in the award of the PhD degree. IMSC supports post-doctoral research through fellowships and has a vibrant Visiting Scientists Scheme. The Institute has an excellent library, a state-of-the-art computing facility with high speed internet connectivity and facilities of an international standard for hosting scientific meetings.

The Institute is presently in a phase of rapid growth and large scale expansion in all research areas, including emerging ones, is envisioned.

The Areas of Research at IMSC are: Mathematics, Theoretical Computer Science and Theoretical Physics.

Academic Programmes

Doctoral Programme

Graduate Visitor's Programme

Post-doctoral Programme

Visiting Scientists Programme

Front-ranking scientists from all over the world visit the Institute frequently to interact with its members and to lecture on their work. Over the

years, the Institute has hosted several Nobel Laureates and Fields Medalists, often over extended periods of time.

Association Programme

For an announcement of the Associateship Programme for the period click [here](#).

Collaborative Projects

Institute members participate in several collaborative projects with other institutions.

Academic Meetings

Besides regular Seminar/Colloquium activities by Institute members and Visiting Scientists, Workshops, Symposia and Conferences in various fields are organized frequently by IMSC. Conference participants come from all over India and abroad, and are usually housed in the Institute Guest-House Complex. Such meetings are usually held in the Ramanujam Auditorium of IMSC.

Recent Conferences.

The Institute participates in the **Theoretical Physics Seminar Circuit** (TPSC) programme, through which physicists can visit leading research centers in India and lecture on their work. IMSc organises and participates actively in Advanced Schools such as those conducted by the Science and Engineering Research Council (SERC) of the Department of Science and Technology (DST) and the National Board of Higher Mathematics (NBHM). The Institute encourages its members to interact and collaborate with scientists elsewhere.

(From the Web Site)

ALL INDIA INSTITUTE OF MEDICAL SCIENCES



1. The All India Institute of Medical Sciences was established in 1956 by an Act of Parliament.
2. The aims and objects of the Institute, as specified in the Act, were to develop patterns of teaching in undergraduate and postgraduate medical education in all its branches so as to demonstrate a high standard of medical education to all medical colleges and other allied institutions in India; to bring together at one place educational facilities of the highest order for the training of personnel in all important branches of health activity; and to attain self-sufficiency in postgraduate medical education.
3. For pursuing academic programmes, the Institute has been kept outside the purview of the Medical Council of India. The Institute continues to be a leader in the field of medical education, research and patient-care in keeping with the mandate of the Parliament.
4. The Institute is fully funded by the Government of India. However, for research activities, grants are also received from various sources including national and international agencies. While the major part of the services are highly subsidised for the patients coming to the AIIMS hospitals, certain categories of patients are charged for treatment/services rendered to them.
5. Postgraduate Medical Education: During 1998-99 session 94 students (i.e. for the courses commencing in January, 1998 and July, 1998) were admitted to various postgraduate, post-doctoral and superspeciality courses i.e. M.D., M.S., M.D.S., M.H.A., Ph.D., M.Ch., D.M., and M.Sc. in various specialities. Nine candidates belonging to the Scheduled Castes and five belonging to the Scheduled Tribes got admission to the postgraduate courses. The Institute provides full time postgraduate and post-doctoral courses in 40 disciplines. In the year under review (2004), 50 postgraduate students qualified for various degrees. The guiding principle in postgraduate training is to train them as teachers, researchers and above all as competent doctors to manage and treat the patients independently.
6. Undergraduate Medical Education: This year the Institute admitted 50 students to its MBBS course, 14 students to B. Sc. Nursing (post-certificate) course, 50 students to B.Sc. (Hons.) in Nursing Course, 19 students to B. Sc. (Hons.) Human Biology Course, 10 students to B.Sc. (Hons.) in Ophthalmic techniques, 6 students to B.Sc. (Hons.) in Medical Technology in Radiography and 4 students to B.Sc. (Hons.) in Speech and Hearing.

(i) 58 candidates from various organisations and State Governments received short-term training at the various departments of the Institute during the year.

(i) The MBBS course is spread over five and a half years, dividing the period to one year for preclinical, one and a half years for para-clinical and two years for clinical subjects, followed by one year rotating internship. Paramedical courses like B. Sc. (Hons.) in Nursing, Ophthalmic Techniques, Medical Technology in Radiography and Speech and Hearing continued to be popular and attracted students from other countries also. The curricula of these courses are under constant scrutiny by the faculty of the Institute for purposes of improvement.

7. Continuing Medical education. The Institute organised a number of workshops, symposia and conferences in collaboration with various national and international agencies during the year. Professionals from various institutions all over the country participated in these seminars and workshops and benefited with update knowledge.

8. Training for Scheduled Castes (SC) and the Scheduled Tribes (ST) Candidates. - The SC and ST candidates are given due consideration and weight age in accordance with the Government of India guidelines in all selections.

9. International Role: The Institute continued to provide consultancy services to several neighbouring countries under bilateral agreements or under the aegis of international agencies. The Institute is actively involved in development of B.P. Koirala Institute of Health Sciences in Nepal. During 1998-99 the Institute trained 17 candidates (including 7 WHO trainees and

10 foreign nationals as elective trainees) to fulfil its international obligations.

10. Research: The All India Institute of Medical Sciences is a leader in the field of medical research. Major research works are on in the areas of hepatitis, acute liver failure, sub-acute liver failure, diarrheal diseases in children, micro- nutrient deficiency, reproductive biology, oncogene, signal transduction, immunity of malaria parasite, mycobacteria study in TB and leprosy, developmental genetics, development of immunodiagnosics, bone marrow and genetic factors in epilepsy. 340 research Projects are continuing during this period.

(i) Research grants totalling to Rs. 3,69,17,448/- was received from various international and national funding agencies during 1998-99.

11. Patient Care Services: During 1997-98, the AIIMS hospital and speciality centres attended to over 16,97,853 patients in various out-patient departments (OPD's). The number of indoor patients during this period was 87,472. A total number of 1,08,828 surgical procedures were conducted including the procedures like brain tumour surgery, open heart surgery, heart transplant, kidney transplant and cancer surgery. During the period from April to September, 1998, the main hospital of the Institute attended to little over 5,57,000 patients in the OPDs and admitted 19,168 patients. Over 28,384 surgical procedures were conducted.

(i) During the first six months of the current year, the Cardio-Thoracic Centre conducted

48.8 lakh units of two-wheelers were sold in the country between April 2003 and February 2004.
--

over 1,178 heart operations while the Neurosciences Centre performed 1,329 operations and 60 Gamma Knife procedures were also performed. The Cardio-Thoracic Centre attended to 44,333 patients while the Neurosciences Centre had 30,219 patients in their OPDs.

(ii) The Institute-Rotary Cancer Hospital attended to 22,129 patients in the OPD and admitted 3,858 patients in the first half of the year. During this period, 1,262 cancer-related surgery were undertaken at I.R.C.H.

(iii) Dr. Rajendra Prasad Centre for Ophthalmic Sciences attended to 1,42,457 patients in the OPD during the first six months of the current year (1.4.98 to 30.9.98). The number of admitted patients was 6,099 and surgical procedures were conducted on 6,315 patients during this period.

12. Community Services: Community based programmes have been integral part of the Institute's clinical and research activities. The Rural Health Centre at Ballabgarh, being run under the supervision of the Centre for Community Medicine, is a unique experiment. Besides, departments of Obstetrics and Gynaecology, Rehabilitation and Physical Medicine, Paediatrics, and Dr. Rajendra Prasad Centre for Ophthalmic Sciences have been actively involved in community-based services. Dr. Rajendra Prasad Centre for Ophthalmic Sciences organises regular camps in the rural community.

13. Breakthrough & Innovations: The Cardio-thoracic Centre has been providing state-of-the-art cardiac care to the patients suffering from coronary heart disease, congenital heart disease and valvular defects. After its spectacular success in heart transplantation surgery during the previous years, the centre has started work on Organ Retrieval and Banking Organisation with the support of the Government of India. Our cardiologists are routinely performing up-to-date procedures in the field of interventional cardiology like coronary stenting, atherectomy, balloon dilatation for valves, radio-frequency ablation for arrhythmia etc.

(i) The Neurosciences Centre has been managing all types of neurological problems including a large number of brain surgery. The Gamma-Knife procedure has been fully established in the centre. Till now 178 procedures have been performed with very encouraging results.

(ii) Dr. Rajendra Prasad Centre for Ophthalmic Sciences has started sutureless cataract surgery and laser surgery in a big way. The phacoemulsification procedure is being provided free of charge to all the patients. Dr. Rajendra Prasad Centre has acquired and installed an excimer laser and would be providing service at subsidised charges.

(iii) The Surgical Oncology Department in the Institute-Rotary Cancer Hospital has developed a breast cancer surgery based on ultrasonic application, which is virtually bloodless.

36.15 million tonne of finished steel was produced by our country during the last fiscal.

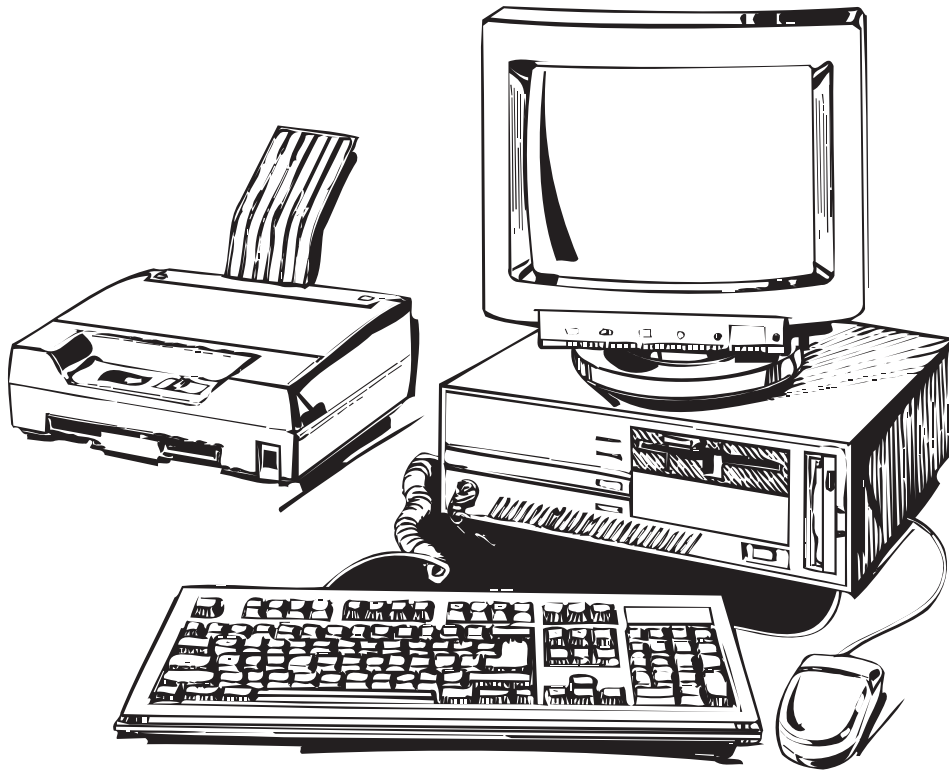
(iv) The Department of Urology has successfully reconstructed bladders, using intestinal sack, in patients suffering from bladder cancer. This would help hundreds of patients to have normal bladder function even after removal of the cancer bladder.

(v) The Department of Otorhinolaryngology has successfully performed four Cochlear implantations, the last one being the 24-channel model.

(vi) The Department of Orthopedics has established itself as a leading centre in all types of joint replakhement surgery and spinal surgery.

14. Budget: For 1998-99 the Central Government has provided a budget of Rs. 168.09 Crore (Rs.69.96 crore in Plan and Rs. 98.13 crore in Non-plan). This includes Rs. 1 crore earmarked for developing the Trauma Centre.

(From the Web Site)



Domestic sales of biotech products are expected to touch \$10 billion by 2005.

INDIAN INSTITUTE OF SCIENCE, BANGALORE



Jamsetji Nusserwanji Tata (1839-1904) was one of the extraordinary men who even towards the end of the nineteenth century was convinced that the future progress of the country depended crucially on research in Science and Engineering. He envisaged this Institute as destined to promote original investigations in all branches of learning and to utilise them for the benefit of India.

After consulting several authorities in the country, he constituted a Provisional Committee to prepare the required scheme for the setting up of the Institute. On 31st December 1898, a draft prepared by the Committee was presented to Lord Curzon, the Viceroy-designate. Subsequently, upon the request of the Secretary of State for India, the Royal Society of London asked for the help of Sir William Ramsay, Nobel Laureate. Ramsay made a quick tour of the country and reported Bangalore to be the suitable place for such an Institution.

On the Initiative of the Dewan, Sir K Sheshadri Iyer, the Government of Shri Krishnaraja Wodeyar IV, the Maharaja of Mysore came forward with an offer of 372 acres of land, free of cost and promised other necessary facilities. Thus the original scheme of Jamsetji Tata became a tripartite venture with the association of the Government of India and the Government of Maharaja of

Mysore. (Subsequently, the Government of Karnataka had

gifted lands during the Golden Jubilee and Platinum Jubilee of the Institute making the current land holding of the Institute up to 443 acres.)

The constitution of the Institute was approved by the Viceroy Lord Minto, and the necessary Vesting Order was signed on 27th May 1909. Early in 1911, the Maharaja of Mysore laid the foundation stone of the Institute and on 24th July the first batch of students were admitted in the Departments of General and Applied Chemistry and Electrotechnology.

With the establishment of the University Grants Commission in 1956, the Institute came under its purview as a deemed university.

The Institute has been able to make many significant contributions primarily because of a certain uniqueness in its character. It is neither a National Laboratory which concentrates solely on research and applied work, nor a conventional University which concerns itself mainly with teaching. But the Institute is concerned with research in frontier areas and education in current technologically important areas. This is also the first Institute in the country to introduce

The prestigious Wired magazine has named Infosys among 40 companies worldwide that are reshaping the global economy. The others who are part of this exalted list are such big names as IBM, Sony, BP, Honda Motor, Wal-Mart, Microsoft Intel and Galxo Smith Kline.

innovative Integrated Ph D Programmes in Biological, Chemical and Physical Sciences for science graduates.

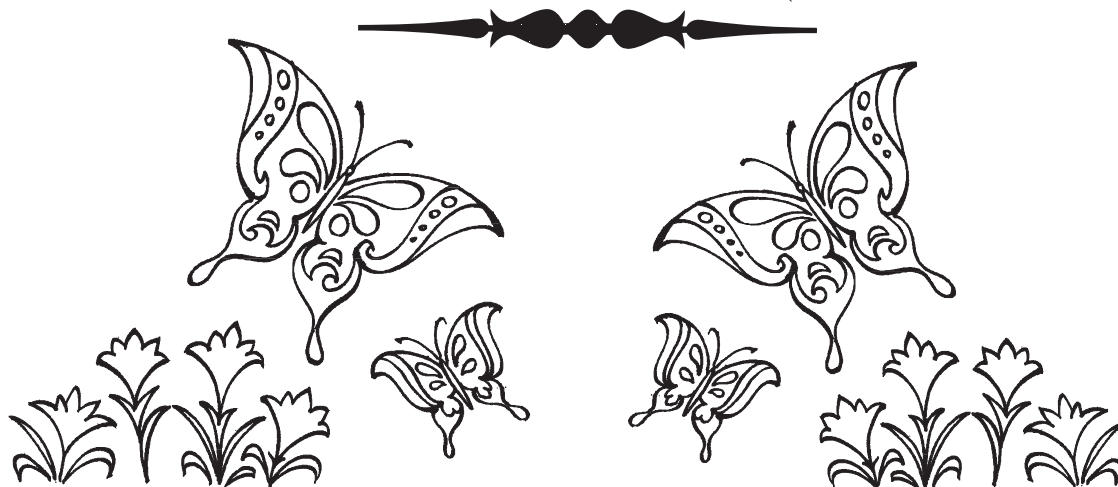
During the past eight decades many are the alumni and faculty who have gone out from this Institute to direct science and technology in the country, to create and nurture other laboratories and scientific institutions and to establish key industries. C V Raman, H J Bhabha, Vikram S Sarabhai, J C Ghosh, M S Thacker, S Bhagavantam, S Dhawan, C N R Rao and scores of others who have played a key role in the scientific and technological progress of our country have been closely associated with the Institute. The Council of the Institute confers Honorary Fellowship on eminent scholars and scientists and on those who have made noteworthy and lasting contributions to the cause of science and industry in India. Among the 24 recipients of this distinction are Pandit Jawaharlal Nehru, M Vishveswaraya, C V Raman, J R D Tata, Vikram S Sarabhai and C N R Rao.

Besides formal education and research, the Institute has been playing an active part in offering short-term courses to scientists and technologists in service. The *Continuing Education Programme* covers a wide range of topics and over 1500 working scientists and engineers go through such courses every year.

In keeping with its aims and objects, the Institute has organised a *Centre for Scientific and Industrial Consultancy* through which the knowhow generated in the Institute percolates to industries via industry-sponsored projects.

The *Jawaharlal Nehru Centre for Advanced Scientific Research* with organic links with the Institute has been functioning on Campus and also on Jakkur.

In all these endeavours, the Institute strives to contribute to the scientific, academic and technological goals of our country, with a keen awareness of its noble tradition and the need for maintaining a high quality in all its activities. (Source I.I.S.C. Web Site)



Tata Consultancy Services (TCS) has emerged as the largest software exporter in India, clocking revenues of Rs.4,545 crore, followed by Infosys Technologies at Rs.3,545 crore and Wipro Technologies with Rs.2,787 crore, for the year 2002-03. The combined revenue of the top 20 software and service exporters in the area of IT services, products and technology was Rs.20,746 crore (\$4.3 billion) in 2002-03 a growth of 18%

SOLELY FOR SCIENCE

Neha Prasad

On March 29, 1904, Sir J.C. Bose accomplished the enviable—a U.S. patent on the first semi-conductor the world saw. In his application of September 30, 1901, Bose explained “...With a glass lens, the instrument will detect and record lights not only some way beyond the violet, but also in the regions of infra-red in the invisible regions of electric radiation. We may thus style this apparatus a ‘tejometer’....or universal radiometer.”

Symposium

To celebrate the centenary of Sir J.C. Bose’s patent on the “Detector for Electrical Disturbance”—the discovery of lead sulphide (Galena) as the most efficient wideband semiconductor biode, the Bose institute conducted a symposium of eminent scientists.

The Bose Institute was the first of its kind to be started by an Indian (Sir J.C. Bose) in 1917 to further scientific knowledge. With its competent and seasoned workforce and diverse departments like Microbiology, Bio-chemistry and Biophysics, the institute has carved out a niche of its own in the scientific community. It also encompasses research sections dealing exclusively with Plant Molecular and Cellular Genetics, Animal physiology, Immunotechnology and Environment Science. In 1988, the Bioinformatics Centre was formed to research genetic engineering and molecular remodelling.

The library provides state-of-the-art infrastructure to aid everyday research and development. Sophisticated analytical

instrumentation facilities make available a range of unique apparatus to researchers. Additional service units such as the Central Instrumentation Facility, Distributed Information Centres and scientific workshops help knit together the Institute’s comprehensive web of facilities.

The Institute plans to establish Centres of Excellence in Bioinformatics, Plant Molecular and Structural Biology, Myobacterium Research and Astro-particle Physics and Space Sciences along with a National Facility in Genomics and Proteomics hoping to extend the limits of scientific knowledge in keeping with the traditions of Sir J.C. Bose.



Twin ideals

He envisaged the Institution to be “not merely a laboratory but a temple.” Eighty-seven years ago, he set twin ideals for the

institution to follow—advancement of knowledge and comprehensive diffusion of the fruits of its labour. “We are proud inheritors of his immeasurable scientific vision and foresight,” says Prof. M. Siddiqi, Director, Bose Institute.

Bose is famous for revolutionising the world of wireless communication. Within six years, he had done away with the cumbersome, inaccurate laboratory equipment of the 1890s and ushered in the 20th Century with a range of delicate, reliable and easy working devices in miniature. Although his instruments were financial and technological marvels, Bose seems unable to exploit their commercial potential. A man of science, Bose was solely occupied with posing a unique catechism to Nature.

(The Hindu)

KALAM LAUDS WOCKHARDT'S BIOTECH RESEARCH

Ramnath Subbu

The President, A.P.J. Abdul Kalam has inaugurated the Wockhardt Biotech Park in Aurangabad. This is the largest biopharmaceutical complex with six dedicated manufacturing plants.

The Rs.200 crore complex is spread over three lakh sq. ft. and has capacities to cater to 10-15 per cent of the global demand for major biopharmaceuticals. At present, the complex makes Wosulin (recombinant insulin), Erythropoietin and Hepatitis B Vaccine.

The biotech park has a strength of over 400 scientists; 80 of whom are working on breakthrough technologies in the area of biopharmaceuticals. The President was appreciative of the company's research that has made key medicines more affordable to Indians. He also toured the complex and discussed with scientists the new research areas.

Chairman, Wockhardt, announced that the company had made a technology breakthrough by developing Glargine, a new generation advance on insulin.

"We will initiate Phase III clinical trials with Glargine and expect to introduce it in India in the next 18 months," he said.

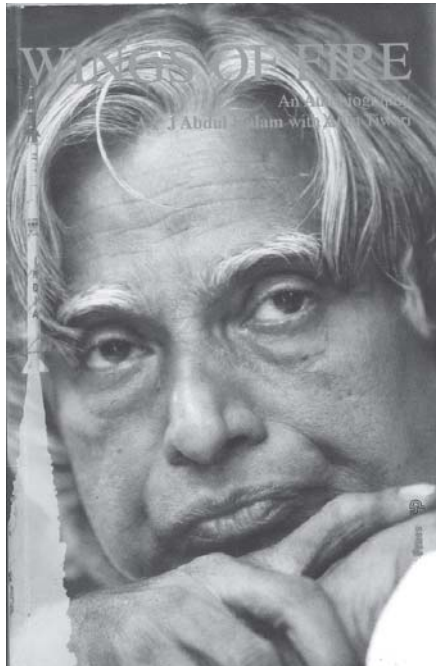
Wide range of products

With the introduction of Glargine and convenient delivery devices such as pens, Wockhardt will have a comprehensive range of products for diabetes management. Wosulin (recombinant insulin), launched last year, has captured a 20 per cent share of the new prescription market.

Wockhardt's entry into the market led to a 40 per cent drop in price, which has led to a 20 per cent increase in usage of insulin by diabetics.

While the company's key focus areas remain pharmaceuticals, biotechnology and drug discovery, the company has also been focusing on other areas. "In the case of diseases such as cancer, the body's immune system finds it extremely difficult to handle the cancer cells.

Biotechnology products such as Interferon, help improve the immune defence system."



Tata Steel has purchased a steel mill in Ukraine.

The company is also working on an important compound—granulocyte colony stimulating factor (GCSF)—for cancer and hopes to launch it in the Indian market in late 2005 or early 2006.

It is also working on an anti-infectant drug, WCK-771, for which clinical trials will be completed in 6-8 months and would be launched in 2008.

Compound for cancer

The company is also working on the pen-reusable insulin delivery system which will be introduced in the first quarter of next year. Its pen-disposable-insulin delivery system will be launched a year thereafter.

Biotech exports

The firm is targeting a 100-fold increase in biotech exports to Rs.100 crores by 2005

instead of our earlier estimated date of 2006.” The exports will come from Wockhardt’s three key biotechnology drugs—Wepox (Erythropoietin), Wosulin and Biovac B (Hepatitis B vaccine).

The company has already received approvals from regulatory agencies of ten countries in Southeast Asia, Central Asia, South America and Africa and expects more in the next 12-18 months.

“These markets are huge opportunities. The market for insulin alone is over \$800 million. Several high value biotech medicines are due to come off patent in the next few years, offering opportunities to launch cost-effective versions with the potential of reaching more needy patients across the world,” said the Wockhardt Chairman.

(The Hindu)



FORD INDIA SHIPS COMPONENTS TO CHINA

Ford India has started exporting to China, the company was at present exporting 170 different components for 25,000 units of cars made in China.

The company sources over 90 per cent of its product contents locally. It has also a strategic tie-up with Hindustan Motors to locally manufacture engines. On the export front, it shipped about 25,000 cars a year mainly to Latin American countries, South Africa and China.

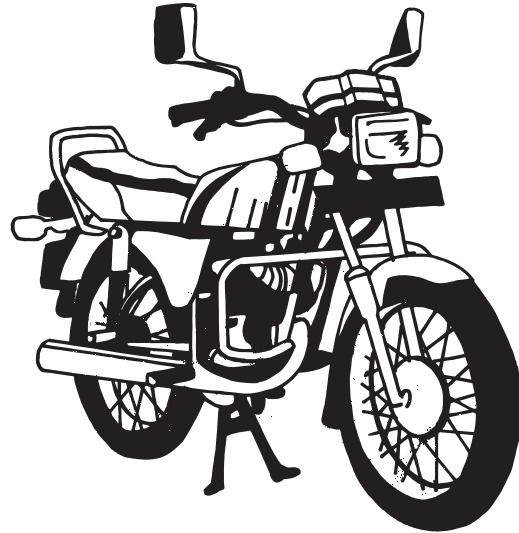
[The Hindu]

3.96 lakh MT of copper was produced by our country in 2003-04.

MARUTI UDYOG LTD

Profile:

When Maruti entered the Indian car market, it sought to fill what it perceived as two very glaring needs. One to provide fuel efficient, low-cost vehicles, which were reliable and of high quality. Two, to offer customers a friendly sales and after sales service. Total automobile value and customer satisfaction: these objectives shaped our policies and our approach to quality. Additionally, the absence of an efficient public transportation system was leading to a growing demand for passenger cars. A burgeoning work force and growing middle class population meant that personal transport had become a necessity. The first cars rolled out for sale on 14th December 1983, (the Company went into production in a record 13 months), marking the beginning of a revolution in the Indian automobile industry. Through the years Maruti has provided world-class contemporary Japanese technology, suitably adapted to Indian conditions and Indian car users. We have also provided users with a range of cars to suit different needs. Maruti's market share figures show the response of customers: In 1997-98, our market share of vehicles was over 70%. In addition to leading in the economy car segment, Maruti is also the leader in the luxury car segment with a market share of 38%. The success of the joint venture led Suzuki to increase its equity from 26% to 40% in 1987, and further to 50% in



1992. As a result, Maruti changed from being a government company to a non-government company. Several measures of performance have made amply clear that Maruti has established a truly healthy work culture. We have met all project and performance targets since inception. Our productivity levels are constantly improving. The Company has had good labour relations with employees from the very beginning, and have been successful in the export market. Yet, the Maruti culture is one that does not believe in resting on its laurels. We adhere to the spirit of Kaizen which states that constant improvement is always possible. The most basic tenet of productivity that we hold dear is that "Today should be better than Yesterday and Tomorrow should be better than Today".

(From the Web Site)

Garment exports by India to quota countries during 2003-04 amounted to 1,178.6 million pieces valued at \$4,744.2 million

WOCKHARDT, DRL GOBBLE UP FOREIGN DRUG FIRMS

Indian pharmaceutical companies seem to be on a roll. Not satisfied with their prowess at home, drug firms are now increasingly looking at acquisitions abroad to enhance their product portfolio as well as shore up bottom lines.

In May 2004, in identical deals of \$11 million (Rs.49 crore) apiece, pharma majors Dr.Reddy's Laboratories (DRL) and Wockhardt announced their intention to acquire drug firms in the US and Germany respectively. While Wockhardt has set its sights on Germany-based Esparma GmbH, a generic drug company, Dr.Reddy's plan to take over dermatology firm Trigenesis Therapeutics Inc.

Both the companies view the acquisitions as important in their scheme of things. "With the acquisition of Esparma, we will be able to make an entry into the largest generic drug market in European union viz. Germany," says Wockhardt chairman Habill Khorakiwala. The German generics market was estimated to be around \$6.1 billion in 2003, with a generics penetration rate of over 54%.

"Esparma's strong presence in urology, neurology and diabetology, is in line with Wockhardt's therapeutic strength. This will boost Wockhardt's further growth in the European Union and also take our global

strategy to a newer level of products and customers." Khorakiwala added.

Esparma recorded sales of \$20 million (Rs.90 crore) in 2003, and has a sizeable portfolio of 135 marketing authorizations, of which 67 are in Germany. The company also has nine international patents and 94 trademarks.

This is Wockhardt's third international acquisition, after the earlier UK acquisitions of Wallis laboratory in 1998 and CP Pharmaceuticals in 2003.

DRL on its part says the acquisition of Trigenesis gave it access to certain products and proprietary drug to treat skin problems.

Besides the total investment outlay of \$11 million, DRL said it will make additional contractual payments during the course of development of the products and technology platforms and royalties on sales to Skye Pharma Plc and Silvafoam Llc pursuant to existing Trigenesis agreements.

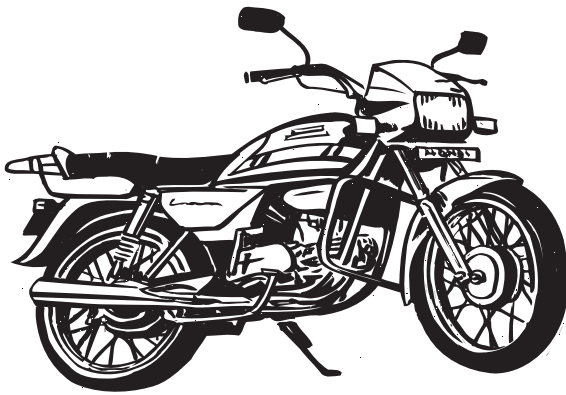
"The deal provides us an exciting opportunity to apply various proprietary drug delivery technologies in creating a pipeline of differentiated drugs that will broaden the range of available treatment options and establish DRL, in the prescription dermatology segment," said Dr.Reddy's CEO G.V.Prasad. [TNIE]



HERO HONDA - FILL IT. SHUT IT. FORGET IT

The Legend of Hero Honda

What started out as a Joint Venture between Hero Group, the world’s largest bicycle manufacturers and the Honda Motor Company of Japan, has today become the World’s single largest two wheeler Company. Coming into



existence on January 19, 1984, Hero Honda Motors Limited gave India nothing less than a revolution on two-wheels, made even more famous by the ‘Fill it - Shut it - Forget it ‘ campaign. Driven by the trust of over 5 million customers, the Hero Honda product range today commands a market share of 48% making it a veritable giant in the industry. Add to that technological excellence, an expansive dealer network, and reliable after sales service, and you have one of the most customer-friendly companies.

This is proved by the company’s sales over the years :

1985-86	43,000 units
1989-90	96,200 units
1998-99	5,30,600 units
1999-00	7,61,210 units
2000-01	10,29,555 units

2001-02	14,25,195 units
2002-03	16,77,537 units

Customer satisfaction, a high quality product, the strength of Honda technology and the Hero group’s dynamism have helped HHML scale new frontiers and exceed limits. In the words of Mr. Brijmohan Lall Munjal, the Chairman and Managing Director, “We will continue to make every effort required for the development of the motorcycle industry, through new product development, technological innovation, investment in equipment and facilities and through and through efficient management.”

YEAR	EVENT
2003	Winner of the Review 200 - Asia’s Leading Companies Award (3rd Rank amongst the top 10 Indian Companies) Most Respected Company in Automobile Sector by Business World Bike Maker of the Year by Overdrive Magazine
2002	Bike Maker of the Year by Overdrive Magazine Winner of the Review 200 - Asia’s Leading Companies Award (4th Rank amongst top 10 Indian Companies).
2001	Bike Maker of the Year by Overdrive Magazine Achieved OM - One million production in one single year Joy Model launched Entrepreneur of the Year Award conferred upon the Chairman, Mr Brijmohan Lall by Ernst & Young 50,00,000th Bike produced

<p>‘Three Leaves Award for Environment’ to Hero Honda by Centre for Social & Environment Green Rating Project.</p> <p>2000 Sponsored ‘Hero Honda NKP Salve Challenger Trophy’</p> <p>Sponsored ‘Stardust Hero Honda Millennium Honours Award’</p> <p>Sponsored ‘Hero Honda Masters Golf Championship’</p> <p>Appointed Sourav Ganguly & Hrithik Roshan as Brand Ambassadors</p> <p>Environment Performance Award to Hero Honda Dharuhera Plant by Haryana State Pollution Control Board</p> <p>Environment Management System of Gurgaon Plant certified ISO-14001 by DNV Holland</p> <p>4,000,000th motorcycle produced</p>	<p>Splendor declared World No. 1 - largest selling single two-wheeler model</p> <p>1999 Best Productivity Award for the best performance in Automobile & National Tractor Sector by Productivity Council presented by Vice President of India</p> <p>1998 20,00,000th motorcycle produced</p> <p>1997 15,00,000th motorcycle produced</p> <p>1985 First motorcycle (Model CD 100) produced 200 motorcycles per day production</p> <p>1984 Company incorporated Technical collaboration signed Foundation stone laid</p> <p>1983 Joint Collaboration Agreement with Honda Motor Co. Ltd. Japan, signed Shareholders Agreements signed</p> <p style="text-align: right;">(From the Web Site)</p>
--	--



1. Tata steels manufacture high-quality steel at the most economic prices. Nalco’s Aluminum, Hidarco’s Aluminum etc. are most economically priced, with high quality of production. They head the Price Leadership lists the economy of their scale helps them operate thus.
2. Of the 67 lakhs of automobiles manufactured in India is 2003-04, cars alone accounted for 6.98 lakhs with Maruti’s share at 4.72 lakhs.
3. Hero Honda’s Splendour is the largest selling motor-cycle model in the world.
4. The Jam Nagar (Gujarat) Refinery of the Reliance is the third largest in the world. Bharat Forge the second largest in its field.

Trilogy E business software is a leading provider of industry-specific enterprise software for Global 100 companies. It is among the world’s largest privately held software companies. The World’s largest companies including Ford, Fujitsu, Land’s End, Nation Wide and SGI use Trilogy’s services. Trilogy solutions are well established in the automotive, communications, computer, and insurance industries enabling leading companies to develop market and sell products more quickly and profitably.

KHADI AND VILLAGE INDUSTRIES COMMISSION



KVIC works under the administrative control of the Ministry of Industry, Government Of India under the department of Small-Scale Industries and Agro and Rural Industries. KVIC has a 10 member commission at the policy making level. The Commission consists of six zonal members (one of whom is Chairman), two expert members and two official members (the Chief Executive officer and the Financial Advisor to the Commission). The Chairman, CEO and FA are full time members.

The head quarters of KVIC is in Bombay and it has its State and Regional Offices in all the States. It has training, production and Sales centres through out the country. KVIC is having 30 State khadi and village industries board, over 3500 institutions and over 29000 co-operative societies. There are around 14200 sales outlets in the country in KVI Sector. It is having 46% women participation in its activities. 30% beneficiaries belongs to SC/ST. KVI Boards assist over 5 lakh artisans. It has reached 2.35 lakhs villages.

Popularising Khadi

The Khadi and Village Industries Commission (KVIC) is a statutory organisation established by an Act of

Parliament namely, the Khadi and Village Industries Commission Act, 1956 (No. 61 of 1956). It is mainly a service organisation engaged in the promotion and development of Khadi and Village Industries (KVI) in rural areas.

Employment Generation

The development programmes of the KVIC are implemented through 30 State/UT KVI Boards which are statutory organisations established under State Laws, 5,149 institutions registered under Societies Registration Act, 1860 and 30,130 cooperative societies. The KVIC also assists 7.98 lakh individual artisans/entrepreneurs directly as well as through State KVIBs. The KVI programmes have now reached over 2.61 lakh villages in the country providing gainful employment opportunities to the rural poor, remote and hilly areas, border and tribal areas, Scheduled Castes and Schedule Tribes (SCs/STs) and women.

The Government is paying utmost attention to the employment generation programmes being implemented through the KVIC to

Safflower production in India during the current season (2004) is estimated at 1.2 lakh tonnes

provide respectable employment to people and enable them to lead a life of dignity. Moreover, this is the only sector which creates employment in a cost- efficient manner. The KVIC is also making an all out effort to provide gainful employment to the rural masses and is also providing financial and other assistance for this purpose.

Financial Assistance

The financial assistance to KVIC's implementing agencies is in the form of grants, rebates and subsidies. The major portion of the grants given to the Commission is for disbursement of rebates on retail sales of Khadi as well as subsidy on village industries. During the last three years, special efforts were made to release additional grants to clear all pending rebate claims. Banks were also motivated to give requisite credit to the Khadi and Village Industries. In the financial year 1999-2000, a sum of Rs. 320 crore has been provided . Moreover, in collaboration with the UNDP, a project for \$2.5 million dollars (about Rs. 11 crore) has been launched for beekeeping, pottery, handmade paper and capacity building of the KVIC.

The KVIC undertakes its programmes in the rural areas through the artisans working in cottage industries. Its activities are providing employment to large number of SCs/STs and

women. At present, 32 per cent and 46 per cent of total KVI employment is from the SCs/STs and women artisans respectively. In order to preserve the spirit of *Swadeshi* and the model of self-reliant growth of the KVI Sector, the Government is providing huge subsidies and grants to the Khadi Sector. During the years 1998-99 and 1999-2000, Rs. 149.09 crore and Rs. 140.69 crore



respectively have been paid as Khadi rebate which was an all time record. During the current financial year also, adequate funds to the tune of Rs. 129 crores for Khadi rebate have been provided for payment of Khadi rebate claims. Moreover, the Government has a l r e a d y

announced the rebate policy for the current year on June 01, 2000 itself, where as in earlier years the rebate policies were declared much later. Sometimes, there is wrong propaganda that the funds under Khadi grant are being reduced progressively. The fact is that with special efforts not only have all past arrears been liquidated, more than adequate funds have been provided for in the current year's budget also.

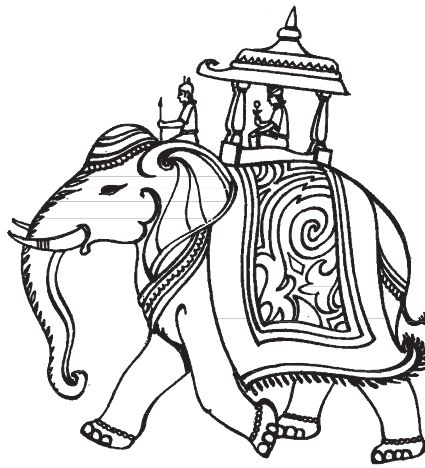
In addition of the financial assistance in the form of budgetary resources, the Government has also extended a guarantee to the RBI for extending a line of credit

India sold Rs.10,000 crores worth iron and steel to China in 2003.

Consortium of Bank Credit (CBC) of Rs. 1,000 crore to the KVIC for releasing term loans to Khadi and Village Industries Sectors.

New Challenges

The Government is giving huge financial assistance to the KVIC. But it was felt that the funds so released have not resulted in the desired benefits. In view of this as well as in view of the challenges of the new economic era, it was found necessary to strengthen the KVIC structurally to enable it to face the challenges of globalisation. Under these circumstances, it was thought fit to conduct a study to restructure the entire KVIC. The restructuring will definitely prepare it to face the challenges in future and make it vibrant and self-sustaining without compromising its cherished objectives.



Fresh Initiatives

The recent lack of growth of the Khadi industry, however, is a matter of serious concern especially in the light of declining production, sales, rural employment opportunities and share of Khadi in the total business of the KVIC. This assumes special significance as population and per capita consumption of clothes in our country has increased over these years. In view of this,

the Government has recently taken many a new initiative for promotion of this sector and be able to exploit the full potential of Khadi as a product category in all its forms.

These initiatives include registration of “Khadi” as a brand name as well as domain name. The KVIC has been advised to register “khadi” as a geographical indication. New products, new designs are being developed with the help of National Institute of Design and National Institute of Fashion Technology

. Packaging of Khadi products is being improved. A mechanism to ensure quality of Khadi products is being evolved. Offers have been invited to renovate the Khadi Bhawan in New Delhi to bring it at par with any modern international store. An advertising campaign, in India and abroad is also being planned to make people aware about the Khadi . Khadi shops are being planned at all international airports in India. And also possibilities of marketing of KVI products through E-commerce is being explored.

Hence, for increasing sales of Khadi and providing greater and better rural employment opportunities in this sector, it is necessary to provide and offer products in accordance with consumer preferences as the KVI sector plays a very important role in the Indian Economy.

(From the Web Site)

Infosys has bagged the globe’s most Admired Knowledge Enterprises award for 2003, for developing knowledge workers through management leadership.

ONGC

Securing Sustained Growth

A modest entity in the serene Himalayan settings - Oil and Natural Gas Corporation Limited (ONGC) was set up as a Commission on August 14, 1956. The company became a corporate on June 23, 1993, which has now grown into a full-fledged horizontally integrated petroleum company. Today, ONGC is a flagship public sector enterprise and India's highest profit making corporate, achieving the record of being the first Indian corporate to register a five digit profit figure of Rs. 10,529 Crore in the year 2002-03.

ONGC has produced more than 600 million metric tonnes of crude oil and supplied more than 200 billion cubic metres of gas since its inception, thus fuelling the increasing energy requirements of the Indian economy. Today, ONGC is the most valuable company in India, contributing 77 percent of India's crude oil production and 81 per cent of India's natural gas production.

To sustain this growth, ONGC has drawn up ambitious strategic objectives, which include doubling the oil and gas reserves. Having accreted six billion tonnes oil and oil equivalent reserves in its first 45 years of operation, ONGC now aims to double these reserves by 2020. The second strategic objective is to augment the global recovery factor from the existing 28 per cent to the global norm of 40 per cent in next 20 years.

Out of the six billion tonnes of oil and gas reserve accretion, four billion tonnes is expected to come from Offshore and Deep Waters. To improve the recovery factor from the existing fields, ONGC is investing Rs. 2,000 crore in 15 re-development schemes.

Corporate Ranking.

* Ranked 326th in Financial Times Global 500 List by market cap; first among Indian Corporates.



New Discoveries

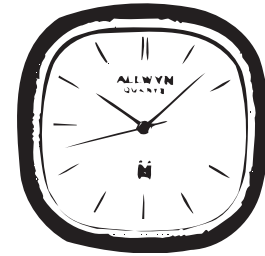
ONGC made six new discoveries, at Vasai West (oil and gas) in Western Offshore, GS-49 (gas) and GS-KW (oil and gas) in Krishna-Godavari Offshore, Chinnewala Tibba (gas) in Rajasthan, and Laipling-gaon (oil and gas) and Banamali (oil), both in Assam.

ONGC Videsh Limited

ONGC's wholly owned subsidiary, ONGC Videsh Ltd, has made significant investments in many parts of the world. The gas property in Vietnam (OVL's participating interest 45%) went into commercial production in December 2002, leading to OVL's first revenue from hydrocarbons. In March 2003, OVL concluded the acquisition of 25% equity in the Greater Nile project in Sudan with an investment of Rs. 3,430 crore. This investment entitles OVL to 3.00 MMT of crude oil per year, which is valued at Rs. 2,500 crore at current prices. OVL opened its first overseas subsidiary, Sakhalin India Inc., in US for managing its operations in Sakhalin Oil field in Russia. Further, ONGC Nile-Ganga BV, a wholly owned subsidiary, was incorporated in The Netherlands to manage the Sudan property. OVL is also pursuing exploration of oil and gas in Russia, Iran, Iraq, Libya Myanmar and other countries.

(From the Web Site)

H.M.T.



Company Profile

Established in 1974, HMT (International) has grown both in size and stature. With a network extending over 38 countries, including representations in over 70 countries, HMT(I) has emerged as the international conduit for a wide array of Indian products. HMT(I) has always scored very high on dependability and quality in products and services as reflected by growing clientele all over world. HMT(I) offers easy and consistent access to reliable technology. Vast experience, assimilated over the years enables comprehensive project engineering packages to be offered. Key areas where HMT(I)'s services have been proven - Machine Tools and Allied Industries, Engineering Industries in capital goods and consumer durables covering Metal Working Sector, Tool Rooms, Foundry, Agriculture, Food Processing, Technical Training Centers, Vocation Development, Industrial Estates, Development of Small and Medium scale Enterprises (SMEs), Entrepreneur & Technical Development Centre etc. HMT(I) has successfully completed projects in Algeria, Indonesia, Kenya, Malaysia, Maldives, Mauritius, Tanzania, Nigeria, Senegal, UAE and other developing countries. HMT(I) is recognized by many leading international organizations such as UNIDO, UNDP, ADB, AFDP & World Bank, for its outstanding performance in international trading and export of products

and services in the following diverse areas: Machine Tools Industrial machinery, Watches and watch components, Tractors and Automotive parts, Projects and services, Engineering Components and Products, Commodities, Software and IT Products & Services. HMT(I)'s extensive technological base and formidable resources have enabled HMT (International) to carve a name as a single-source provider for project expertise in a range of engineering sectors. This knowledge is now deployed to train hundreds of youth involved in engineering activities. HMT (I) has set up Training Centers to generate competent manpower around the world.

Specialization: Belief in the spirit to pioneer & aspire to be a leading player in vast changing business scenario.

Product Brand Names: HMT

Product Range: Machine Tools Industrial Machinery, Watches, Tractors, Engineering Components & Products.

Technology Detail: The technological base & formidable resources have enabled us to carve a name as single-source provider.

Competitive Edge: ISO 9000 certification for all products.

Export Markets: Africa, Asia, Australia, East Europe, Middle East, North America.

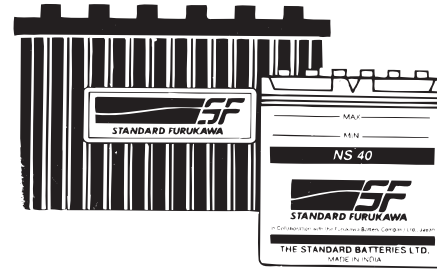
Import Markets: Asia, West Europe, North America.

(From the Web Site)

BHARAT HEAVY ELECTRICALS LIMITED

BHEL is the largest engineering and manufacturing enterprise in India in the energy-related/infrastructure sector, today. BHEL was established more than 40 years ago, ushering in the indigenous Heavy Electrical Equipment industry in India - a dream that has been more than realized with a well-recognized track record of performance. The company has been earning profits continuously since 1971-72 and paying dividends since 1976-77. BHEL manufactures over 180 products under 30 major product groups and caters to core sectors of the Indian Economy viz., Power Generation & Transmission, Industry, Transportation, Telecommunication, Renewable Energy, etc. The wide network of BHEL's 14 manufacturing divisions, four Power Sector regional centres, over 100 project sites, eight service centres and 18 regional offices, enables the Company to promptly serve its customers and provide them with suitable products, systems and services — efficiently and at competitive prices. The high level of quality & reliability of its products is due to the emphasis on design, engineering and manufacturing to international standards by acquiring and adapting some of the best technologies from leading companies in the world, together with technologies developed in its own R&D centres.

BHEL has acquired certifications to Quality Management Systems (ISO 9001),



Environmental Management Systems (ISO 14001) and Occupational Health & Safety Management Systems (OHSAS 18001) and is also well on its journey towards Total Quality Management.

BHEL has

- * Installed equipment for over 90,000 MW of power generation — for Utilities, Captive and Industrial users.
- * Supplied over 2,25,000 MVA transformer capacity and other equipment operating in Transmission & Distribution network up to 400 kV (AC & DC).
- * Supplied over 25,000 Motors with Drive Control System to Power projects, Petrochemicals, Refineries, Steel, Aluminum, Fertilizer, Cement plants, etc.
- * Supplied Traction electrics and AC/DC locos to power over 12,000 kms Railway network.
- * Supplied over one million Valves to Power Plants and other Industries.

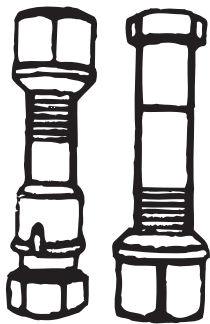
BHEL's operations are organised around three business sectors, namely **Power, Industry** - including Transmission, Transportation, Telecommunication & Renewable Energy - and **Overseas Business**. This enables **BHEL** to have a strong customer orientation, to be sensitive to his needs and respond quickly to the changes in the market.

Bharti has launched India's first dual band network in Delhi Airtel Delhi has thus become the largest network in terms of subscriber base (1.1 million) and spectrum (10 Mzh)

BHEL's vision is to become a world-class engineering enterprise, committed to enhancing stakeholder value. The company is striving to give shape to its aspirations and fulfill the expectations of the country to become a global player.

The greatest strength of **BHEL** is its highly skilled and committed 44,000 employees. Every employee is given an equal opportunity to develop himself and grow in his career. Continuous training and retraining, career planning, a positive work culture and participative style of management – all these have engendered development of a committed and motivated workforce setting new benchmarks in terms of productivity, quality and responsiveness.

BHEL, Tiruchi has added to its **High Pressure Boiler Plant (HPBP)**, a **Seamless Steel Tube Plant (SSTP)** at Tiruchirappalli (adjacent to the HPBP), a **Boiler Auxiliaries Plant (BAP)** at Ranipet (in the state of Tamil Nadu), a Piping Centre (PC) at Chennai in Tamil Nadu and an Industrial Valve Plant (IVP) at Goindwal (in the Northern state of Punjab).

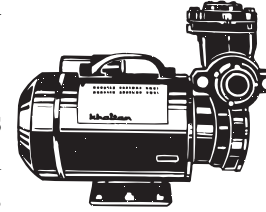


Technology Assimilation And Development

With judicious mix of in-house R&D and selective technology tie ups, **BHEL** Tiruchi has developed excellent Engineering and R&D capabilities.

For various products, technologies from international leaders in the field have been

absorbed and adopted to suit local conditions and customers specific needs. These products can now be designed to various international Codes and Standards. The capabilities have been accorded recognition by reputed international agencies.



World Class Facilities

BHEL Tiruchirapalli has equipped all its units with sophisticated world class machinery, which form the heart of the manufacturing system.

Quality Commitment

All the plants are equipped with state-of-the-art analytical, mechanical and non-destructive testing facilities. The Calibration Centre which is a National Accredited Laboratory, possesses the latest techniques and facilities in the field of calibration. The Seamless Steel Tube Plant has on-line ultrasonic, stray flux and eddy current test facilities to ensure highest quality production. The Boiler Auxiliaries Plant has a modern fan test station, flow model test facilities, test air heater, etc.

Quality Recognition

Adherence to quality has helped **BHEL** Tiruchi win quality recognition from National and International accreditation agencies.

Customer Services

At **BHEL** Tiruchi, every system is tuned towards serving the customer.

Certification

BHEL is the first state-owned company to acquire ISO 9000 certification during 1993

The Survey of India has probably become the first organisation in the Asia-Pacific region to use the "airborne laser terrain mapping" technology or part of a large-scale modernisation programme.

for all its operations. This is being successfully maintained through surveillance and recertification audits.

Global Links

The achievements have earned an international reputation for BHEL, Tiruchi. The plant has so far supplied boilers for around 1350 MW of power generation capacity to Malaysia, Libya, Iran, Egypt etc. BHEL's valves have been exported to Malta, Cyprus, Malaysia and Indonesia while pressure part equipment and spares have been exported to the USA. Boiler components have been supplied to China and Seamless Steel Tubes have been exported to Malaysia.

People Our Greatest Asset

Behind each one of these activities lies the commitment and dedication of the employees, technical experts, process engineers and skilled workers, whose contribution has attributed to penning this success story.

Surging Ahead.....

BHEL Tiruchirapalli stands for all that is cherished by every member of BHEL, where Quality is company-wide commitment. Dedication to technical excellence, development of state-of-the-art technology-suitable to customers specific needs and strict adherence to quality standards form the guiding principles while it surges ahead confidently into the future.

BHEL Bhopal Profile

Established in the late 50's, Bharat Heavy Electricals Limited (BHEL) is, today, a name to reckon with in the industrial world.It is the largest engineering and manufacturing

enterprise of its kind in India, and one of the leading international companies in the power field. BHEL offers over 180 products and provides systems and services to meet the needs of core sectors like:Power,Transmission, Industry, Transportation,Non-Conventional Energy Sources,Oil & Gas Exploration & Telecommunication . With 14 Manufacturing Divisions,a wide spread Regional Services Network , and Project Sites all over India & abroad and with an export presence in more than 50 countries, BHEL is truly India's Industrial ambassador to the world.All major Manufacturing,Erection and Service units of BHEL have been awarded ISO 9000 certification.

BHEL's Bhopal plant is the company's oldest unit with updated & state-of-the-art manufacturing facilities. The product range at Bhopal includes Hydro, Steam, Marine & Nuclear Turbines, Hydro & Turbo Generators, Transformers, Switchgears, Controlgears, Transportation Equipments,Capacitors,Bushings, Electrical Motors, Rectifiers,Oil Drilling Rig Equipments, Battery Powered Vehicles and Diesel Generating sets. This unit have been recommended for ISO-14001 certificate for its Environment Management System.

BHEL Bhopal's strength is it's employees.Company invests in Human Resources continuously and is alive to their needs. The plant's well established Township is spread over an area of around 20 sq kms and provides good Health facilities, Sports & Recreational Parks

(From the Web Site)



INNOVATIVE HR PRACTICES HELP BIOCON RETAIN STAFF

Thanuja B.M

Recent times have seen the word ‘attrition’ take so much of prominence in company profiles. Especially so in the IT industry with the average being over 20 percent. So it does come as a surprise that the general attrition rate at Biocon, the biotech company billed as the Infosys of BT sector is less than 3 percent. And the attrition rate among women is lower than men, even if it is very marginal. Interesting, right? Nirupa Bareja, group head (HR), Biocon says, “rate of attrition among women is marginally (0.1 percent) lower than men in the company. This is because of the stability factor, especially with married women who rarely leave us. Also our HR practices help us in retaining most of the employees.” Well, that is to be expected when you look at some of their innovative HR policies.



For instance, new recruits across all levels wear a badge that says—Hi I M New—helping other employees recognise them and make them feel at home. Biocon also has an in-house healthcare centre, where the annual health check-up is done by doctors of Clinigene, a Biocon subsidiary, helping the company bring down spending to 1/10th of the cost. From welcoming a new recruit with

a red rose and card to setting up a crèche for Biocon employee’s children, the company does it all and may be that’s why it has just won the Pune-based Indira Group of Institutes’ award for HR excellence.

“A good people assets is a huge investment and it pays. We don’t usually try and replace them for whatever reasons,” says Bareja.

Most of the people have been with the company for years, she says, adding, “the attrition is mainly seen in the less than 2 years category. This comprises a lot of entry level scientists.” When asked if monetary matters was the reason they quit, Bareja opines, “majority of our people who quit do so for higher studies but quite a few leave for monetary reasons. However, 90 percent of the people who leave want to come back. We welcome back the ones who go for studies but have a policy never to take back people overseas applying to Biocon, especially from the UK. “Last year, we had close to 30,000 voluntary applications, about 10 percent of them were from overseas,” she says, adding, in the last 4 months, Biocon has recruited more than 20 people from overseas.

“We do find their curriculum more broad-based but I do think they are no par with the people we campus recruit from the IITs and other institutes in India.” The Rs.550-crore company has grown from 60 employees a decade ago to 1,400 employees now.

(TNIE)

Maruti 800 sold Rs.4464 crores worth cars & Tata India another Rs.3,111 crores.

BIRLAS TRIGGERED INDUSTRIAL REVOLUTION IN INDIA

K.M.Devarajan

The name of Birla had enjoyed a reputation in India for several decades. The four Birla brothers, viz, Jugal Kishore Birla, Rameshwar Das Birla, Ghanshyam Das Birla and Brij Mohan Birla had promoted innumerable industrial, trading and financial enterprises throughout the length and breadth of India decades before the country became independent in 1947. They also owned/ran charitable trusts; temples; hospitals, educational institutions; museums, observatories, newspapers and journals and several Birla Houses which very few in the world could have created and also seen their successes during their own life times.

Of the four brothers Ghanshyam Das (GD Birla) became more famous. Born in a small village, Pilani, in Rajasthan in 1894 on a Rama Navami Day, G.D.Birla had selected a career in business as a trader and broker in gunny and Hessian in Calcutta at the age of 13, and had reached the pinnacle of success when he died in London in 1983.

When Gwalior Rayons set up a factory near Kozhikode in Kerala in the late fifties, G.D.Birla visited the site once, and an airstrip was constructed specially for his plane to land at Karipur. Decades later this airstrip was expanded to become the Calicut international airport. There were hundreds

of Birla factories around the world that were seldom seen by a Birla and yet each one of them had shown profit. This was because G.D.Birla had perfected a system of management and account control which was much superior to what was prevalent in India, and was beyond the comprehension of Harvard and Wharton.

The Birlas had incurred expenditure on numerous activities during the freedom movement, but without any returns, as directed by Mahatma Gandhi, Jawaharlal Nehru, Vallabh bhai Patel and a host of freedom fighters in the forefront.

Industrialisation received a big boost in India during the second five year plan (1956-61) and G.D.Birla had the vision to extend his business operations to other countries of the world, in spite of innumerable restrictions at home. In 1960 he set up the first Indian business abroad in Ethiopia near Addis Ababa called the Indo-Ethiopian Textile Mills. Since charity went along with his business, he had also established the biggest Women and Children hospital in Addis Ababa. The twentieth century history of Ethiopia was dominated by its Emperor. Haile Selassie, and GD Birla was accorded the honour due to a head of State during his few visits to Ethiopia until the military coup in that country in 1974.

Indian companies take-over overseas establishments in increasing numbers. Tata motors have taken over Korea's Daewoo commercial vehicles organization at a price of Rs.465 crores.

G.D.Birla had founded the Federation of Indian Chambers of Commerce and Industry (Ficci) in 1927 and had left behind strict norms for electing its President. In addition to him, his younger brother B.M.Birla, his eldest son L.N.Birla, his second son K.K.Birla and his grandson S.K.Birla had

all become the presidents of Ficci in subsequent years.

During the beginning decades the share of G.D.Birla in the Tatas was more than the Tatas themselves, but he had always adhered to his business ethics that "In the Tatas, the Tatas are supreme"

(The New Indian Express)

GODREJ - PATRIOTS TO THE CORE

A young man gave up law and took up lockmaking. Events in the Godrej Story are only the small visible pieces of a larger continuously emerging picture - a picture alive and palpable in the mind of one man : the young lawyer-turned-lockmaker - Ardeshir Godrej. He was the first Indian manufacturer to displace well entrenched foreign brands from the market. The word Godrej, etched into the metal of his locks, became a symbol of self reliance for the generations that followed. With each new product Ardeshir changed perceptions about industry in India. He produced the finest security equipment, and then stunned the world by creating a soap from vegetable oils. What started as a dream had become a movement. But it was left to another man to carry it forward, Ardeshir's brother, Pirojsha Godrej. Pirojsha Godrej laid the foundations for a throbbing enterprise at a sprawling industrial garden township outside Mumbai.

It was here that the Godrej vision took concrete shape. In later years, its extent and scope was expanded greatly by his sons - **Burjorji**

and Naoroji, Sohrabji. To this day, products that compete with the best in the world continue to come from the gates of Pirojshanagar. Godrej touches the lives of millions of Indians every-day. To them, it is a symbol of enduring ideals in a changing world. Every product, every new concept gives shape to their visions of tomorrow.

A vast swampy land, hilly and green... what others discarded, late **Pirojsha Godrej** bought and created into a garden township. **Late Pirojsha Godrej** the entrepreneur, the visionary, who established the Godrej Company wanted education for his worker's children. It was in the year 1955, that he was asked, "A school? Whatever for? We never went to school." But Pirojsha Godrej did not like the children whiling away their time on the streets. He visualized education as being the stepping stone to enlightenment and so he wanted them all to be educated, and good education it had to be, education for Life! This was the unpretentious birth of schools.

(From the Web Site)

The capital share market value of Tata group is Rs.1,03,125 crores. ONGC a government undertaking has shares worth Rs.99,395 crores. The top fifty in value include, TCS, Tata Motors, Tata Steel, Tata power, ICPL, Hindalco and Grasim.

INDIAN BRAINS BEHIND DRUG DEVELOPMENT INFO-TOOL

Anand Parthasarathy

Over 100 clinical trials of new drugs being conducted worldwide at any given time, by the world's largest pharmaceutical company, Pfizer, use a purpose-built information and trials tool developed in India.

The software suite—"Clinicopia"—is the flagship product of Info Pro Solutions, a Westlake Village, California-based company founded by medical systems analyst, Vikram Marla, in 1995. Core development of the product was done by Info Pro's team of engineers at the company's Bangalore-based centre.

It is claimed to be the world's first suite developed with multiple tools for the end-to-end supply chain required to conduct clinical trials that follow drug discoveries. Such trials involving over 1,000 patients could last from 3 to 7 years and cost between \$600 millions to \$1 billion, says Mr. Marla, Info Pro Solutions' president and CEO, now on a brief visit to India.

Talking to the press, he said the Clinicopia suite at present encompasses tools for supply chain management—the manufacturing, packing, distribution and reconciliation of drug doses—

as well as the forecasting system and a complex labeling utility.

It helps pharma companies to ensure that all the stringent regulatory requirements of the US Government's Food and Drug Administration (FDA) are met and the thousands of records of the trial are maintained.

Over the next 12 to 15 months [from Aug.'04], the Bangalore team will develop additional modules for the suite which will address process execution—monitoring the actual 'recipe' of the evolving drug—as well as providing some accountability muscle: that is, helping the distant trial sites to keep records of every drug dose administered.

Info Pro's India-based Country Manager, Shiva Kumar, added that the product would prove particularly useful for Indian pharma companies aiming for a global presence with their newly-discovered drugs and need FDA approval before they could address the huge American market.

The company has recently set in motion a Rs.3.5 crore investment at Bangalore to set up a permanent facility at Whitefield, on the outskirts of the city and effectively double its engineer strength by the year-end.

[The Hindu].



Telecom revenues of our country are expected to touch \$23-25 billion by 2007.

WORLD'S THIRD LARGEST ECONOMY

Toyota Kirloskar Auto Parts Private Limited have started a new gearbox manufacturing company at Bidadi-Karnataka. The plant will supply 1.6 lakh units to Toyota motor's assembly plants in SE Asia, South America and South Africa.

It will now make the complete manual transmission for Toyota's new multi-utility vehicle.

The finance minister of India, participating in the inaugural function said "I anticipate continued growth of the Indian Economy, which is among the few that could absorb large amounts of capital. Broad segments of the manufacturing sector are doing well with some out-performing the rest of the economy in 2003."

The Bidadi plant would supply parts to world-wide assembly lines.

This reflects the high-level of productivity Indian auto-companies have achieved. This is the first time an Indian auto-component-manufacturer is going to be a global source for a Tier I (direct supplies) component maker.



The strong local machining industry and the availability of a large number of skilled engineers helped cut costs at the plant. In the coming years, process costs could come down further.



INDIAN COMPANIES GO MULTINATIONAL

1. Ranbaxy, Infosys, Sundaram Fasteners and Bharat Forge have turned MNCS.
2. Manufacturing companies in the fields of software and pharmaceuticals have gone abroad setting up production facilities in foreign countries.
3. Sundaram Fasteners, Ajanta Clock and Videocon companies have manufacturing bases in China.
4. India has shifted from Agro-products such as tea to industrial products in export business.
5. Tata Motors have exported 1000's of Indica Cars to Britain.
6. Maruti has exported 57,175 crores in 2003-04.
7. The Reliance group exported Rs.11,510 crores worth of material / industrial products.
8. The export of common drugs to US from India has increased from 0.5% in 1998 to 3.5% in 2003. This is the achievement of Dr.Reddy's lab, and Ranbaxy.
9. More than 80% of the income from TCS and Ranboxy are in foreign exchange.
10. Mahendra and Mahendra tractors are sold in the US and its car Scorpio in Western Europe.
11. ITC's foreign sales have touched 1000 crores per annum. L & T has Rs.1500 crores worth foreign job orders.
12. BHEL exported high duty electrical goods to the tune of Rs.2087 crores in 2003-04.

(The New Indian Express)

THE INDIAN INSTITUTES OF TECHNOLOGY

The world famous Engineering, Technology, and Science Institutes better known as I.I.T.S. function at Kharagpur, Mumbai, Delhi, Chennai and Kanpur . Recently one more institute at Guwahati has been added to this prestigious list. The University of Roorkee, the 150 year old university of excellence, has been declared as an I.I.T.

The objectives of I.I.T.s include :

1. Offering instruction in engineering and applied sciences at a level comparable to the very best in the world.
2. Providing best facilities for post-graduate studies and research.
3. Providing leadership in curriculum planning and laboratory development both for its own staff and for teachers of other engineering institutions.
4. Developing programmes for faculty development both for its own staff and for teachers of other engineering institutions.
5. Developing close collaboration with industry through exchange of personnel and undertaking consultancy projects.
6. Developing strong collaboration links with other academic and research institutions in the country and abroad.
7. Anticipating the technological needs of India and to plan and prepare to cater to them.

All the seven I.I.T.s awards Bachelors', Masters' and Doctoral degrees. The I.I.T.s

have been making special efforts to recruit talented faculty on a world-wide basis and to admit bright students from all over the country by a careful selection process (Joint Entrance Examinations).

The Kanpur I.I.T. received technical assistance from a consortium of nine leading institutions of USA.

The Chennai I.I.T. benefited from an Indo-German collaboration for technical education.

The Mumbai I.I.T. went for technical help from the then U.S.S.R. and the Delhi I.I.T. from U.K. The I.I.T.S. have all been brought into existence by acts of parliament and they have been declared institutions of National Importance.

The quality of students, the quality of products that come out of the portals of I.I.T.s and the way the alumni have achieved eminence in their work places, have given the I.I.T.s a rare prestige all over the world. The role of I.I.T.s in National Development:-

1. Providing manpower and know-how to the country and in pursuit of research.
2. Contributing to all sectors of technological development.
3. Setting trends in education, research and teaching of engineering, technology and science.
4. Equipping hundreds of laboratories.
5. Large and beautiful campuses: high teacher-student ratio.

Bharat Forge has purchased Germany's CDP GmbH recently.

6. Associating very eminent persons with the I.I.T.s as governors, directors, staff and as ex-students.
7. Innovative programmes such as Dual degree programmes in Engineering, M.B.A. Master of Science by Research (M.S.) Port-management, Telecommunication, Aerospace Engineering, Bio-technology, Cryogenic engineering, I.T. Medical

Science and Technology, Mining Engineering, Ocean Engineering and Naval Architecture, Meteorology, Reliability Engineering, Rubber Technology, Rural Development, with great emphasis on social science.

(With inputs from Websites)



INDIAN INSTITUTE OF MANAGEMENT AHMADABAD

In just four decades IIMA has evolved from being India's premier management institute to a notable international school of management. It all started with Dr Vikram Sarabhai and a few other public spirited industrialists realizing that agriculture, education, health, transportation, population control, energy, and public administration were all vital elements in a growing society and that it was necessary to link these meaningfully with industry. The result was the creation of the Indian Institute of Management, Ahmedabad in 1961 as an autonomous body with the active collaboration of the Government of India, Government of Gujarat, and industry.

It was evident that to have a vision was not enough. Effective governance and quality education were seen as critical aspects. From the very start the founders introduced the concept of faculty governance: all members

of the faculty play an important role in administering the diverse academic and non-academic activities of the Institute. The empowerment of the faculty has been the propelling force behind the high quality of learning experience at IIMA. The Institute had initial collaboration with Harvard Business School. This collaboration greatly influenced the Institute's approach to education. Gradually it emerged as a confluence of the best of Eastern and Western values.

Mission & Objectives

Mission

IIMA's mission is to help India and other developing countries improve their managerial practices both in the private and in the public sectors, and adopt superior public policies. It seeks to do this through producing risk-taking leader-managers who will pioneer new managerial practices and

Colour television market in India is expected to grow from 7.5 million units in FY03 to about 8.5 million units in FY04.

set new standards; through producing teachers and researchers who will generate new ideas of International significance; and through purposeful consulting aimed at helping client organizations scale new heights.

Objectives

To provide learning facilities to men and women of exceptional calibre for pursuing careers in management or becoming teachers and researchers in different management fields.

To promote knowledge through research, both applied and conceptual.

To participate in and contribute to the formulation of public policy.

To enhance the decision-making skills and the administrative competence of practising managers and assist organizations to solve their managerial problems.

To collaborate with other institutions in India and abroad with a view to further professionalising management education and assisting in institution building, in a meaningful manner.

Evolution

1. Focus on the social purpose while pursuing excellence in management

2. Integration of key activities like teaching, research, and consultancy

3. Introduction of the 3-Tier Management Development Programme

1970s- The Decade of Growth

Introduction of new Management Development Programmes

1980s - The Decade of Diversification

Recognised as the premier management school throughout the country, the Institute expands its range and reach.

Formation of three new groups: The Industrial Policy Management Group, The International Management Group, and The Entrepreneurship Group

1990s - The Decade of Consolidation

Recognition as one of the top five business schools in Asia Pacific region

2000 - The Decade of Internationalisation

Internationalisation and growth are the key words of the Institute during this decade.

Exchange of faculty with international business schools.

Expansion of the campus to accommodate the Institute's international executive development programmes.

(From the Web Site)

TIFR

The Tata Institute of fundamental Research (TIFR) created in 1946 set the tone for Science Research in India. The TIFR initially sent scientists for training in the West, but with the aim that subsequently the institute would become self-sufficient in this respect. This was fulfilled, and eventually the TIFR provided the intellectual material for several areas including mathematics, theoretical physics and the country's atomic energy programme. The CSIR also worked for self-reliance by creating advanced laboratories in different fields all over the country. Today we have a large network of advanced research institutes, created by the various scientific departments of the government of India, the DAE, DRDI, DST, DOS, DSIR Department of Electronics (DOE), Department of Bio-Technology (DBT), etc.

SECTION - 4 India's Achievements

When the life-blood is strong and pure, no disease germ can live in that body. Our life-blood is spirituality. If it flows clear, if it flows strong and pure and vigorous, everything is right; political, social, any other material defects, even the poverty of the land, will all be cured if that blood is pure.

In India, social reform has to be preached by showing how much more spiritual a life the new system will bring; and politics has to be preached by showing how much it will improve the one thing that the nation wants –its spirituality.

-Swami Vivekananda





Thus spake Swami Vivekananda

Teach yourselves, teach everyone his/her real nature, call upon the sleeping soul and see how it awakes. Power will come, glory will come, goodness will come, purity will come, and everything that is excellent will come, when this sleeping soul is roused to self-conscious activity.

INDIA AID

Indian pharma companies can once more raise their heads in glory. As far as AIDS is concerned, they seem to be world-beaters. A three-year study of AIDS drugs, involving 1,147 patients, has concluded that the three-in-one pill made by Indian companies Ranbaxy and Cipla is better for new patients than any of those sold or planned by Western drug companies.

The study results have been published in the current issue of the prestigious “*New England Journal of Medicine*” and was reported by the *New York Times*. The successful cocktail, known in pharma circles as “two nukes plus a non-nuke” is the same one that WHO has been recommending in poor countries since 2002. The drug contains a combination of two nucleoside reverse transcriptase inhibitors (two nukes), AZT

and lamivudine, plus efavirenz, a non-nucleoside reverse transcriptase inhibitor (non-nuke).

In India, however, Nevirapine is used instead of Efavirenz.

Though a well-established drug, Nevirapine causes a serious rash in some patients, so generics makers are moving towards making compounds with efavirenz as well. The cocktail works by blocking reverse transcriptase, an enzyme that allows the RNA



in an AIDS virus to replicate itself inside the DNA of a healthy T cell, a trigger cell for the body’s immune system. Another triple-drug cocktail examined in the study, the only one made by any Western drug company, failed so badly that patients were taken off it. Now you know why Cipla and Ranbaxy stocks rule so high.

(The Sunday Express)



India closed fiscal 2003-04 with over 33.2 million mobile phone subscribers, more than 150% growth, thanks mainly to increased competition and steep fall in tariffs.

INDIAN-MADE SUCCESS

While Global pharmaceutical companies claim generic medicines are of unproven quality when they lobby against the use of these drugs in national public health programmes, research studies are increasingly undermining this argument. The latest example of scientific research validating the approach followed by the manufacturers of generics—mainly in India and Brazil—is a three-year-study conducted in the United States. It shows the effectiveness of using fixed-dose combination drugs in the treatment of patients with **the human immunovirus (HIV)**. The study, reported in the well-known *New England Journal of Medicine*, concludes that triple combination therapy (another term for the medication) is best suited to patients who are put on a drug regimen for the first time. The results of this research come at a time when the U.S. Government has been calling for fresh clinical trials to establish the safety of combination therapy, which has had the effect of slowing down the implementation of the World Health

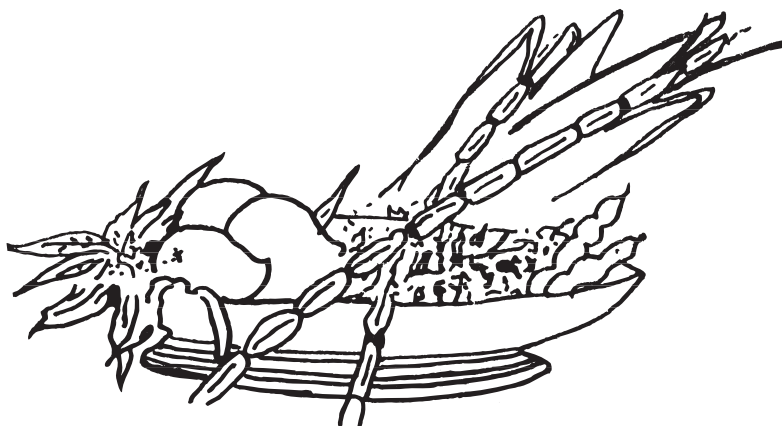
Organisation's ambitious global programme of treating three million HIV patients by 2005. The new research should, however, encourage the Government of India to push ahead and gradually expand the recently launched programme to provide free medication to HIV patients in selected States.



Anti-retroviral therapy does not cure people afflicted with the **Acquired Immune-Deficiency Syndrome (AIDS)**, but by keeping the virus under check it offers them the possibility of leading a normal life. Conventional treatment involves a daily in take of three

kinds of drugs twice a day. To ease the rigours of this drug regimen, Indian generic companies pioneered in 2001 the development of three-in-one drugs. The advantages of this fixed dose combination are, first, only two, not six, pills need to be consumed everyday, and, secondly, there is a tremendous saving in cost. The World Health Organisation estimates that combination therapy will cost less than half

the conventional medication. WHO, for these very reasons, recommended in 2002 the use of the fixed-dose cocktail in public health programmes in developing countries. Although the recommendation came after the international organization tested these combination drugs, this has not been enough for Washington. The argument is that adequate clinical trials have not been conducted to establish their safety. If the drugs fail the tests, so the argument goes, there is a strong likelihood of drug-resistant strains emerging with the use of the medicines developed by Indian companies.



The heated argument relates to the use in international treatment programmes of patented drugs manufactured by the global pharmacy multinationals and Indian-made generics. Under the WTO laws, since the present generation of anti-retrovirals can be produced as generics, there is no legal argument that can be made against their use in the developing countries. Instead, the

major first tried to block the implementation of a WTO declaration intended to make it easier to access the generic variants. After the possibilities in that avenue exhausted themselves, the companies turned to questioning the quality of the combination drugs. In both instances, the U.S. Government has spoken the language of the multinationals. The unfortunate aspect of the criticism of fixed-dose combination drugs is

that the markets in the advanced economies are not in danger of being swamped by the generics. It is the WHO's global AIDS treatment

programme—targeted at the 30 million patients in Africa and the Caribbean—that is in danger of failing. WHO is short of resources and the U.S., which has committed itself to providing \$15 billion for treatment programmes, will not release funds until the quality issue is settled. In short, the opposition to the use of cheaper drugs that are more easily taken is preventing the coverage of a larger population carrying HIV. (From An Editorial-The Hindu)



INDIAN SCIENTISTS EVOLVE DRAUGHT RESISTANT GREEN-GRAM

Pusa 1053, a draught resistant green gram has been evolved by the scientists of the Indian Agriculture Research Institute, New Delhi. It requires much less water and can resist disease with less quantities of pesticides than the conventional varieties. It also controls diabetic tendencies and is good for fatty persons.

CHEAP INDIAN AIDS PILL AS GOOD AS PRICELY BRANDS

A cheap three-in-one generic AIDS pill from India is just as good as more expensive branded medicines and should be widely used in developing countries, researchers said today (2/7/2004).

Lack of scientific evidence about the clinical effectiveness of such generic fixed-dose combinations has until now caused some international AIDS donors to refuse to fund their use.

But a team from the French National Agency for AIDS Research and Swiss Charity Medicines sans Frontieres said Cipla's triomune performed as well as brand drugs in the first open clinical study in a developing country.

They found that 80 percent of HIV-infected patients given the tablet twice a day had undetectable levels of virus in their blood after six months treatment.

Results of the study involving 60 patients in Cameroon, 92 percent of whom had full-blown AIDS, were published in the lancet medical journal.

“This generic fixed-dose combination (FDC) gives results comparable to those seen in the developed world using triple-drug therapy

comprising brand name drugs,” said study coordinator Eric Delaporte. “It is now no longer possible to raise scientific uncertainty as an objection to the widespread utilization of FDCs in the developing countries.” In addition to being cheaper, drugs like triomune-which contains Glaxo-Smithkline's lamivudine, Bristol-Myers Squibb's stavudine and Boehringer Ingelheim's nevirapine-are simpler to use since patients need to take only two pills a day.

As such, they have a major role to play in meeting the World Health Organisation's (WHO) goal of getting antiretrovirals to three million people in the developing world by the end of 2005, N.

Kumarasamy of the YRG centre for AIDS research and education in Chennai wrote in a commentary accompanying the research.

The WHO has judged triomune and another Indian combination called triviro, from Ranbaxy laboratories, to be safe and effective under a scheme that “prequalifies” them for use. But both products-which use compounds still covered by patents-remain controversial. Washington has barred groups receiving US governments funds from buying them, insisting only drugs approved by the food and drug administration be used (Reuters).



84.5 million tonne of milk is produced by our country every year making it the largest producer in the world.

CIPLA PATENTS AIDS DRUG TRIOMUNE

Ramnath Subbu

The Mumbai-based generic AIDS drugs manufacturer, Cipla, has successfully patented its three-in-one combination anti-retroviral (ARV) tablet, Triomune, in South Africa. This is a significant development given the demand for cheap generic AIDS drugs raised at the 15th International AIDS conference being held in Bangkok.

The company is also seeking patents in 17 other countries in Africa, which is the epicenter of the AIDS pandemic.

Amar Lulla, Joint Managing Director, Cipla, said, “The process of getting Triomune patented in these countries is underway. Cipla’s Triomune contains a fixed dose of three generic AIDS drugs, Nevirapine, Stavudine and Lamivudine.

Till a few weeks ago, there were apprehensions about the clinical effectiveness of the generic fixed-dose combinations. “The lancet’ medical journal of the U.K. says that a study found Triomune was equally effective in a study carried out over the six-month period on 60 AIDS patients.

[The Hindu]

‘FINEST’ CARPET FRAGMENT TO BE SOLD

The sad, frayed scrap of silk and wool is not big enough to make a mouse mat, never mind a carpet slipper. It is, however, a fabulous rarity, described by one expert as “a portion of the finest hand-knotted carpet in the history of the world.”

The claim is made by Steven Cohen, an authority on Indian carpets, who has examined the fabric, which was shut up in a drawer for nearly a century and kept as a family curiosity.

It will be auctioned at Bonhams in London (April 2004), estimated to fetch £6,000-8,000. “It has been almost impossible to value,” said Mark Dance, oriental carpet expert at Bonhams.

“Nothing like it has been sold in the memory of our experts. On the one hand we have only such a tiny piece of it, on the other it is a world-class object of museum quality. The family is happy with the estimate, and we shall see—it may be that specialist collectors will pay a lot more for it.”

The fragment survived as a souvenir of the owners’ great-grandfather, a London carpet dealer. It is a tiny part of a Mughal carpet made around 1630 in India, similar to a prayer mat but probably used for decoration, possibly hung behind an emperor’s throne.

Other fragments of the same small carpet survive in museums, the largest in the Metropolitan Museum, New York and other scraps in Boston and Kuwait. (The Hindu)

TURNING TO NATURE

Nowadays, farmers consider bio-degradable waste as marvelous manure. They also find development of herbal farms as a lucrative venture.

A group of youths have ventured into the preparation of bio-manure by blending bio-degradable waste with herbal ingredients.

The bio-manure manufactured by them using solid waste from the Sirkazhi Municipal limits in Nagapattinam district and herbal extracts was the centre of attraction at the two-day national seminar-cum-exhibition on 'Cultivation of medicinal plants and manufacture of herbal products', sponsored by Sri Sankara College of Ayurveda, Tiruchi. A research scholar A.Sathyanarayanan, who

has taken up the venture, said excessive use of pesticides during the last three decades had spoiled the texture and fertility of the soil.

Mr.Sathyanarayanan, who represented M/s.Kazhi Bio-Tech from Nagapattinam, said they manufactured crop-specific boosters such as 'paddy booster', 'fruit trees booster', 'nursery booster' and 'plant booster'. A snake-like bark brought by K.Chakkaraiyah, founder of the 'Gandhi Rural Action Movement' at Narthamalai in Pudukottai district was the cynosure of all eyes among the exhibits.

From M.Balaganessan in Tiruchi
(The Hindu)



COIR BOARD TO INVEST

The Coir Board will invest Rs.3,000 crore over the next five years with focus on the medium-scale sector, said C.Chandran, chairman, Coir Board, addressing the press.

The vision document also plans to diversify and expand application areas of coir for building materials, geotextiles in addition to traditional applications.

Research and development is to focus on technological innovations in products and processes and husk collection banks headed by self-help groups like *Stree-sakthi* and *Kutumba-shree* will be set up for collection and supply of husk to the extraction units.

The integrated development strategy will lay emphasis on expanding and strengthening fibre extraction units, pith processing including pith blocks and composting units, yarn spinning, coir mattress, coir composite and flood blanket units. The document also provides for doubling the employment growth in the sector from the present five lakh to 10 lakh in the next five years (2005-09).

The value of products in all coir producing states will be enhanced to over Rs.25,000 crore. The coir sector development is to be elevated as a 'Coir Mission Development programme' by the Planning Commission.

(The New Indian Express)

India exports 992,000 tonne of shell eggs and 1,775 tonne of dried eggs every year.

MYSORE SILK GETS PATENT

The government has announced that Mysore silk has been patented and a silk saree weaved in any part of the world other than Karnataka cannot be called Mysore silk.

“Mysore silk has been patented and its intellectual property has been protected with the accordence of the geographical indication (GI) tag,” Union Patents, Designs and Trade-marks Controller-General S N Maity told reporters in Bangalore.

“The GI mark will serve as an identifier of the area or origin of the product-in this case Mysore-and let customer know that its unique quality is attributable to a particular region,” he said. Besides Mysore silk, Maity said, “The Centre is working on according the GI tag to Kolhapuri chappals and Kancheepuram silks in the next few weeks.”



“Though India is rich in its geographical resources, ironically, the country has received the tag for only eight products, while Europe has more than 500 products with GI protection. Compared to rest of the world, we are extremely backward when it comes to registration of GIs,” Maity said.

Darjeeling tea, Pochampalli sarees, Salem fabric, Goa fenny, Solapur fabric, Pavitra Modaram (ring) from Payyanur in Kerala, Chanderi silks and Aranmulai Kannadi (mirror) in Kerala are the eight products which has earned the GI tag. He said applications received for patent in the country were 13,000. (PTI)

India exported 81,500 tonnes of chillies (Rs.355.11 crores) 16,700 tonnes of pepper (valued at Rs.143.50 crores) 5000 tonnes of ginger (Rs.23.40 crores) 690 tonnes of cardamom (Rs.33.01 crores) spice oil and oleoresins (4,750 tonnes valued at Rs.372.06 crores) and turmeric (34,500 tonnes valued at Rs.127.52 crores). India is a traditional world leader in spices and its total spice export is 2,46,566 tonnes priced at Rs.1,905.08 crores (per year).

BANKURA LANTERNS TO DISPEL DARKNESS IN AFRICA

Sakyasen Mitra

Bankura, is all set to get international industrial recognition.

The district will soon be lighting up nations in Africa through indigenous homemade lanterns. The lantern manufacturers of Bankura have received orders from countries like Nigeria, Mozambique, Senegal, Sudan, Ghana, etc. The entire lantern manufacturing industry in the district has received a lifeline because of these orders which run into quite a few crores of rupees.

The lanterns of Bankura have a special characteristic. They consume less fuel while producing brighter light. As most of the African nations are quite poor, the governments there have decided to supply these lanterns to the villagers. The lanterns are being sent to these countries through an organization called Exodus.

Says Tapan Kumar Hore, the director of Exodus: “Basically, we supply various kinds of products to government agencies in Africa. When the enquiry for lanterns came in, we sent them a few samples from Bankura. They liked the product and placed huge orders. Already 19,000 pieces have been sent to Mozambique and Senegal. Sudan has placed orders for

10,000 pieces while Ghana and Nigeria have asked whether we will be able to supply 50,000 pieces to both the nations”.

It was sheer luck that launched the lanterns of Bankura in the international market. A group of French dignitaries had gone on a sightseeing tour to the district. Amongst them was an official of the French Consulate in Mozambique. He saw roadside vendors selling the lanterns and took a fancy to them. On his return to Mozambique, he urged the government to buy the lanterns. Once the first lot reached Mozambique, word about the utility of the product started spreading with the speed of light. And the other African countries started showing their interest to acquire these homemade lanterns. Families depending on the sale of the lanterns for their daily earning are also happy at the profit that they are making. Hore stated, “The lanterns fetch a maximum profit of Rs.2.5 in the local market. However, the manufactures have made a profit of Rs.10-15 on each unit that they have sold to the foreign buyers through us. The result has been that the entire industry is on the upswing.



INDIA TO BECOME MAJOR DRIVER OF GROWTH: FM

Asserting that the government will continue reforms with a human face with thrust on health, education and employment, the Finance Minister has said India is poised to become a major driver of global growth in the medium term along with China and emerging Asia.

NEW DRUG

The Madras university and Bharathidasan University, Tiruchi entered into an MoU with the Chennai based ABL Biotechnologies Limited, a pharmaceutical company, to market a potential drug preparation developed jointly by the varsities.

Thyagarajan and G.Subramanian, former Director, National Facility for Marine Cyanobacteria attached to the Bharathidasan varsity had demonstrated the anti-viral properties of the marine blue green alga

called Phormidium Species against HIV, Herpes Simplex Virus and Hepatitis B Virus.

Bharathidasan varsity Vice-Chancellor C.Thangamuthu described the MoU as "historic" in the era of globalisation of services. ABL Biotechnologies managing director Isaac handed over a cheque for Rs five lakh to the varsities as a first instalment for transfer of technology. The firm will conduct animal and in vivo toxicology studies before marketing the drug. The commercialisation process could take three years.

'INDIA SHOULD TAP DAIRY MARKETS IN PAKISTAN, SRI LANKA'

India should capitalise on its strategic location to capture the dairy markets of neighbouring countries such as Pakistan and Sri Lanka, according to the Chairman of the Gujarat Cooperative Milk marketing Federation, Verghese Kurien.

Moreover, India is occupying the top position in milk production at the international level with a good network of rural milk societies. This should help the country make a foray into the neighbouring countries.

Already, the National Dairy Development Board had planned a Rs.10 crore plant in Sri Lanka, which was now importing 53,000 tonnes of milk powder annually.

"It is our desire to build, operate and gift the plant to Sri Lanka," said Dr.Kurien. Till the plant became operational, India would

supply milk to Sri Lanka, hopefully through the Tamil Nadu Cooperative

Milk Producers' Federation, which is close to the island.

Dr.Kurien regretted that it was unfortunate that the cooperative movement was not getting due respect in the country.

The secret of Anand Milk Union Limited (AMUL) was its marketing strategy.

Amul with an annual turnover of Rs.2,500 crores was spending Rs.25 crores annually for advertising its products. One should name its products and sell it under a brand name. That was one reason for the success of Amul, he said. (The Hindu)



HLL TO TAKE *AYUSH* ACROSS THE SEAS

Hindustan Lever Ltd is planning to take its *Ayush* therapy centres global sometime next year (2005). Vipul Chawla, business head, consumer healthcare, HLL said “we are looking at centres in Stockholm, Singapore, Dubai and Kuala Lumpur to begin with. These centres will spread the message of authentic *ayurveda* across the globe,” he added.

On being asked about the time-frame for these centres to come up, Chawla said it would happen in 2005. “This year our focus would be to build the *Ayush* brand within the country. As part of this we will

expand the basket of products under *Ayush*, set up more therapy centres and also use its over 2,50,000 strong HLL Network direct marketing setup to promote healthcare products under *Ayush*. We plan to roll out child and adult nutritional supplements under *Ayush*,” he added.



For the present the company is looking at spreading its wings to more Tier II cities. “We would like to

have at least 100 *Ayush* therapy centres over the next two years.

(TNIE)

INDIAN RESEARCHERS LEAD WORLD’S FIRST SEARCH TOOL FOR 3-D SHAPES

Looking for the proverbial needle in a digital haystack just became easier: A project at Purdue University, Indiana (US) led by Indian mechanical and computer engineers, has created the world’s first shape based 3 dimensional parts search engine. A paper detailing the “3-D Engineering Shape Search System” (3D-ESSS) was presented in April 2004, at the 20th International

Conference on Data Engineering at Boston, Massachusetts, jointly by project head Karthik Ramani, Professor in Mechanical Engineering and Director of the Purdue Research and Education Centre for Information Systems in Engineering (PRECISE), his doctoral student, Kuiyang Lou, and Sunil Prabhakar, who is Assistant Professor of Computer Science at the same university.

Many Indian Business houses are listed in the prestigious NYSE, NASHTAQ and are traded by top investors of the world.

Much like a precocious child prodigy, the Indian jewellery export industry has covered all the milestones from crawling to running in just over a decade. But now, its steady sprinting, changing to giant leaps has become the cynosure of all eyes in the world market. From being a mere supplier of negligible value and importance in early 1990's to being a contender for World title in 2004, India has come a long way.

World title and India, well take a look at the statistics. Last year (2003), India's gems and jewellery exports grew by 31 percent reaching the \$12 billion mark from \$8.6 billion the previous year. And diamonds accounted for \$8.62 billion (72 percent) of this figure, gold jewellery contribution 21 percent and coloured gemstones and others contributing 2 and 5 percent respectively. The industry is the second highest foreign exchange earner accounting for 17 percent of total exports. The Gem & Jewellery Export Promotion Council (GJEPC) has set a target of reaching \$16 billion by 2007 and

DAZZLING INDIA

B.M.Thanuja



develop India as "the only one-stop-shop" for gems and jewellery.

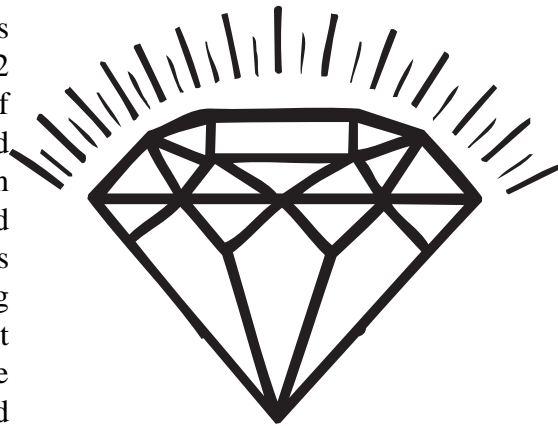
While the world has been writing about the phenomenal exports, there is yet another saga unfolding inside the jewellery industry. This is the exponentially expanding manufacturing base.

There are around 1,000 factories all over India currently making all kinds of jewellery, says Sanjay Kothari, Chairman, GJEPC. And around 300 are in Mumbai. The Special Economic Zone (SEEPZ) area in Mumbai has 150 factories with more than 300 more in the pipeline over next two years. The sheer volume of jewellery which the new facilities

will add are bound to thrust India to emerge as a mature player with a redefined position in the world packing order. Much of the earlier growth has been in the SEEPZ area, but 60 new factories are coming up in the newly expanded portion of the zone this year

(2004). And the growth on the periphery of the zone has also been expanding. It's not just the sheer number of factories coming up but the improved quality, methods and manufacturing processes that they are using that is bringing about the changes.

(TNIE)



Indian Car sales market is expected to touch the 1 million mark per year 2007

INDIA'S LARGEST WIND TURBINE COMMISSIONED

Neg Micon India has commissioned the country's largest, tallest and most powerful wind turbine at Kongalnagaram near Pollachi.

The NM 82/1650 wind turbine is suitable for low and medium wind regimes and will work all through the year, according to company managing director Ramesh Kymal.

Speaking to media persons, he added that the rotor diameter of the turbine was 82 m and hub height 78 m, making it the largest turbine installed in the country both in terms of capacity and height.

The large rotor and a more powerful generator would enable the turbine to

reach a generation level that would outperform the existing turbines, he added.

While the existing 750 kw wind turbine produced about 18 lakh units of power per year, the new turbine could produce 55 to 60 lakh units annually, he said. He said they had signed a contract with the TNEB for the purchase of all the power produced from the wind mill at a cost of Rs.2.70 per unit.

Kongalnagaram had outstanding potential for development of wind power projects and the company had commissioned the earlier version of wind turbines to produce 60 mw power in a record span of six months, he added.



NEED FOR BASIC SCIENCES

Responding to Priyank Desai of Ahmedabad, Prof. Kalam chided parents for forcing even students with an aptitude for pure science into professional courses. "Parents have no business stopping their children from studying what they love...they should encourage their children and they will shine," he said. "A physicist can do any job but not an engineer," he added.

The Archaeological Survey of India (ASI) team, which is staking out the origins of the mythical Saraswati river in the foothills of the Shivaliks, has struck gold with the unearthing of an exciting find at Adi Badri site, 40 kms north of the Yamunanagar district in Haryana. Extensive excavation has yielded a 300 A.D. Kushan site—and speculation that this may be the spot where the river that disappeared began flowing aeons ago. The finds include a monastery, a Buddha statue, pottery, pieces of carved slabs, a meditation hall, verandah and several artefacts.

TALLEST WIND TURBINE GENERATOR INSTALLED NEAR KOODANKULAM

The biggest and tallest ever wind turbine generator (WTG) in Asia, capable of producing 2,000 KW (2 MW) power, has been installed at Chettikulam near Koodankulam in Tirunelveli district in Tamil Nadu and it will be commissioned in the near future.

While the common WTGs installed at Muppandal and its surroundings here are 25-75 meters in height to produce power ranging from 225 to 1,250 KW, this one in 80 metres high and the long rotors have a diameter of 88 metres. When the rotors were taken to the site by road recently, some curves on the route were altered to ensure hassle-free and safe movement.

The Rs.10-11 crore WTG has been designed and developed by the Pune-based Suzlon Energy Limited, which has manufacturing units in Pondicherry, Diu and Daman. This company has exported 24 wind turbine generators to the United States for being installed in California.

“We’ll start the trial run in the near future. If all our targets are achieved during the test period of one year, we’ll go for the installation of more 2 MW WTGs in some of the new places in (near by) Radhapuram

taluk. Since wind velocity in this area is optimum—12 to 14 metres per second – for power generation, we are hopeful that we can erect more mega WTGs here to take the wind power generation of Tamil Nadu to greater heights,” S.Jayakumaran, assistant general manager (Projects), Suzlon Developers Limited, told the press.

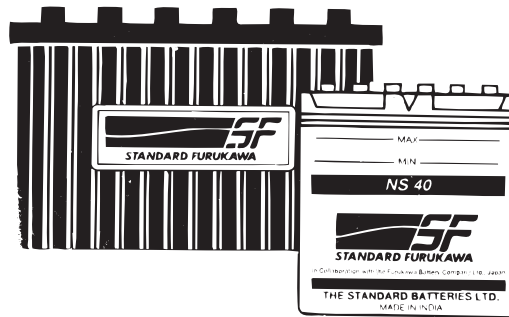
At Muppandal and surroundings, about 2,430 WTGs are functioning to generate 897.95 MW, while 1,479 WGs in Coimbatore contribute 467.77 MW to the

State grid. Though the new places around M u p p a n d a l , Radhapuram and Valliyoor are being identified, the wind farm companies are afraid that a slowdown in augmenting the

number of sub-stations in this area to evacuate wind power to other places may hamper the installation of new WTGs after March 2005.

A top TNEB official said the official machinery could not match the rapid installation of WTGs here. A proposal to add 200 sub-stations in this region was sent to the Government and the official nod was expected anytime.

[The Hindu]



Indian companies have bagged around 200 clean development mechanism projects worth \$235 million under the Kyoto Protocol.

WINDS OF CHANGE

Madhavi Ravikumar

A well-paid job in Kongalnagaram, his native village, was not something 21-year-old Jeyachandran thought would ever happen. The scepticism of the diploma holder in engineering was not without reasons.

Vast stretches of barren land, where farmers never tire looking upto the sky for rains, his was a village that displayed little signs of development a year ago. A long-distance phone call was a luxury, while buses took their sweet time to manoeuvre the dusty tracks before reaching Kongalnagaram, about 100 kms from the textile city of Coimbatore in Tamil Nadu.

Today, it's a driver of India's image as 'wind superpower' and in the process has generated decent jobs for hundreds. Take Jeyachandran for instance, the son of a roadside hotel owner, is now a maintenance engineer in his hometown. There is much more to wind energy than the turbines that serve as a popular backdrop for romantic film songs.

Says Dr.S.Renganarayanan, Director, Centre for New and Renewable Sources of Energy, Anna University, "Wind energy is eco-friendly, economical and renewable. It has potential to become a mainstay of the economic development of any country."

Wind power is particularly significant to India with its never-ending demand for

electricity. The country, as per estimates, will require 2,40,000 mega watt (MW) of power everyday by 2012, warranting installation of new power projects with a capacity of 10,000 MW each year.

"Although power generation is a thrust area, the installed capacity of 1,07,972 MW (as on March, 2003), it still is not sufficient to cope with the demand. Wind power projects with relatively low gestation periods, reduced transmission and distribution cost could fill this gap," says Renganarayanan.

"We are faced with potentially the most catastrophic ecological disaster," says Ramesh Kymal, Managing Director of NEG Micon India, a leader in wind energy equipment. The company, which began its operation in India with installation of 225—250 KW turbines, now has capacity to manufacture turbines from 750 KW to 1,650 KW in India. Its parent company based in Denmark has turbines upto 4,2000 KW.

"If we don't take urgent action to curb the rising greenhouse gas emissions, considerable economic, ecological, social and agriculture instability will result," according to Kymal.

"With declining cost and increase in the scale of wind-turbine manufacturing, wind energy promises to become a major power source globally in the first few decades of this millennium," adds Kymal.

TIT BITS

Film producer/director Rakesh Roshan, whose box office hit Kaho Na Pyar Hai lectched him 92 awards, has approached the Guinness Book of Workd Records for honours.

Harnessing Prosperity

The advantages of wind power are many. The most prominent is the employment and income generation potential of the projects. Communities near wind farms are finding out that wind can be a good neighbour. Wind farms, most of which are situated in remote rural locations, have been able to bring about a sea change in the socio-economic conditions of those areas.

Tapping wind power means construction and maintenance job, it means leasing rights and extra money for farmers struggling to make it on agriculture alone. "In most cases, the farmers can grow crops right up to the base of a windmill. The land foot-print has a small impact on total farm acreage," says Kymal.

A survey by the GRD College of Science in Coimbatore reveals that the 812 MW installed wind power capacity in Tamil Nadu provided direct employment to around 4000 to 5000 persons as 'wind electric generator operators' and 3000 to 4000 persons as security guards. Many in the neighbourhood also get temporary employment during installation of the wind-turbine.

The benefits come in different forms. "We made school furniture using, packaging wood that come with the imported equipment and supplied them to schools in Kongalnagaram," says Kymal. For this, G.Kannan, the school headmaster is grateful.

"I never thought my students could enjoy this facility ever."


The Green Zone

Subhash Tiwari, an environmental scientist, says, "There is growing awareness of the hazards of local, regional and global carbondi-oxide (CO2) emissions from fossil fuels based power generations."

Wind-turbines are extremely effective at reducing CO2 emissions. A single 750 kilowatt- wind-turbine produces roughly two million hours (KWh) of electricity annually.

Driving the popularity of wind power are emerging concepts such as Clean Development Mechanism and Carbon Credits. The two refer to projects and processes that help reduce emissions and are hence rewarded for the same. When energy is generated from non-polluting sources it becomes eligible for Carbon Emission Ratings. Such credits referred to as Carbon Credits are tradable in the international market.

The need of the hour, according to experts, should be on high capacity machines and low wind regime turbines. By improving the infrastructure and establishing a long-term policy the government can accelerate the growth of this Industry. The Centre should come out with a price support mechanism and create a stable regulatory environment.(TNIE)

- 
- India ranks fifth amongst the wind-energy-producing countries of the world after Germany, Spain, USA and Denmark.
 - Estimated potential is around 45,000 MW.
 - Wind farms have been installed in more than 9 states.
 - A National Renewable Energy Policy, now under consideration, envisages 10 percent of total installed capacity through Renewables.
 - By 2012, projected wind power installation is likely to be around 5000 MW.

SOFTWARE EXPORTS GROW 30 PERCENT IN FY-04

Kiran Karnik

Software and service exports from India grew 30.5 percent year-on-year in 2003-04 to \$12.5 billion and are expected to retain the same growth rates in this fiscal, according to industry body Nasscom.

The growth in software and service exports in 2003-04 was higher than Nasscom estimates, which had predicted 26-28 percent growth for the last fiscal. Of the total software and service exports, IT services and technology products and services grew by 25 percent at \$8.9 billion against the earlier Nasscom projections of 17 percent growth. However, the growth in the ITES-BPO segment in 2003-04 by 46 percent at \$3.6 billion just managed to meet the target.

“This (2003-04) has been the best year after the IT slowdown... Spending in the US is back on its feet. Every segment, including the small and medium companies and start-ups witnessed strong growth. Apart from traditional markets of US and UK, strong traction was witnessed in Japan, Germany and France,” Nasscom president Kiran Karnik said.

The overall software and services market in India grew by 28.2 percent at \$15.9 billion against \$12.4 billion in 2002-03.

According to Nasscom, the overall software and services market in India will breach the \$20 billion mark in 2004-05 with exports growing 30-32 percent to \$16.3 billion. The

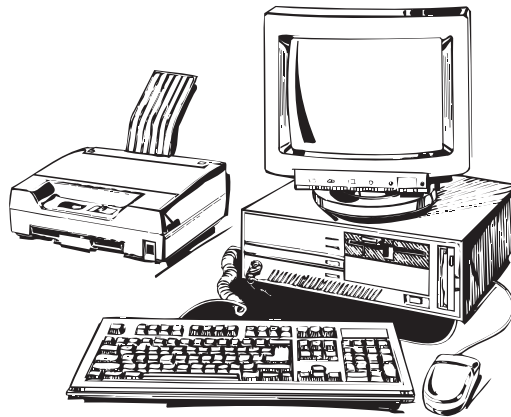
IT services and products exports are expected to touch \$11.2 billion while exports in ITES-BPO segment will be \$5.1 billion.

America continued to be primary market for Indian software exports, accounting for 70 percent of the revenues, followed by the UK with

15 percent.

Nasscom said Indian software and service companies are exporting to 112 countries around the world and are exploring new markets. “The year 2004-05 is expected to witness an increase in the number of million dollar customers and mid-to-large range deals flowing into the country. At the same time, the industry players are also building global delivery capabilities, recruitment in international markets and engaging in merger and acquisition activities,” Karnik said.

(The Hindu)



Medical tourism market in India is expected to touch Rs.10,000 crore by

FASTEST ACADEMIC COMPUTER TO VIE FOR TOP SPOT

Anand Parthasarathy

India's fastest academic computer—a 'teraflop' Linux cluster—has been commissioned at the Institute of Mathematical Sciences (IMSc), in Chennai—and come June, will vie for a ranking in the global "Top 500" list of the world's fastest supercomputers.

The configuration was put together by a team of students and teachers of the institute led by N.D.Hari Dass, as well as engineers from two Indian computer companies—Netweb Technologies from Delhi and the Mumbai-based Summation Enterprises and the two hardware suppliers, Super micro and Dolphinics.

Stringing together 144 separate computers, based on dual Intel-Xeon processor chips and running the Open Source Red hat 8.0 version of Linux, the researchers managed to clock up a peak computing speed of 1,382 teraflops (that is 1,382 billion calculations per second). The sustained performance, which is the basis of ranking, was 951.7 gigaflops or 951 billion floating point operations, using the internationally accepted benchmarking programme called Linpack.

The cluster supercomputer—so called because it is really a cluster of hundreds of identical computers, rather than a single behemoth—was commissioned last week, with just two days to spare for the deadline to be considered for the Top 500 rating that will be announced at the International Supercomputer Conference, in Heidelberg, Germany, on June 22.



Its creators have named their supercomputer, Kabru, after one of the tall peaks as yet unclimbed, in the Himalayas, but not the tallest. Speaking to the press, Prof.Hari Dass explained that the machine would be used for the project: "Indian Lattice Gauge Theory Initiative" of the institute

to simulate the properties of protons, neutrons and other fundamental particles.

He added: "One of the great challenges in Theoretical Physics today is to understand what constitutes particles. It is believed that protons and neutrons are made up of what are called "Quarks". This is an exceptionally hard theory to do calculations in and Lattice Gauge Theory is a way of simulating this problem on computers. Most problems need months to years, even on teraflop-level supercomputers."

4,80,000 tonne of cauliflower was produced by our country in 2002-03 as against world production of 12,725,000 tonne.

The institute, an autonomous one doing fundamental research in frontier areas of mathematical sciences, is largely funded by the Department of Atomic energy (DAE). It cooperates with the Tata Institute of Fundamental Research (TIFR) in Mumbai and the Kolkata based Saha Institute of Nuclear Physics (SINP) on the Lattice Gauge work. The DAE had made a grant of Rs.3.5 crores to the institute out of which the Linux cluster was realized at a cost of about Rs.2.5 crores—a fraction of what supercomputers of this pedigree would cost if one were to import it.

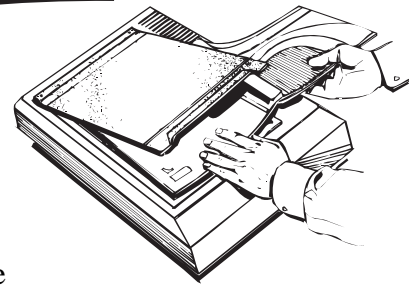
If it makes the climb to the Top 500, it will be the third India-based supercomputer in the list (www.top500.org/list/2003/11): The

Centre for Development of Advanced Computing (C-DAC)-developed ‘Param padma’ entered the list a year ago at number 258 with a sustained 594.2 gigaflops (1132.8 giga flops peak) while the chipmaker, Intel’s Bangalore-based development centre reached the 105th rank with an IBM cluster based on its own Xeon processors clocking a sustained 1105.96 gigaflops (peak:2755.2 g.flops).

The world’s fastest supercomputer since 2002 has been the Japanese NEC Earth Simulator at 35860 gigaflops (40960 g.flops peak).

INDIA-INSPIRED LOW-COST PC MAY BE A GLOBAL FIRST

Anand Parthasarathy



A joint initiative of the International Institute of Information Technology (IIIT) based at Hyderabad and the Carnegie Mellon University (CMU), in the U.S., with the support of the Andhra Pradesh Government, may see the emergence of a radically new type of Personal Computer, optimized to serve millions of rural people on the wrong side of the so-called “digital divide.”

Conceived by Raj Reddy, Professor of Computer Science and founder-director of

the internationally-known Robotics Institute at CMU, the low-cost PC is driven by a television-type remote, doubles as a television set, and can be used to view movies on a DVD player, make cheap telephones calls riding the Internet—and even serve as a video conferencing tool.

All this in addition to normal PC functions many of which can be accessed by voice commands in a local language.

(The Hindu)

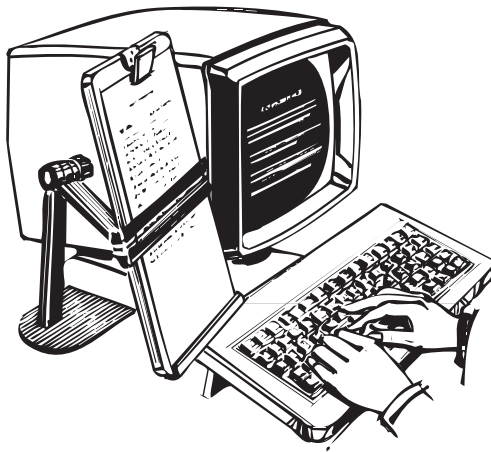
Tata Steel has won the honour of “Giant organization with Social commitment” recently. It is the first organizations to be given the “Social Accountability Standard SA 8000”

INDIAN STUDENTS TO VIE FOR GLOBAL SOFTWARE PRIZE

Anand Parthasarathy

A quartet of engineering students from Mumbai has emerged national champions in a software design competition sponsored by Microsoft, which clears the way for a bash at the global-level award worth \$25,000.

Their product called “Gurukul: The Virtual University” came out tops in the national zonal finals held in Chennai, beating entries from Bangalore and Greater Noida near Delhi. Before a cheering crowd of 2,000 local students of Information Technology, in the packed indoor stadium, the students from the Vivekananda Education Society’s Institute of Education (VESIT)—Tejas Shah, Abhijit Akhawe, Jyotsana Rathore and Sailesh Ganesh—demonstrated their package which allows collegians to “attend” lectures without having to be physically present in the classroom, an idea that obviously appealed to the like-minded audience. They demonstrated how this could be done using video streaming from the class—and additional feeds from other colleges, which allowed students to listen to the best teachers in town, not just in their institution.



Other modules developed in Microsoft’s Net (“Dot Net”) environment—a requisite of the contest—featured advanced information search programmes that provided results based on an idea rather than a string of index words. The system used the burgeoning technology of peer-to-peer “grid computing” – linking hundreds of ordinary PCs to create a powerful common resource.

In an interesting reflection of what concerns today’s young “techie” bring to the classroom, the two runner-up entries from

Bangalore’s Viswesvaraya Institute of Technology and Noida’s IEC College of Engineering, also featured educational grid systems.

Dilip Mistry, Microsoft’s Director (Net and Developer Evangelism), told the Hindu that the winning team would go to Sao Paulo, Brazil, to compete for the “Imagine Cup” in July this year [2004].

In last year’s maiden competition at Barcelona, another Mumbai-based team took the second place with a healthcare application, while the third spot from Singapore featured an e-shopping tool, also from a team of Indian-origin students.

[The Hindu]

Sunflower production of our country during the current season is likely to be 10.6 lakh tonne.

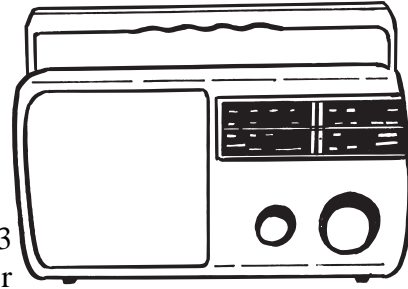
THEY'RE TURNING ON THOSE TAGS!

Anand Parthasarathy

Quietly, with hardly a technical hiccup or two, the world moved today into a new era of electronic tagging. Major international supermarket chains are expected to lead the trend, whereby large packing cases—and ultimately individual consumer goods—will be affixed with tiny chips with built-in radio antennas that can be tracked in their thousands from afar. For starters, it will render shoplifting virtually impossible: Slip an item into your pocket; leave a shop without paying for it—and it will begin beeping an alarm somewhere.

The technology is called Radio Frequency identification (RFID)—and the global kick-start into a new tagged age has come from Wal-Mart, the big U.S. supermarket chain which has implemented selective radio tagging today and has asked its top 100 suppliers to tag their consignments—if they want to do business with it. Joining Wal-Mart in the radio tagging race are a number of fast moving consumer goods (FMCGs) players who all have major India-based sales operations: Johnson & Johnson, Gillette, Nestle, Procter & Gamble and Unilever. While most of these companies will initially tag cases and pallets—not individual items—a few have decided to go the next step and affix radio tags on every retail unit: Gillette has already experimented by putting tags on its higher-priced shaving products, like the

Mach 3
razor



pack—though it claims its focus is on preventing theft within its own warehouses. The *New York Times* says, that printer giant Hewlett Packard has decided to tag individual printers and scanners and has already made a start with a few models.

Metro, the German hyper market chain, which opened its India operation in Bangalore in recent months is another early RFID player and is already testing the technology at home. So are the U.K. based stores, Sainsburys, Woolworths, Marks & Spencers and Tesco. Major knitted garment makers in Tirupur near Coimbatore are known to be gearing up to radio-tag their shipments in case this is mandated by their customers.

India's Information Technology players having not been sitting around idly, while radio tagging morphs from tentative technology to industry standard: Enquiries in recent weeks here in India's Silicon City reveal that a number of players are at the cutting edge of RFID technology and are well poised to ride the wave once its use snowballs:

Infosys announced in January that it had put together a special group to develop RFID applications for its clients.

The Khadi and Village Industries Commission is spending Rs.90 crore on modernising its over 7,050 outlets in the country.

Net Kraft, another Bangalore based technology company, has created an RFID-based application for one of the world's biggest luxury travel goods retailers to help them to improve their loyalty programme. The chip, embedded in the loyalty card of major customers, will alert the shop assistant as soon as they enter the store and enable personalized service.

SAP India is creating RFID-based supply chain management tools for a number of its corporate customers here.

The Hyderabad-based Bartronics, well known as a supplier of bar-code technology, has tied up with a U.S. partner, RFID Inc., to bring radio tagging solutions to customers here. The police in the Twin Cities are known to be using this technology in a pilot scheme to keep tabs on the patrols of beat constables.

The U.S. based Sapient and the German Infineon are two companies whose Indian engineers at their R & D centres in this

country are actively putting together RFID tools and applications.

In March, Tata Consultancy Services announced a joint initiative with Oracle, to provide RFID-based offerings.

It may be some time before Indian customers come face to face with RFID technology in the shops. This is because the cost of individual tags, even in millions is still 10 US cents or Rs.4.50. The value of the item sold, must justify the additional cost of the tag.

Big sellers may move cautiously when it comes to tagging individual products, because privacy advocates are already raising alarm about potential abuse. What if the tag is not removed when you leave the store (do we remove barcoded labels?), they ask. What if the tag continues to beep its information from your home? Today's RFID tags can store and transmit about 300 words of information and ranges are currently in hundreds of metres. (The Hindu)

INDIAN RESEARCHER UNVEILS WORLD'S FASTEST SRAM

Rajiv Joshi, a product of IIT, Mumbai, unveiled a chip at the VLSI Circuits symposium in Honolulu, Hawaii, which is considered the fastest Static Random Access Memory (SRAM) chip currently in the world.

The speed and efficiency of the SRAM is due to the chip design that uses IBM's CMOS technology with copper interconnects. The new design speeds access to machine instructions in the level one (L1) cache to more than 2 GHz.

Currently reported cache SRAMs function below 1.2 GHz with an access time of 600 picoseconds (billionth of a second) and more. The embedded cache SRAM holds data that is frequently accessed by the CPU so that it is immediately available to the processor.

GOLDMAN SACHS ON A SECRET IT MISSION IN INDIA

Man Ranjith U

Enthused by the long-term prospects of the Indian tech sector, global investment funds and fund managers are slowly making a beeline to India. And not to be left behind are the Big Daddies of Wall Street.

Goldman Sachs, the leading global investment banking, securities and investment management firm is the latest to have been captivated by the great Indian IT story. So much so that a 12-member delegation of international fund managers led by Goldman Sachs managing director Gregory Gould are currently on a secret India tour to identify and possibly firm up investment opportunities in the IT sector.

The team was brought to the country by the broking division of Goldman Sachs along with Kotak Broking.

The delegation which was in Chennai for a day is believed to have met the head honchos of companies such as Polaris Software, Cognizant Technology Solutions, EDS and Hexaware in the city.

Apart from these firms, Goldman Sachs is set to meet Infosys, Wipro,. Satyam, Convergys, Mphasis, BFL, ACS India, iGate, iflex, Cap Gemini, Atos Origin, Exult Client Services & TCS.

According to analysts the investment firm's plan to look around for opportunities in mid-sized IT firms also augurs well for the sector.

“So far the interest has always been in top-end firms like Infosys, TCS, Wipro and Satyam, etc. The fact that Cognizant, Hexaware and Polaris figure in the interested list speaks volumes on the long-term growth potential of the industry,” said an analyst with a leading fund house.

It may be recalled that Goldman Sachs had in its April 2004 outlook maintained that India has the potential to raise growth rates over the next five years from an average of 6.1 to 8.1 percent and the ability to match China in quality of infrastructure and education. The firm described India as a potentially “bigger growth story than China over the long run”.

(TNIE)



PSU banks posted needy 50 per cent higher profits, of Rs.12,294 crore, in 2002-03. There has also been a sharp fall in non-performing assets to 4.48 per cent. The gross profit of 27 banks rose by 37 per cent to Rs.29,715 crore, by March 31, 2003 from Rs.21,671 crore in 2001-02.

BSF DEVELOPS LOW-COST IED JAMMERS

In a significant innovation, BSF has developed an effective low-cost jammer against remote-controlled improvised explosive devices (IEDs) to blunt terrorist attacks and reduce casualties.

The light-weight equipment can provide effective jamming upto 100 metres, preventing detonation of all electronic gadgets in this range, BSF sources said here today.

The jammer, developed by the Research and Development Wing of BSF, is suitable for both static and mobile vehicular role, has lower power consumption and is easy to install and operate, they said. The force has also prepared remote-controlled IED pre-initiator equipment capable of pre-detonating remote-operated explosive devices with an effective blasting range of up to three kilometers, the sources said.

Initially, these gadgets would be mounted on 200 vehicles deployed in counter-terrorism operations and VVIP security duties in Jammu and Kashmir and Tripura, they said.

These devices, besides saving money spent on purchase of expensive imported gadgets, will help save lives of the security personnel many of whom get injured or killed almost every day in IED explosions in J and K and North Eastern states.

“The equipment helps a trainer to visualize the error on the target by locating whether a bullet has hit the place it was aimed at,” they said.

The BSF, also engaged in counter terrorism campaign, is also working towards sophistication in terms of communication as part of a five-year modernization plan at a cost of Rs.435 crore since 2001-02. In this direction, police network (Polnet) project is expected to be commissioned this year, the sources said. All frontier headquarters, sector headquarters and a large number of units located in far-flung areas will get connectivity under this project for clearance of voice as well as data traffic not only within the force but also other Central para-military organizations and state police forces. PTI



India was the world's largest producer of bananas in 2002-03 with production of around 10,200,000 tonnes. Demand for eggs in the country is expected to touch 47.2 billion by 2005 and 61 billion in 2010.

OXYGEN MASK PROTOTYPE FOR LCA PILOTS DEVELOPED

A.A.Harichandan



Scientists at the Defence Bioengineering and Electromedical Laboratory (DEBEL), a defence research laboratory, have developed a prototype of a pressurized oxygen mask, which will be part of the life support system for pilots flying the Light Combat Aircraft (LCA).

The DEBEL director, G.P.Agrawal, told the press, that these masks were aircraft-specific. "We had developed similar masks for other fighter aircraft, and this one is being tested for use in the LCA. The technical trials should be over in two to three months," he said. The mask provides pilots pressurized oxygen at the right concentration. "Beyond 30,000 ft, the mask will provide 100 percent oxygen," Mr.Krishnapur said.

Fighter aircraft such as MiGs and Sukhois could fly at altitudes of 50,000 ft and the Mirage could go up to 60,000 ft. The maximum altitude possible for the LCA is 50,000 ft. he said.

The mask is part of an integrated system with an automatic 'oxygen diluter demand regulator' that ensures that the correct concentration of oxygen is supplied based on the pressure in the aircraft and the altitude.

"The mask is built in such a way that when it is fitted to the pilot's helmet an air seal is achieved," Mr.Krishnapur said.

- Triggered by growth of computer hardware, India's electronic hardware exports jumped up by 45% in 2003-04, to \$1.67 bn, against \$1.16 bn in the previous year. In rupee terms, the growth was 37.5% at Rs.7,700 crore, against Rs.5,600 crore in 2002-03.
- Amid stiff competition from private and foreign players, 27 public sector banks logged 35% growth in profit at Rs.16,546 crore, while their bad assets fell below 3% during 2003-04. State Bank of India led the chart with Rs.3,681 crore net profits, followed by Canara bank (Rs.1,338 crore).
- Indian remittance income from the US increased to \$4.5 billion in 2003, according to a CII study. This figure roughly corresponds to 21% of India's total goods exports earning in 2003.
- India has emerged as Intel's largest design centre outside the US. India centre is now working on designing a microprocessors completely in India. The high-end microprocessor, its first to be designed in India, is expected to hit the global markets in three to four years.
- Bangalore has pipped Hyderabad, Mumbai and Delhi to get the country's first special NRI city status.

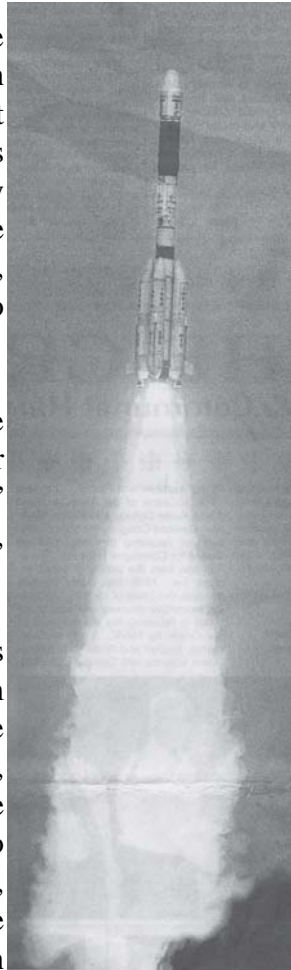
A SATELLITE TO SERVE STUDENTS

N.Gopal Raj

Nearly three decades after it carried out the world's first effort to reach instructional programmes to far-flung villages using direct TV broadcasting over satellite, the Indian Space Research Organisation (ISRO) has sent aloft EDUSAT. The satellite is expected to relay high-quality programmes that will augment the teaching at all levels of education, from primary school to professional courses.

“EDUSAT is one of its kind where the satellite is totally dedicated for providing educational services,” observed the ISRO chairman, G.Madhavan Nair.

The founding father of India's space programme, Vikram Sarabhai, recognised from the outset that, in such a vast country, satellites provided a cost-effective way of reaching information to villages. During 1975 and 1976, ISRO carried out the Satellite Instructional Television Experiment (SITE) transmitting TV programmes on health, hygiene and family planning to some 2,400 villages, each of which was equipped with a direct-reception community TV set. The programmes were broadcast using a satellite loaned by the



National Aeronautics and Space Administration (NASA) of the United States.

Subsequently, after ISRO had its own INSAT satellites in place, a variety of educational programmes were telecast. ISRO also initiated projects for distance education and training. Several State Governments are using the Training and Development Communication Channel (TDCC), which was started in February 1995, to train their district and village staff. The channel is also being used by various organisations for professional training. The Andhra Pradesh Government has established its own channel for training staff and to maintain easy communication with them. The Madhya Pradesh Government is continuing the Jhabua Development Communications Project, started in November 1996 to provide interactive training programmes to villages in Jhabua and other backward districts of that State.

The INSAT satellites are also being used to transmit educational TV programmes for school and college students. These training and educational channels are to be transferred to EDUSAT after it becomes operational.

The Department of Posts has now come out with Bill Post Mail Service. The Service officers handling of financial statements, bills, monthly accounts or other such items of similar nature, posted by a service provider or a corporate agency to a customer at least once in 90 days.

EDUSAT, designed to serve for at least seven years, will transmit five spot beams covering the northern, north-eastern, eastern, southern and western regions of the country.

According to an ISRO press brief, “EDUSAT is primarily meant for providing connectivity to school, college, and higher levels of education, and also to support non-formal education including developmental communication.” As preparation for the EDUSAT, for the past year ISRO has been using the INSAT-3B for running pilot projects with the Universities. Each university has been provided a studio from where the “class” will be taken. The lecturer can use Power Point Presentations in addition to the blackboard for their talk. The talk is filmed live and uplinked to the satellite, which then broadcasts it to the ground terminals.

“EDUSAT will be very beneficial considering the shortage of teachers especially in frontier areas of technologies.

With reception terminals in 100 colleges, a single lecturer is able to reach 10,000 students across the State at the same time.



Once EDUSAT is launched and commissioned, the project will enter the semi-operational phase. According to ISRO, the aim is to connect atleast 100 to 200 classrooms with each of the satellite’s five spot beams, providing educational programmes to an estimated 50,000 students. Several States and educational bodies, including universities, have shown interest in using EDUSAT to provide educational programmes, according to Bhaskar Narayan, director for Satellite Communications at ISRO Headquarters. ISRO has held regional workshops to publicise how educational institutions could use EDUSAT’s capabilities. A conference of all university vice-chancellors was held in July this year (2004).

EDUSAT will benefit school education too. Close to 900 primary schools in Chamarajnagar district of Karnataka were being equipped with reception terminals.

The benefits of EDUSAT could even reach beyond India’s borders. As EDUSAT covers other South Asian countries partially or fully, it should be possible to extend support to those countries too, according to Mr.Madhavan Nair. (The Hindu)

The launch of EDUSAT could lead to a revolution in the education sector. Students in rural areas stand to benefit the most.

SPACE RESEARCH

India's first Met satellite launched

India's first full-fledged meteorological satellite, METSAT, was successfully launched on September 12, 2002, from the Satish Dhawan Space Centre Sriharikota.

The Polar Satellite Launch Vehicle-C4, carrying the 1,060 kg satellite, soared into a cloudless sky at 3.57 p.m. and injected the METSAT into a Geosynchronous Transfer Orbit, 21 minutes after lift-off.

It was another milestone for the PSLV, India's workhorse space launcher.

For the first time, the space vehicle carried a 1,000 kg plus payload into a

geosynchronous orbit, unlike in the past when all its satellites had been placed only in the polar orbit.

The new satellite, which will position itself between 250 km and 36,000 km above the earth, would keep a continuous watch on the weather systems through its Very High Resolution Radiometer. This will be relayed to ISRO's ground stations and also directly to select Met station.

In the past, India's weather monitoring payloads had been combined with the INSAT communication satellites. This is the first time India will have its own dedicated weather satellite.



1. Britain has started planning medical consultation work in India. To start with, blood and urine sample will be analysed in India and the results e-mailed to UK. The National Health Services of UK is finalizing the plans to save one-third of the expenditure. S.R.S.Ranbaxy is the Indian Organisation to do this work. Ranbaxy is at present carrying out more than 600 types of diagnostic analysis in India.
2. The Chairman of the Unilever company has remarked "Now that India started believing in herself, no one can stop progress."
3. Indian's ONGC is planning to enter the electronics and petrochemical fields, investing Rs.30,000 crores.
4. The Indian Oil Corporation has prospected for Rs.600 crores of tonnes of crude petroleum in the last 50 years.
5. In the year 2003-04 alone India's computer sales have gone up by 32%.

SARAS

The SARAS programme, to design, develop and certify a light multi-role transport aircraft has now been sanctioned by the Government of India.

India's Council of Scientific and Industrial Research (CSIR) has been asked to assume the leadership of the SARAS programme.

Two flying prototypes are to be built now; the decision to produce the aircraft will be taken later by the Government of India.

SARAS will be used mainly for commuter and executive roles and in societal roles like air ambulance.

The funding for SARAS comes from the Technology Development Board of the Department of Science and Technology, the Ministry of Civil Aviation and CSIR itself. CSIR and many public and private sector industries are participating in the programme.

The Centre for Civil Aircraft Design and Development (C-CADD), Bangalore, has been specially created by CSIR as the nodal agency to monitor and manage this national programme.

C-CADD, CSIR, has its own separate administrative and management infrastructure for SARAS. It is also the overall design and integration agency for the aircraft. This national R&D programme is purely civilian in character and is expected to become a catalyst in establishing a viable civil aircraft industry in India.



- High cruise speed
- Ruggedness and reliability
- Ease of maintenance
- High specific range
- Low operating cost

These goals are achieved by using appropriate levels of technology in various areas:

- Superior aerodynamics
- Efficient, reliable power plant
- Efficient, high lift system
- Selective use of composite material for low structural weight
- Integrated digital avionics to reduce pilot workload
- Use of well proven systems for high reliability

Design and Technology

SARAS is a twin turbo-prop multi-role light transport aircraft suitable for short hops in the commuter role as well as long range, high speed cruise in the executive transport version. The aircraft has the following features:

- All weather, day/night flying capability
- Operability from semi-prepared runways
- Operability from high altitude airfields on hot days

with little or no compromise on take-off weight

- Pressurised cabin
- Cabin comfort level matching that of regional aircraft
- Fully duplicated flight deck.
- SARAS has the following specific design goals:
- Multi-role capability
- Short take off and landing characteristics

Performance

- Take-off distance (ISA,SL): 570 m
- Landing distance (ISA,SL): 605 m
- Max rate of climb (ISA,SL): 12m/s
- Max speed: 620 km/h
- Max range (14 pax): 400 km
- Max range (8 pax): 1400 km
- Ferry range: 1924 km
- Max specific range: 2.5 km/kg

Operational Capability

Saras has been designed right from the beginning as a multi-role aircraft. The large cabin column (16m(3)) lends itself easily to configuring the aircraft in a variety of roles.



NANO TECHNOLOGY WILL BE THE FUTURE

At the launch of the ISRO-supported portal for the National Natural Resources Management System (NNRMS), Prof.Kalam spoke about the dominant technology of the near future. “We have had information technology, biotechnology and lately bioinformatics...nano-technology will be the future with nano science developing nano materials and devices. This will lead to further convergence of technology with wise applications. Nanotechnology now provides material worth \$300 billion and this could be come \$750 billion in 2007,” he said.

Plane technology

Prof. Kalam saw five important “technology revolutions” taking place. Merger of technologies would result in unmanned

supersonic fighter aircraft, which could avoid radars. There would be “hyper-planes” with a high take-off payload, made possible by mass addition technology; the first supersonic cruise missiles would be made. Lastly, convergence of technology would lead to revolutionary changes in aerospace technology.

The NNRMS portal using remote sensing would be used to store and share data related to its national mapping mission. The data would include inventory of forests, wasteland, land use, water bodies, wetlands, coastal-land use and groundwater resources. Large-area data-bases covering many States were being prepared and the President was shown the data related to Chhattisgarh and Bijapur district of Karnataka, on the portal.

(The Hindu)



Once the quota system is removed India’s present export of ready-made garments (Rs.27000 crores per year) is expected to go up by 15%

BPO PLAYERS NOW EYE THE 'INTELLIGENCE OUTSOURCING' PIE

Pragya Singh

Semi-skilled graduates made a killing off their call centre jobs. It's now time for the highly educated and well trained to bite a slice off the off shoring pie.

'Intelligent Outsourcing' is the latest business opportunity that BPO players are betting on, based on a target market size expected to reach US \$4.5 bn by 2007. the segment is also expected to employ several thousands skilled, educated personnel as the market grows.

In India, 'intelligent outsourcing' is estimated to be a Rs.1,000 crore revenue industry, though only a few players cater to global publishing clients using armies of professional writers and educational or technical specialists apart from 'plain' graduates.

"Although highly skilled employees are a relatively small percentage of our total employees, their background makes them best suited to provide development and editorial support to publishing clients," says Ranjit Singh, CEO, Tech Books, a dedicated publishing outsourcing setup.

While industry association NASSCOM is assessing the potential of publishing off shoring, several local firms are making a mark internationally. E-book publishing major Kolam, for instance, with prestigious clients like Oxford University press and

Macmillan in its account was bought over by SPI Technologies, one of Asia's largest BPO outfits.

Apart from utilizing content development and editorial qualifications of the highly educated, book BPOs hope to talk the educated elite into tech-sector service jobs, an area that has remained largely unexciting for the well-qualified English speakers.

"The opportunity to be involved in the production of scholarly works is attractive to the people we have hired. In addition the ability to use their educational background in this career setting is also appealing," says Singh. In this segment, too, India is poised to be cost effective and quality destination for firms abroad. "Outsourcing editorial jobs to India offers a clear advantage over producing these projects in the US or UK where this level of support would be difficult to find in publishing service firms," he adds.

According to industry, India already outpaces the Philippines, China, Mexico and CIS in vendor sophistication, number and quantity of vendors in the publishing outsourcing sector.

"India's resource of highly educated, highly skilled English speaking professionals provide the US and UK based publishing community with the best value for producing their products globally," said NASSCOM president Kiran Karnik.

There are over 10,79,091 self-help groups in India.

School and college educational products, scientific technical, medical professional and reference materials, professional societies, government agencies and major corporations are likely to be big users of publishing outsourcing.

[TNIE]



FDI OR FOREIGN DEPENDENT MINDSET?

(Part-I)

S.Gurumurthy

Every Finance Minister of India has spoken in one voice about Foreign Direct Investment (FDI). Originally, for some Politicians, not that foreign direct investment was needed, but without it we would perish. This turned FDI into a national economic status symbol, even a benchmark to assess India. Repeatedly, economic commentators used to compare the FDI received by China and the FDI received by India to denigrate India as an inferior economy, that is, an inferior country. Psychologically, this eroded the nation's confidence.

A top bureaucrat, who occupies a high position again, even used to advise Indian businessmen to sell their manufacturing companies to foreigners, implying only foreigners—not we—were competent for that. Foreign consultants advised Tatas to divest Tisco and Tata Motors, that is, sell them to foreigners, and concentrate on Tata Consultancy Services. Thus, as if by design, national confidence was eroded and in effect this created a foreign dependent mindset. This was how the quest for FDI, far from being an economic tool, became an instrument to destroy national confidence.

This national defeatism was reversed by one event, a non-economic, even anti-economic event—the Pokharan atomic explosion. Even the author of Pokharan, The Prime Minister might not have foreseen its effect. The sound of the bomb revived the Indian civilisation, which was in an intensive care unit for centuries. This stunned the West and the US in particular. The West respects not the good, but the strong. That is why they respect a blood-stained China. In India, the Pokharan bomb exploded physically in North Block, on the Finance Ministry, whose officials panicked.

But soon the nation began finding its feet. India Development Bonds issued to bolster the forex position were oversubscribed by NRIs. Pokharan made them shed their shame in associating with India, which was to them a failed civilisation till then. Not an economist but an advertising specialist could experience the impact of Pokharan and say that after the Pokharan blast, NRIs, who used to abuse India, began admiring India. From then on gradually national self-confidence grew, Jaswant Singh got the respect he deserved from US Deputy Secretary of State.

Our country produces 300 tonne of pure ghee every day.

The rise in national spirit reflected in science and business too. Much against global advice, Tatas made the first Indian cars—Indica first, the Indigo next. The Mahindras made the first Indian SUVs, Bolero first, Scorpio next. TVS made the first Indian motorcycle, Victor, and threw out their JV partner. Tisco emerged as the lowest cost steel producer in the world! A hundred similar things began happening. India's Commerce Minister could compel the WTO to listen to India. Within the nation, small local brands began challenging MNC global brands and emerged successful. A different India, emerged. Surprisingly without much of FDI, even less of it!

This completely confounded the Finance Ministers and economists, in India and outside. In fact western economists began finding virtue in India attracting less of FDI as compared to China. They said India does not need, but China needs, FDI! Why? India has entrepreneurs, they said. China, having finished them off earlier, does not have them. So it has to import them by importing FDI. So, far from more of FDI, less of it too became a virtue. The foreign dependent mindset assiduously cultivated by apologists for India became a matter of the past.

However, the irrational quest for FDI, which began when we had three weeks supply of forex reserves, still persists even after we

have an ever-increasing stock of forex reserves now at \$120 billion, sometimes wondering what to do with it. Even today, in this budget too (2004), there is apologetic emphasis on FDI. The Finance Minister says FDI is needed for infrastructure. So in three sectors FDI limits have been sought to be increased—in telecom to 74 percent, and insurance and civil aviation to 49 percent. In all these sectors the government is the major player: BSNL and MTNL in telecom, LIC and GIC group in insurance, and Air India and Indian Airlines in civil aviation. Not a single share in these PSUs will be sold to foreigners, given the position that there would be no divestment of PSUs by this government. So it is only private players who will sell their shares. So it is a policy made for private players. Many of them have been working for it furiously. The whole of Delhi knows them. But they convinced the media that they were not the lobbyists, but those who are trying to prevent them were the ones lobbying! And the media swallowed it. Now the Finance Minister has given in to these lobbies, but under the cover of elegant language and a higher philosophy that the nation needs FDI in the infrastructure sector.

We should know FDI will deprive local capital of investment opportunities and keep the forex reserves idle. Also, how such a policy supplies money at cheap rates to the US government than to Indian business.

(The New Indian Express)



Jammu & Kashmir exported cricket bats worth Rs.24 crore in 2003.

INVEST OUR OWN MONEY, THEN SEEK FDI (Part II)

S.Gurumurthy

The case for FDI assumes that the country does not have funds for investment. Not many perhaps know it is the other way round. Far from not having funds, the country idles its own funds, not knowing what to do with it, where to invest it. Idling money is an overhead on the national economy. Look at commercial banks. The CMIE Monthly Review for June 2004 shows that banks are struggling with surplus funds. So for lack of investment opportunities, they sink their money in Government securities.

The CMIE review says that commercial banks had sunk Rs.42,055 crores in Government securities in just six weeks from April 14 to May 2004. In the 12 months ending March 2004, banks invested an all-time high figure of Rs.1,27,776 crores in government securities. According to the RBI, government securities account for 41.5 per cent of the net funds of banks. As against the statutory limit of 25 per cent, the additional amount banks have kept invested in government securities for want of other avenues, is a whopping Rs.2,69,777 crores or \$ 60 billion! This is idle money for which banks are starved of investment opportunities.

Look at forex reserves. It is \$ 120 billion, and increasing at over \$ 2 billion a month. According to the latest RBI report, the return on forex reserves invested abroad has come down from 4.1 per cent last year to 2.1 per cent in 2003-2004. So on a national asset of Rs.5,40,000 crores we get a return

of just Rs.11,340 crores. Since we do not know how to invest this amount in India, we keep it in the US and subsidise the US economy at 2 per cent interest! Not knowing what to do with idle bank funds of over \$ 60 billion and surplus forex of at least \$ 60 (out of \$ 120) billion helplessly lent at throwaway rates abroad that we are seeking FDI. Yes, we lacked funds till the mid-1990s. Can anyone say now that for lack of funds we need FDI?

The numbers are clear. We have huge surplus funds, local as well as foreign. We have to make them investment-friendly. The challenge is how to make surplus bank funds and surplus forex funds—aggregating to \$ 120 billion—investment-friendly. The policy makers, blinded by market fundamentalism, have failed to see the Indian reality. Free market ideologues told Indian business that it was for them to get long-term funds from the market, local or foreign, and it was not for the government to create long-term capital. The assumption was that the market would produce long-term equity. But the Indian capital market did not. And will not. Why?

A family based economy in which families provide social security will not go for risky, stock market investment. It will seek safe investment. So even at atrociously low interest, Indian families go to only banks. Result, banks accumulate funds as short-term funds, not available for long-term investment. With market fundamentalism as the rule, IDBI and IFCI models became an

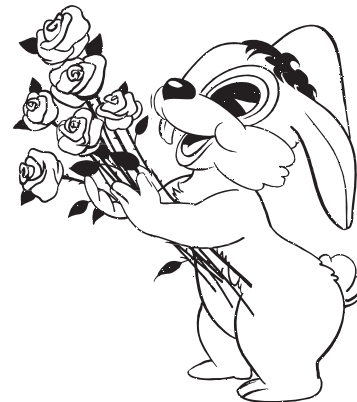
anachronism, a liability. Lucky ICICI escaped to become a bank and began lending money for houses, cars, motorcycles and refrigerators. IDBI and IFCI, which lent more on political advice, turned sick.

What then is the remedy? With such huge stock of short-term surplus lying idle, it is ridiculous to seek FDI saying we are short of funds. The truth is we do not know how to invest our own money. The answer lies in appropriate government intervention. It will have to give guarantees to banks and make them invest their short-term funds in IDBI and IFCI equity and long-term bonds. This will convert short-term funds of banks into long-term investment friendly funds. That means in a country like India where there is no publicly provided social security, equity market cannot do the trick. The government will have to intervene to facilitate creation of long-term capital. This is the clue to solving the investment shortage, that is, convert short-term bank funds into long-term funds through proper government intervention. In some form or the other the developing world does this, but we do not. Why? We look to the free market US only

for solutions to our problems. Not realising over half the house-holds in the US punt in stock markets, while just about two per cent of Indian family savings find their way into stocks. If the Government converts short-term bank funds into long-term funds, we can generate investment up to \$ 60 billion.

Forex funds too can be turned into investment friendly funds in India, particularly for exporters. Even small Tirupur garment exporters, who pay double-digit interest, can operate an escrow account and on the basis of their export potential, they can be given forex loan at say 4 per cent or 5 per cent for modernisation. This will mean nil risk as borrowers earn forex. So the reserves are safe. The government will get more than 2 percent return and exporters will get loans at 4 to 5 percent and be more competitive—a win-win situation for both. So the issue is not where from to invest, so FDI, but where to invest. Lesson: first invest our own idle money and then go for FDI. We will need FDI when we are capital starved. We are not now.

(The New Indian Express)



India's Telecom network will become the world's second largest after China rising from \$9 billion in 2002 to \$25 billion by 2007.

GLOBAL HEADHUNTERS SCOUT OUT HOT INDIAN JOB MARKET

Global head-hunters are seeking partners and acquisitions in India, where a sizzling job market is creating tens of thousands of jobs a year.

The boom in outsourcing of back-office and customer service work to India, along with growth in the retail and consumer goods sectors, has generated a need for huge numbers of trained workers, often at short notice.

Spending on job ads by companies is estimated at \$120 million per year, while spending on recruitment firms is twice that and growing 20 to 28 percent annually, said Arun Tadanki, president of the Indian unit of online recruitment company Monster Worldwide Inc.

“For every percentage point pick-up in the economy, there is 10 percent (growth) in the recruitment market,” he said.

In 2004, Switzerland’s Adecco, the world’s biggest staffing firm, entered India by acquiring a local recruiter. It paid an undisclosed sum for 67 percent of People One Consulting, which boasts a 20 percent market share.

This followed Monstercom’s \$9.6 million buy of Jobsahead.com in May and a purchase of 76 percent of Chennai-based Ma Foi Management Consultants by Dutch firm Vedior in April. US staffing firm Kelly

Services Inc, which finds Indian scientists for jobs abroad, wants to build on a tiny buyout it made four years ago. “We have plans to expand. If a good acquisition comes, we’ll look at it,” said Dharendra Shantilal, Kelly’s Singapore-based managing director for Asia.

By moving into India, international recruitment firms are following their global clients outsourcing to the country. The debate over whether outsourcing is at the expense of jobs in other countries has only raised awareness about India as a global talent pool—and a job seeker’s dream.

India’s telecom sector is adding 1.6 million subscribers a month, requiring more sales and support staff, while the retail sector is witnessing an explosion in rural demand for consumer goods.

At the same time, there is increasing demand for Indians among employers overseas. Indian workers are becoming known for their management and scientific research skills, in addition to their strengths in software. With that in mind, India’s Cyber Media group announced two weeks ago a recruitment joint venture with US technology jobs portal firm Dice Inc.

“It is a good time (for temp agencies) because the segment is seeing exponential growth,” he said.

Indian Tyres were exported to 64 countries in the financial year 2003-04. It reached Rs.1300 crores in that year. China is India’s main competitor.

Industry officials say the market for temporary workers will grow 10-fold in three years from the current 40,000-50,000. "The entire temp staffing industry is only two to three years old, but is catching on," Tadanki said.

Team Lease Services, a 9,500-strong company, this week launched an online

service to match employers with temps. Ma Foi, the company bought by Vedior, has 8,000 temporary staff deployed in 440 locations for clients such as Unilever and Bharti Televentures. "The entire thought of geographic reach has become critical (for consumer goods makers)," Chief executive K.Pandya Rajan said. Ma Foi expects 2004 revenues to rise by half to Rs.1.26 billion.

(Reuters)



'INDIA IS AMONG TOP FOUR FDI DESTINATIONS'

INDIA IS AMONG THE TOP FOUR Asian destinations for foreign direct investments, but is well below the top ranked China, according to an UNCTAD (United National Conference on Trade and Development) report.

At the same time, the World Investment Report 2004 released at New Delhi, on 22/9/2003 by UNCTAD says India is likely to attract more foreign investment flows as the global economy rebounds this year. It has recorded a 24 per cent rise over the previous year's FDI inflow of \$3.4 billion which is attributed to its strong growth and continued liberalisation.

Research and Information system(RIS) Director General, Nagesh Kumar, said these figures are underestimated as India was not following the international definition of FDI. As per these norms, he said the FDI inflow could be as much as \$7 billion.

On global FDI flows, the report says these fell in the U.S. Central and Western Europe while developing countries as a whole showed an increasing trend. Among the developing nations group, Africa, Asia and Pacific showed an increase in FDI flows while Latin America and Caribbean experienced a declining trend.

(The Hindu)



BPO industry is expected to grow at 54 percent annually with India meeting over 30 percent of global demand.

REVERSE COLONIALISM? FRANCE WOONG CORPORATE INDIA

France, which dished out incentives to attract foreign investors in the recent past, is now aggressively wooing India to make investments even as until now the U.S. remains the main source of foreign investments. In fact it is talking to the Indian corporates including the bigwigs such as Tatas, Reliance, Godrej, and Mahindra and Mahindra.

“I am here to enhance the international visibility of France and will hold talks with these companies on a one-to-one basis,” the visiting Special Representative of France for International Investment and President of Invest in France Agency (IFA). Clara Gaymard, said addressing media persons and members of the business community at the French Embassy in Delhi on September 22-2004.

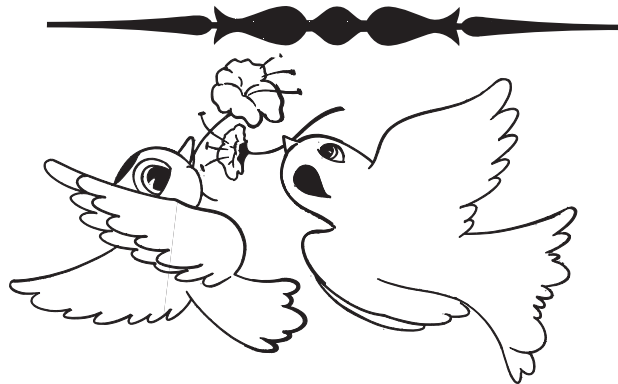
“India is emerging fast and it needs three feet—one in India, one in the U.S. and the third in Europe. We are here to offer France for its Europe base,” she said promising all

help to the future investors and listing advantages her country offered to them. France has exempted tax on personal income and is considering reforms in business tax system and research and development funding. Since the reforms are being considered, the government has decided to exempt the business tax till 2006, she said.

Mrs. Gaymard said the country had also made reduction in tax and social securities levies for young innovative companies. On the potential investors in India, she said since India and China were witnessing a large number of foreign investors in their countries, they were seriously working on the global presence of their firms too. There were only 25 Indian companies in France right now but we were sure more companies would soon join us, she said.

France had also made concessions for the executives and their families living there to make the environment more investment friendly, she said.

(The Hindu)



Export of Handicrafts items which was valued at Rs.8343 crores in 2002-03 rose by 25% in one year and touched Rs.10,365 crores in 2003-04. By 2009-10, it will touch an all time peak of Rs.32,700 crores.

TALENT HUNT: RIN INTERVENTION BRINGS INNOVATION

Rajesh Jose

Necessity is the mother of invention, goes the adage. And it is also the link between the banana stem injector, a mechanical device developed by Manoharan of Batlagundu in Dindigul district of Tamil Nadu, and the Varsha Rain Gun, a mega sprinkler patented by Anna Saheb, a betel leaf farmer of Belgaum, Karnataka. The two innovations have changed the lives of agriculturists for the better in both the States.

Manoharan, co-owner of Raj Engineering Works in Batlagundu, developed the banana stem injector after a local farmer sought his help to combat the pest menace affecting his banana plantation. The farmer wanted a small, compact and cost-effective injector unlike the ones already in the market and Manoharan proved himself worthy of the task in 1997. But there were hardly any takers for his invention at that time. Besides, not many were aware of his injector.

Anna Saheb had developed a low-cost drip irrigation system to tackle the drought in his district. The sprinkler, 'Chandraprabhu Rain Gun' that was later renamed 'Varsha Rain gun', won him a Grassroot Innovation Award, instituted by the National Innovation Foundation, in 2000. But the invention failed to get a foothold in the market.

It was then that Rural Innovations Network (RIN), a Chennai-based NGO, stepped into the picture. RIN helped Saheb to market the product through an entrepreneur in Chennai. Saheb's sprinkler has reportedly become a much sought-after commodity by farmers across the country. RIN has also been instrumental in getting recognition for Manoharan's 'Siphon' banana stem injector. After its design was modified with expert help from IIT engineers, the innovation has been doing good business.

RIN's Manager-Communications, says "These are just two of the 11 innovations that we have brought to light." The others include, J.S.Milker a mechanical equipment invented by Joy John of Kerala for milking cows and the Varun Tiller, a machine developed by Chandrasekhar of Comibatore that can till and weed closely-spaced crops.

The Varun tiller, a coconut husker and palm leaf shredder were among the inventions that were on display at an expo.

RIN is all about identifying incubating, improving and exposing ideas to the world.

As of now, the non-profit organisation is promoting such innovations that can do wonders for the rural population.

67.89 lakh tonne of wheat was exported by our country between April 2003 and February 2004.

Germany imported \$265 million of Indian leather products in 2003, emerging as the largest buyer, accounting for almost 15% of India's leather exports.

“We adopt the innovation and nurture it. We ensure protection of intellectual property rights”.

RIN is also into prototyping, market research and development, business planning, fund raising, technology transfer and networking,” according to a brochure brought out by RIN.

For a nominal charge, innovators get access to all these activities that ensure the commercial success of their creations. RIN is currently being supported by two funding agencies, including one in Netherlands. RIN is now scouting for talent innovators who can bring about radical changes in the agrarian sector with low cost ideas.

(The New Indian Express)



INDIA TO LEND ITS POLL EXPERTISE

Hailed by the Election Commission as a move to uphold the cause of democracy, India will help young democracies around the world by providing personnel and other expertise for conduct of elections.

A memorandum of understanding (MoU) in this regard was inked by the Election Commission and the United Nations officer at New Delhi which Chief Election Commissioner (CEC) described as “historic and unique moment.”

He said under the MoU the commission would provide personnel and other assistance to various member countries as the world body has recognized the conduct of elections in India. “I see it as a beginning of a very important relationship. In the years to come it will be necessary to conduct elections in a number of countries as many of them are young democracies,” E.C. said.

The MoU was signed by Deputy Election Commissioner and the director, electoral assistance division in the UN Carina Perelli.

(P.T.I.)



The Oil & Natural Gas Corp Ltd. (ONGC) has added 50 Million Metric Tons (MMT) of oil and equivalent gas to its reserves in 2003-04.

Engineering exports crossed \$10 billion in 2003-04, with growth rate of 28.33% against the country's over-all export growth of 16.37%.

A number of foreign companies including Cummins, Meson etc. have started their research wings in India.

THE SOUTHERN STARS

A CII study

South India has played a major role towards making our country a global player. According to Confederation of Indian Industry (CII) study on ‘Key Factors Making India A Major Global Player: ‘The Southern Stake’, cities like Bangalore, Hyderabad and Chennai have emerged as growth poles, creating centres of excellence in IT, Biotech and Pharmaceuticals. The study says that South India forms the backbone of India’s comparative advantage in the services sector.

The study points out that southern states have also leveraged their traditional strengths in textiles, marine products, gems and jewellery and engineering. The states have led the way in producing ‘knowledge wokers’ by creating centres of academic excellence, according to the CII study.

“Majority of India’s HIB visas are issued to South Indians and Chennai has the longest waiting list for F1 visas”, said Jayanta Roy, senior advisor, international trade, CII, who prepared the study. He further said that the southern states are performing well above the national average in terms of GDP growth. The study points out that to be a major economic power and substantially reduce poverty by 2010, the roadmap ahead should be to rein in fiscal deficit, though macro indicators are mostly under control. Steps to reduce the huge transaction costs incurred for doing business in India need to be

initiated soon. “Nurture IT, Biotech, Pharmaceuticals as growth drivers for the economy and expand niche in the services sector and knowledge economy,” states the CII study. The study also says that it was important to leverage sunrise sectors in manufacturing like auto parts and components and other supply chain engineering products, to propel India as a global economic force.

The CII study also advocates ‘work on creating growth clusters and investment in brand equity to recreate the success of Bangalore in other cities”. The study urges heavy investment on infrastructure and removal of red tape, such measures being in line with the focus on reducing transaction costs on a national level. The study points out that the urban agglomeration of Bangalore alone contributes to around 40 percent of India’s services exports (\$8 billion per annum) and around 12 percent of goods exports (\$6 billion per annum). Dynamic clusters with sector specialisation like Tirupur exported \$800 million worth of goods. The study mentions that export oriented growth strategy in China also centred around growth clusters.

The CII study vouches for establishment of free ports with world-class logistics. “Make administrative procedures hassle free,” asserts the study. The study also calls for more investment in agriculture to create

In the World Competitiveness Year book (WCY) for 2004, India has jumped a massive 16 ranks. It now stands of 34th, up from the 50th position it held in 2003.

effective supply chains and expand value-added food processing industries. As a way forward, the study also points out that India will have to effectively strategise between multilateralism and bilateralism. Trade liberalisation is inevitable and Indian industry will have to be prepared to grab the opportunities and minimize risks from globalization, adds the study.

The CII study sets a target of increasing India's export to 2 percent of global exports (i.e.\$178 billion) by 2010 in order for India to claim its rightful spot as a global player.

A GDP growth at minimum of 10 percent for the next decade is imperative if India is to emerge as an economic superpower and effectively address the issues of unemployment and poverty. It suggests tariff rationalization as per East Asian standards and liberalisation of consumer goods imports. The study also calls for establishment of dedicated trade policy division in all states to coordinate policy with Union Ministry of Commerce; such a move will be in keeping with the diversity of needs and priorities in a continental polity like India. (The New Indian Express)

TO BRAND OR NOT TO BRAND

Sangeetha Chengappa

You cannot create a great brand without advertising.' This topic was debated by Gurcharan Das, former CEO, "Procter & Gamble India Ltd and Nandan Nilekani, CEO, president and managing director, Infosys Technologies Ltd, at the fourth edition of 'Business Today Crossfire' in the city.

While Gurcharan Das very articulately pointed out that it was next to impossible to create a great brand without advertising, Nandan Nilekani shot it down with a powerful presentation on four brands which enjoy a global presence today without any focused advertising spend. According to him, one of the brands is *Bangalore*, which has well and truly arrived.

He said that any visiting foreign dignitary to India makes it a point to stop over at *Bangalore* first. He also referred to jokes on the Internet, e.g. a tired school kid telling his Mom to outsource his homework to *Bangalore*. Most interestingly, *Bangalore* is now being used as a verb-being '*Bangalored*' means being out of a job, because of outsourcing. "It is only a matter of time before the Oxford English Dictionary incorporates the verb '*Bangalored*' in its next edition" said Nilekani. The other three brands which enjoy the same status are *India*, *IIT* and *Infosys*, he added. Their global brand presence was established without advertising them, he concluded.

The Gallup Organisation, the world's top name in polling, has launched its first election-related survey in India, in association with *Indiatimes*. The Gallup-Indiatimes initiative, called Young India Votes, addresses the Indian youth between 18 to 35 years across 12 cities about their political preferences and disposition.

WE HAVE A HEADSTART, LET US NOT PUT UP OUR FEET- (Part-I)

Arun Shourie

Just 6,00,000 persons working in our information technology sector to-day (2004) create \$ 16 billion worth of wealth every year. IT exports are liable to touch \$ 13 billion this year—that is, in spite of recessionary conditions in their principal markets, our IT professionals and firms will earn about Rs.60,000 crore for the country in foreign exchange. Those earnings will account for over one-fifth of our total exports.

Such figures represent phenomenal, spectacular growth: 15 years ago the activity was hardly known; just five/six years ago the figure was not \$16 billion, it was \$ 5 billion. Similarly, but for the successes of this small number of firms and personnel, our export performance would have looked very different from what it does today. And with that the level of foreign exchange reserves too would have been substantially lower.

More significant for the future,

- India and Indians have contributed significantly to the growth of this field- one-third of the start-ups in Silicon Valley were by Indians.
- We are today one of the principal knowledge-generators in this field-over 100 of the Fortune 500 companies have set up R&D centres in India. Among these are some of the world's cutting-edge IT firms—Intel, IBM, Microsoft, Motorola, Hewlett Packard, SAP, Sony, Samsung, Texas Instruments. Each of them relies on and seeks to avail of India's strengths in IT.

- We export IT and IT-enabled services to over 133 countries. Our firms are training people in IT in 55 countries. A single Indian firm-NIIT-today runs 100 training centres in, all places China. The government itself is setting up training centres for people in other countries.

The other day, the Prime Minister inaugurated the Kofi Annan Centre for Excellence in Accra, Ghana, for the people of West Africa; in March 2004 he will be inaugurating a Cyber City in Mauritius for the people of east Africa—a project that accounts for about half of a \$ 100 million credit line to the country, the rest to be used to provide other IT-related services, like education.

- Out IT firms have become standards of excellence: today three-fourths of the world's CMM Quality level 5 companies are in India.
- They are providing software services, of course; they are also contributing to the creation of software products. When I ask my colleagues in the Ministry of Information Technology for some recent examples, they list scores in no time. The Pramati studio/server has been rated among the top 10 in middleware; an I-Flex Banking product has been among the top three for three years in a row – from 2000 to 2002—and is today the world's number one. We often regret that while we have made impressive strides in software, we have lost out to China, Taiwan etc. in hardware. There is much weight in the lament – and addressing it has to be a

priority for the government. But we should not lose sight of the other side-that a number of high technology hardware products are being designed in India for the global market.

- The Phillips DVD video codec; the Apple iPod audio codec; the Texas Instruments' OMAP; Microsoft's Jsharp; the Adobe reader for Palm and iPaq; Intel's "start up" utility; Cisco's IOS core components; Hewlett Packard's ux; the Open View kernel; components of Oracle's Pro-c; MBIL is the third global optical disk manufacturer; VXL Instruments is the third global terminal manufacturer; HiCal supplies magnetics for the world's foremost mobile handset manufacturer, Implusesoft; the manmar imaging software for ultrasound scanners; Purple Vision's signal processor-these and many more hi-tech products have all been substantially designed in India.

- Another factor that augurs well for the future is that we are rapidly expanding the infrastructure required for the future growth of this sector-we have already laid out 500,000km of fibre optic network; the other day I had the privilege of inaugurating Param Padma – the fourth generation of Indian supercomputers, entirely conceived and put together in India; we have taken the first giant step in grid-computing: the link between Bangalore and Pune is already operational-soon, the grid will link major research institutions in nine cities.

But we cannot afford to rest for a moment-especially because this is a sector in which technologies change like lightning, and because the very success that our firms and professionals have secured has made them the target of many a protectionist manoeuvre.

What are the trends that our IT industry has to face? What steps should we be taking in the face of those trends?

Telling the trends

The first, of course, is the fact that our rivals are also adding strength to their operations just as we are. Ireland, Israel etc, were traditional centres for the kinds of services we are providing today. Countries such as China and Vietnam are acquiring the competence rapidly. Moreover, there are a slew of countries that will be joining the European Union from may 2004-from Cyprus to several in eastern Europe.

Firms operating in these countries will naturally acquire preferred liaisons with European firms that seek reliable, cheap IT services – the firms will be part of the same economic bloc; there is in a sense the advantage of cultural affinity; there is that much lesser prospect of a back-lash about loss of jobs in the countries that will outsource to them.

And we should not forget that several of these countries have special strengths-not many of us know, for instance, of the great competence countries like Hungary and tiny Bulgaria have in mathematics; few of us know countries such as these had been assigned specific areas during the Soviet period in which they then specialised, and that these specialisations-encryption and surveillance technologies, to take just two instances-today constitute excellent springboards for providing many IT-related services.

Second, as the past two/three years have reminded us, we have to be ever alert to the

vicissitudes of our markets. And that for several reasons. Eighty to 85 per cent of China's software industry is directed at meeting the demand for IT services within China. In our case, almost the same magnitude is directed at meeting demand outside India.

Also, our IT exports are heavily concentrated on a few countries-the US accounts for almost 60 per cent. Recessions, turbulence, backlash in these few countries can thus have disproportionate effects on our firms here.

And how a particular development will eventually affect us is not always evident. The recent recession in western economies, for instance, created contrary pressures; on the one hand, it intensified the pressures on their firms to cut spending on IT solutions and to confine these to activities in which the applications of IT resulted in demonstrable gains in competitiveness; on the other, the recessionary conditions also intensified the pressure on such firms to improve their competitiveness by availing of the unique combination that India offers-that of high talent, low costs and ever-improving infrastructure.

For the same reasons, what effects will the recent revival of economic activity have? Will it entail higher outlays on IT by western firms, and thereby make them source more from India? Or will it loosen the pressure on them to avail of that unique combination?

Third, of course, is the problem that has arisen precisely because of success: backlash. It is real: protectionist legislation has already been introduced in eight states of the US; there is also a move to introduce a "Buy

American Act" at the federal level. Unions in the UK, in Australia have begun agitations against outsourcing functions to India. Moves of this kind are liable to be stoked even more in the coming months. In our principal market – the US – 2004 is an election year: the president and vice-president are up for re-election, so are one-third of the senators and the entire House of Representatives.

Of course, there has already been a major shift of jobs to China in manufacturing, but that does not make this new shift of services any easier. On the contrary, the sentiment is the opposite – "We lost millions of jobs to China, are we now going to lose more millions to India?" The media both reflects and feeds this sentiment: when a firm in the US expands its operations and decides to locate an R & D centre in India, the headline reads, "Oracle moving 2,000 jobs to India".

Moreover, the ones who are getting affected by outsourcing are the more vocal lot – the white collar workers. Many of them are college or high school dropouts; they have little prospect of finding jobs outside operations like call centres. And the location of functions in India this time has occurred during recessionary conditions – quite the opposite set of conditions during which American manufacturing firms set up their establishments in China.

For the past year there have been signs of a recovery – but till the past month the data that was coming out was being used by critics of outsourcing to point out that what was taking place was a "jobless recovery". The result is portrayed in a Forrester study: of every 100 IT workers who have been displaced only 65 have been able to get

reemployed; that 50 per cent of those who got re-employed had to accept jobs at lower earnings. So there is a ready, disgruntled constituency for the politician to exploit, and this is an election year.

Economic trends apart, there is a structural feature of the IT industry that makes for possible difficulties. While IT registered the most conspicuous growth in the US, UK, etc. trade unions were not able to establish themselves in the industry. These organisations feel that outsourcing is the issue on which they can get IT/ITES professionals to sign up.

And the advantages

There are just as many trends on which we can build. First, as we noticed, India's telecom infrastructure has improved dramatically over the past five years. It is set for even greater improvements in the coming years. With the laying of fibre optic networks all over the country, a firm in San Jose, California would find it as easy to access services from a firm in any one of 300 cities in India as from its neighbour across the street.

This expansion is being and will be assisted even more by the recent feature of our economic landscape-namely, intense competition among progressive states, each eager to prove itself to be the better investment destination. Bangalore and Hyderabad are not the only cities that are competing today. Gurgaon, Noida, Kolkata, Pune, Mumbai, Kochi are each trying to woo IT firms. Mangalore, Mysore, and half a dozen others have begun taking the first steps too, and have already begun registering successes.

Second, firms abroad have become accustomed to outsourcing – doing so has become part of the business model of more and more companies. McKinsey interviewed 50 Fortune CIOs a few months ago. None of them reported outsourcing more than 15 per cent of the firm's IT budget to India. But when asked what their plans were for the coming years, 70 per cent reported they would be outsourcing more than 15 per cent to India.

The figures at the other end of the scale were the direct opposite: 73 per cent reported they were outsourcing less than five per cent to India; that figure was down to two per cent when the CIOs were asked about what they planned to be doing in the near future.

Because of my current position, every week representatives of some IT giant or the other come to call on me. One of them after another reports how his firm is doubling and quadrupling staff in its Indian offices: Intel, Microsoft, SAP, Oracle....Indeed, we hear less than what is in fact happening – these days firms that are expanding operations in India forgo the customary launch festivities lest these become occasions for unions back home to ignite scares.

Third, apart from the advantage that flows from India IT professionals having proven the capabilities already, the unique advantage that they have had vis a vis their competitors in China and east Europe is certain to weigh in their favour for quite some time. Firms in China, Vietnam, east Europe can write software, no doubt. The professionals will soon learn to do so in English, no doubt.

But Indian firms are able to provide not just software for transforming an operation. They

are able to provide complete business solutions – something firms in countries such as China, unfamiliar as they are with reigning financial systems and business practices, will take some years to master.

Fourth, a series of new disciplines is about to break out in India for which IT will be what arithmetic is to calculation. Biotechnology, nanotechnology, telemedicine, telesurgery, distance learning, products with embedded software, automated production processes, product design-and many more. Each of these will see a leap in the coming years in India, and in each of them IT will be a basic ingredient.

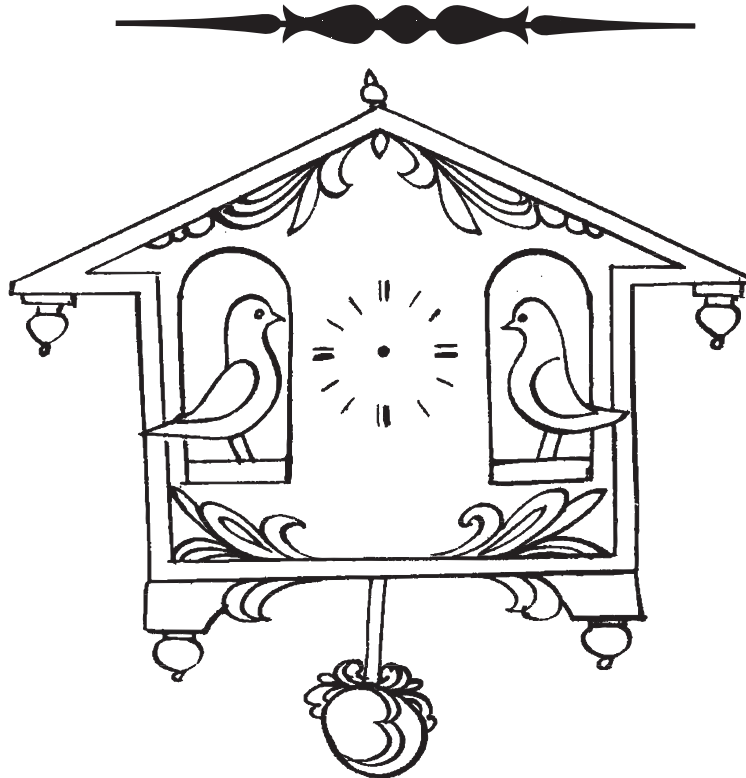
Finally, we are at the threshold of breaking out of a handicap that has hobbled us thus

far: scale. Why is it that a firm like Nokia produces handsets in China but not in India? There are several reasons, of course, but among these is the question of scale: the demand for new handsets has been so much greater in China-at that scale, the firm reaps many economies.

Now that two million new telecom subscribers are being added every month, India too becomes a place that is attractive enough for a potential manufacturer to locate his facilities here. The same will soon be true for products that are used for IT and IT-enabled services.

What should we be doing to build on these advantages?

(TNIE)



India has emerged as the R & D hub for the world and this is reflected by the 1,000 plus patents filed by MNCs based here.

INDIAN INFOTECH NEEDS TO PARTNER EAST EUROPE, TARGET CHINA- PART II

Arun Shourie

First and foremost we have to remember that in today's world no one can afford to rest even for a moment. Especially not in a sector in which technological and other forms of change are as swift as they are in information technology. Recall what happened in Silicon Valley – in a moment so many stars shot off the sky. Recall that the other day Ireland was one of our main competitors in software; it still is today, but it is also a country firms like Wipro now view as a potential market.

Next, the one way to counter the backlash that is welling up is to provide services of such quality, at such cost that the firms in US, Europe etc. that use them become lobbyists for us. They should be telling their contacts in those governments and legislatures that they will be rendered uncompetitive if they are prevented from accessing India.

That is what happened in manufacturing vis a vis China: American firms that were importing from and exporting to China are the ones that worked overtime to ensure sanctions were not imposed on that country in the wake of Tiananmen, with the severity many were urging.

Third, we must go on diversifying our markets. The figure we encountered earlier—that the US accounts for 60 per cent of our IT exports—is not something that should by itself discourage us; perhaps the

US accounts for some similar proportion of the use of IT as a whole. But it should caution us. Germany and Japan are the obvious markets we should target: Germany's IT market is worth \$ 66 to 70 billion; our IT exports to Germany are only \$ 250 million—that is, if you accept our figures; they are just \$50-55 million if you go by German figures.

And as countries like Cyprus, Bulgaria and others join the European Union, forming strategic alliances with their companies, even setting up subsidiaries there can help us vault over such tariff or non-tariff barriers that may be set up in the coming years. They have strengths—for instance, in mathematics. We have strengths from which they can gain—for instance, entrepreneurial skills as well as good knowledge of the markets that have to be targeted.

“And frankly,” says an Indian IT executive who has long worked in Europe and knows it well, “there is racialism. Mounting a campaign, ‘Our jobs are being taken away by Indians’ is easy. Mounting a campaign, ‘East Europeans are stealing our jobs’ will be difficult. Others within Europe will muffle those voices.” So, alliances with those who will be joining the EU. And there is no time to lose—some of them join from the coming May.

One other potential market is the host of western firms that have set up operations in

China. Many of our major software generators supply various kinds of software services and products to their principals outside China: given the fact that they already know the acumen of our firms and professionals, their subsidiaries in China will feel quite comfortable in assigning work to our firms.

Fourth, we can be certain other countries will learn to provide several of the types of services that we have been supplying. And each of them will have advantages of its own. For instance, that we know English has been one of our advantages. Little Mauritius, as its professionals pick up IT, will have an advantage in accessing the French market: Mauritians speak French as their mother tongue.

The Chinese will soon over-come English: and they will do so with the focused pursuit that has become their hallmark—a report said the other day that they had imported 20,000 teachers of English, and that many of them had been deployed in the IT industry: another report said they had decreed that every taxi driver—that should actually read “even every taxi driver” – in Beijing would have to be fluent in English by the time the city hosts the Olympics four years from now.

The lesson is obvious: formidable as our achievements are, as others will start doing what we have been doing, we must continually aim to provide ever more complex IT services and products.

And we can do so. After all, we are among the half a dozen countries that put satellites into space: we are among the few that have manufactured guided missiles; we are among the three or four that have put

supercomputers together on their own; we are among the few that have developed nuclear weapons; our scientists have done excellent work in imaging from space.

Each of these tasks has required software of high complexity. Far from sharing the requisite technologies, software etc. other countries have done everything they could to deny them to us. All of the required software and hardware have devised by our own professionals. So, our scientists and IT companies can.

Indeed, apart from moving to more complex IT products, we should move to integrating the software services we provide with providing complete business solutions. Recall what Indian professionals were able to do to turn the Shinsei Bank around in Japan. There is much that our IT firms can learn from the sort of mutation a firm like IBM is going through. We think of IBM as a company manufacturing computers. The fact is its computers are not “manufactured” at any one site now. What it does by way of hardware is better described as “assembly” – of components produced in many countries.

Even more significant, providing hardware is itself becoming an activity that describes the past of IBM. The Economist reports, “Big Blue (IBM) expects profits to migrate to software and services, and is managing its product portfolio accordingly. For example, it has sold its hardware drive business and acquired the consulting arm of Pricewaterhouse Coopers, an accountancy firm. Slowly but surely, IBM is morphing from a technology vendor with a strong IT-services arm into a business consulting firm

that also sells software and hardware.” (The Economist, May 10, 2003 page 18).

We have much to gain by vastly extending the range of non-IT services that are provided via IT. Lawyers and chartered accountants are ever so expensive in the US and Europe. You just have to get our young graduates of the National Law School to bone upon American or German law, or our accounts to learn the particulars of accounting practices in those countries, and they will provide the high-flying legal and accounting firms there the kind of research and back-up assistance they can't dream of.

And thanks to the advances in IT and telecom infrastructure, that assistance can be provided in real-time, on line. The same goes for medical diagnosis and counselling. And for a host of other specialisations. But there is a prerequisite. A country cannot go on doing increasingly complex things in thin air. Unless institutions of higher learning maintain standards of excellence, and unless they produce persons of requisite quality in large numbers; the country will not be able to maintain such lead as it has acquired.

F C Kohli, one of the pioneers of the IT industry in India, began a presentation the other day with a telling figure. “A few institutes like IIT's together produce about 2500-3000 top class first degree engineers. About 2,000 migrate abroad, another 500 opt for business management.” You can infer how many will be left at the end of the stream for scholarly work in their disciplines.

The numbers signing up for basic sciences – mathematics, physics, chemistry – has been falling at an alarming rate. Such trends have

to be reversed. Many proposals for doing so have been advanced. Among them is the elementary one – of multiplying the sheer number of persons in such disciplines that we turn out: Kohli and his associates conducted a most imaginative analysis of the gap that exists between one of the best institutions in Mumbai and the regional engineering colleges in Maharashtra. And he has devised a concrete—and inexpensive – plan to upgrade the latter so that the number of engineering graduates can be multiplied ten-fold.

Similarly, the smallest changes in government regulations will cause a flood of private investment to come into institutes of higher learning. Why should we have just five IITs? Why should we have only half a dozen IIMs? Why not 50 of each—and each of the standard of the present ones? Reforms in this sphere will repay the government's efforts a hundred-fold in no time. And unless they are brought about swiftly, India will not attain the leadership we talk about in fields like biotechnology, indeed it will lose the lead it has established in IT also.

Several kinds of steps are being taken to counter the backlash:

- NASSCOM as well as our embassies are working with companies that are locating operations in India, and with their associations. Together they are documenting – to senators, to governors, to their staff – the advantages that have accrued to the US economy for instance, as a result of the services that Indian IT companies have provided.

A recent study by the Mckinsey Global Institute estimates that every dollar's worth of labour cost outsourced by US firms creates \$1.45 to \$ 1.47 worth of wealth worldwide. A full \$ 1.12 to \$ 1.14 – that is, 75 to 80 per cent – of this comes back to the US: not just in reduced costs – Mckinsey estimates that costs get reduced by 45-55 per cent of initial costs of the operation, by 65-70 per cent once the business processes too are reengineered; not only in increased revenue – because of the huge reduction in costs, American firms can now go after unpaid amounts that were earlier too small to pursue; on top of all this, the off-shoring provides orders for US firms – a call centre is set up in India, telecom equipment for it comes from...

- WE have to redouble coordination with countries that have as a much interest in accessing western markets as us – including many that are competing with us for this space: China, Mexico, Brazil, South Africa. As happened at Cancun, together we have to convince the developed

countries that we will not open our markets for goods if protectionist walls are put up to block services.

There are other things to which we must pay special attention lest we give a handle to those who are campaigning against outsourcing. An American expert well versed in IT trends in the US, and one sympathetic to India, illustrated this by what he told me the other day. “You are just one privacy incident away from disaster,” he said, pointing to the urgent need for our firms to ensure that the data they receive, the processed data they send back is completely secure.

He pointed to a chilling instance: a firm used to get medical data transcribed by qualified persons in prisons: one of the persons handling the data threatened to use it in an unauthorised way, and that was the end of the arrangement.

What should governments be doing to help the IT Industry grow even faster?

(TNIE)



SCIENTISTS DISCOVER MEMORY SWITCH

A team of scientists has claimed to have identified a “memory switch” that activates the memory storage process in the brain. The findings may provide new clues in comprehending the memory storage process which is not well-understood so far.

Though the “memory-switch” does not immediately offer promise of a memory-boosting pill, it will suggest ways in which memory could be more reliably stored.

The theoretical study was conducted by Bhalla and Iyengar of the National Centre for Biological Sciences (NCBS) in Bangalore.

IT'S WRITTEN, NOW JUST DOT THE 'I' S, CROSS THE 'T' S (Part III)

Arun Shourie

The phenomenal success in IT is the result primarily of the enterprise and innovativeness of our entrepreneurs and young professionals, and of private firms that have spread computer literacy to millions. Government initiatives and incentives have also played a major role. By count there are almost three dozen fiscal incentives the government has given to the software industry—the very ones the industry itself has urged would help it the most.

Similarly, the government has set up 39 software parks. In these, IT firms get all the infrastructure and services they require at one go. About 3,500 firms operating from these parks export Rs.37,000 crore worth of IT products and services—that is, about 80 percent of IT exports.

In a word, the sector is a model of government-private partnership. Some of the things the government has to do in the coming months are implicit in the foregoing—for instance, our embassies and chanceries in the US and Europe must continue to work together with NASSCOM and other organisations to staunch the backlash.

The government has to continue to, and is continuing to, improve the infrastructure the industry requires. Work along other coordinates is also proceeding apace. Attitudes too have changed: government personnel do realise their task is to enable entrepreneurs and technicians to do even better. But every other week I come across some facet that reminds me this is one area

in which the governmental structure can be more forthcoming.

- It professionals do not make much distinction between night and day: in part because they are young, in part because they get seized by the problem on which they are working, in part because when at night they are home it is day for their client in, say, the US.

Each time I go to Bangalore, they tell me that to attend to a conference call from their client at night they have to go back to their office. The telecom people say they do not connect company-leased lines to the telecom network, as this becomes the channel for illegal, grey traffic. But can we not work out some arrangement for these world-class firms? I ask. Negotiations are still on!

- Clients from Europe are loath to spend extra hours, sometimes a day changing flights in Mumbai, to get to Bangalore; they require daily direct flights to Bangalore.

- Firms that operate from multiple locations have complained of problems with local customs officials about soft-bonding of components.

- For persons in this industry, as for many others, a laptop is as much of an accessory as a pen, as a mobile phone. But our regulations require that, each time we go abroad, we have particulars of our laptop stamped on our travel documents.

A while ago, one of the icons of the industry was held up as he did not have the requisite

forms. Passengers in the queue behind him had to intervene.

Such examples can be multiplied. Many of them are minor. Governments must attend to them nevertheless – in part because they are irritants; even more so, to convince those who are doing so much for the country that the governmental structure is sensitive to their needs—I would hope, to an extent even to their whims.

Self-denial as government policy

That we are assisting someone to do his job often leads to the presumption we are also best equipped to tell him what he should be doing and how! Governments are prone to that temptation even more than we are in our personal lives.

One of the reasons the IT and cable industry have grown so rapidly in India is that governments were, in a sense, not looking – or that the growth and mutation were so rapid that governmental structures were not able to decide what to regulate and restrict.

But now that these sectors are so conspicuous, many see features in them that should be regulated! Many miasmas occur to us – “What if...? Should we not tighten pass law ‘X’ to prevent possible misuse? Are the employers all they are made out to be? Are you sure some of them are not exploiting the youngsters employed in this sector?... You just don’t see-so many of them have become so arrogant. They just have to be brought down a peg or two...”

I have been accosted with each of these questions. An example in the public domain will illustrate the apprehension.

The other day newspapers reported a proposal to extend provisions of the Contract Labour Act to the IT industry. The consequences will be apparent from an analogous case.

In the film industry producers do not keep stars and technicians on their payrolls as permanent staff. A film is conceived. A writer writes up the script. Some songster has some songs he has already composed, or conjures up some new ones. Actors, actresses, film crew, sound personnel, film editors come together – each on a contract.

The moment the task is finished, they disperse-only to re-form in some other constellation for some other film.

Much of the IT industry is of the same nature-as and when tasks are secured, professionals are brought together, and they disperse when the job is done.

The industry is also very prone to cycles. This is all the more so in the case of small firms. Even a modest-sized job for them requires a major enlargement of their personnel. Asking the firms to keep this staff on after the job has been done will be the surest way to kill them.

And such laws never work. Look at the result of the Working Journalists Act and the successive ‘Wage Boards’ that have been set up in the newspaper industry. It is well known that the overwhelming majority of newspapers just do not implement the Awards of the Boards.

Not just that. As governments, not wanting to fall afoul of journalists, started making noises about prosecuting papers that were

not implementing the awards, the papers induced, some would say compelled, the journalists to opt for signing fixed term-contracts- a practice that put the journalists beyond the purview of those Wage Boards on the one hand, and made them even more nervous of the employer on the other.

Should we subject the IT industry and the professionals in it to sequences such as this? Does the basic rationale of laws such as the Contract Labour Act hold at all for industries like IT? The rationale has always been that workers engaged on contracts-like construction workers-are lowly paid, and therefore there is a need to protect them through legislation. But professionals in the IT industry are among the highest paid in the country.

So, the first rule for governmental intervention should be self-denial. But there also are things governments should be doing.

Sustaining innovation

My young friend Vedanta Jhaver, who runs an up-and-coming IT firm, Prod-apt, out of Chennai and San Francisco, reminds me of two areas in which governments need to do more. He points out that the largest 20 companies-they constitute 0.6 percent of the number of companies in the industry-account for almost 60 percent of the industry's revenues. The percent contribution of small and medium-sized companies has been falling in the past five six years.

I am not one for reserving things for some segment of industry, nor for propping it up with artificial planks. Cases such as that of small-scale units, of locating units in backward districts, remind us that such assistance almost always backfires:

unsustainable units come to be established; they get to be established at unviable locations; in the end governments are neither able to sustain the "incentives"-tax breaks, price and purchase preferences, reservation of products-nor to terminate them.

Nor am I much awed by that 60-percent figure. In several other industries the figure will be similar. As has been well said, you don't want to penalise the village cobbler for being the only cobbler in a radius of five miles: the larger firms are big by our standards, but they are small when compared to the ones they have to compete against-the turnover of our entire IT industry is \$16 billion; that of a single firm like Microsoft-with just 55,000 employees-is \$32 billion that of IBM is \$81 billion.

So I am not for artificial props. But Vedanta draws attention to the sheer size of the target at which we have to aim. We are told our IT exports have to reach around \$50 billion by 2008. If the large Indian firms keep growing even by 20 percent a year, he says, such targets will not be realised unless the small and medium firms in this sector grow by 40-50 percent a year. At present they are growing at just 10-15 percent.

My apprehension centres on another point. Innovation often comes from inconspicuous, small units, often from isolated, eccentric individuals. Our structures-for instance, our banks and financial institutions-are not attuned to nurturing and supporting such firms and individuals.

The collapse of so many tiny IT units three/four years ago has made bankers all the more wary of extending help to such firms and individuals. But the consequence is even the

more robust units are now fighting for survival.

Vedanta Jhaver points out that, “Very few SME software services companies receive bank limits, and if they are lucky to have one, the interest rates are almost always about 16 percent. The (IT) services sector is viewed by the banking industry as ‘high risk’ and the latter requires collaterals of 100 per cent for even small bank limits.”

The government is encouraging financial institutions to support such a high-risk industry as films-and for good reason: in part to cut the hold of the under-world. The small and medium IT units deserve similar attention-for at least two reasons.

First, as mentioned above, this is the lot that is liable to contribute many innovations. The other reason is one all who remember their Ibn Khaldun would recognise! In the *Muqadimah*, that perceptive seer taught dynasties lose their vigour by the third generation. Firms-even very powerful ones-go up and down at a much faster pace.

As this is a young industry, the great pioneers who have set up the principal firms in India are still directing them. A few years from now they will be handing over to others. Will the firms sustain their dynamism and resilience when that happens?

In any event, it is always dangerous to rely on only a few-all sorts of meteors can strike even the best. That is all the more so in spheres where change is at lightning speed. Sheer prudence, therefore, dictates that the country nurture hosts of innovative firms-so that they can take over should some of

the leaders flag, as wave merges into and takes over from wave.

A host of small things can be done to help them along. For instance, certifications by recognised authorities are vital: potential customers require assurance of excellence, and most often do not have the time to evaluate on their own the worth of a group of professionals.

Governmental help takes the form of assisting SMEs to ramp up their facilities and standards to, say, CMM Quality level V. The government could set up a body for these firms to parallel R.A.Mashelkar’s National Innovation Foundation. It could set up an incubation-cum-innovation fund.

It could prod banks and financial institutions to be more forthcoming in assisting SMEs in this sector. It could initiate some pooling of risks by them as insurance firms do in regard to extraordinary events. Could it spur a special effort by the major purchasers – IOC, ONGC, BSNL, MTNL, to reach beyond the half a dozen established vendors?

Are the latter really better at designing billing systems, say, or are they better at persuading these major clients that they are better? At least in telecom and Posts, I have seen software and hardware supplied by the best known vendors even for standard tasks—BSNL’s billing in north India, MTNL’s Dolphin and Garuda services, elementary operations of the Postal Department-to go woefully wrong so often that I am convinced the mere fact the task has been handed over to some big name is little guarantee it will get done.

Thus: severe penalties in contracts on the one hand and looking beyond the established names on the other.

The Inter-operability imperative

There is another area that deserves attention of our governments. Indeed, it concerns what governments are themselves doing in this sector. Several departments of Central and state governments are installing software for a variety of operations.

And there have been notable improvements as a result: 80 percent of the forms of the Directorate General of Foreign Trade, accounting for 90 percent of total value, for instance, are now filed online; as a result, the processing time of these, which used to be 45 days, has come down to six hours.

Now software is obtained by departments and governments from varied sources-often the choice is determined by no more than the fact that some provider is the lowest bidder in a tender! But the systems must be inter-operable.

In the US when, in the wake of 9/11, terrorists and their financial transactions and

those of their front organisations had to be tracked down one of the problems was the systems of different agencies of the government-FBI, Internal Revenue, Immigration and Naturalisation Service-could not 'talk' to each other. The systems being installed in our department are also stand alone systems. To take a simple instance, system housing data relating to passports, visas, immigration and applications for them cannot at present communicate with each other.

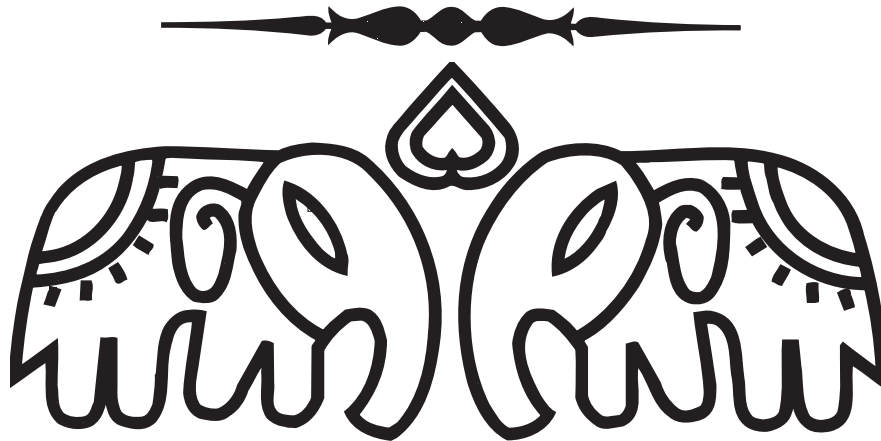
In the United States, in the United Kingdom, in Germany governments are having to spend billions to make their systems interoperable.

In a sense, we have the advantage-such systems are just being installed.

Ensuring inter-operability at this stage will be much less expensive than vaulting over the silos will be five to 10 years from now.

Therefore, ensuring inter-operability-at least of the critical systems-should be one of the priorities in the coming year.

(T.N.I.E)



“Made in India” is increasingly finding global respect with more global retail chains sourcing from India.

IT NEEDS DEMAND, INDIA DEMANDS IT

(Part IV)

Arun Shourie

We have done exceedingly well in software. Incentives given by the government have helped. The 39 Software Technology Parks that it created, and in which information technology firms could get world-class facilities under one roof, have been decisive: 80 per cent of IT exports originate from units operating out of these 39 parks. The task is to now replicate this kind of success in the hardware sector.

For that we have to go many miles farther than we would have had to a decade ago—when some of the companies came to set up their production facilities here, and we turned our noses up. For by now they have already established their factories in China, Malaysia etc. Why should they not expand those operations, why should they not set up their next factory in those countries rather than pick up their bags and come to India? They will do so only if what we have to offer them is decidedly better than what they actually have in their present locations.

That is a lesson we still have not learnt. The other day the lead story running across the front page of Business Line was “trade unions setting their sights on IT sector”. The familiar litany: “anarchy”, “the conditions are worse than the exploitation seen in villages”; labour laws are being violated; “feelings of insecurity, humiliation”....

Should the unionists succeed, all that will happen is that firms in Europe and the US that are outsourcing to India, firms that are setting up R & D centres here, will conclude that locations in India cannot be relied upon for uninterrupted work.

Take the simplest example. Women are not to work at night, many activists insist. But a call centre for the US must function when that country is awake—that is during the Indian night. A union demanding that such operations be outlawed will only be, to use the phrase much-favoured by Lenin, “objectively” serving the interests of those in the US, UK etc. who are out to block outsourcing to India.

Nor it is just a question of enforcing one demand. Even more important is the general atmosphere of the sector, penumbra around an investment destination. And a reputation once acquired lasts long after the reality has changed. West Bengal today is a fairly peaceful place in which to operate a factory. But the reputation that is acquired because of militant trade unionism in the 1960s and 1970s keeps investors away till this day.

Ironically, the way out has been shown by none other than the government of West Bengal. While CPM representatives in Delhi have been shouting about the right to stike being a fundamental right, of it being the bulwark of democracy itself, the CPM Government in West Bengal has notified

India is to export 40 lakh tonnes of Soya Beans in the financial year 2004-05.
--

information technology to be a “public utility” –thus putting it beyond the mischief of strikes and bandhs.

The general reputation is thus all-important. But it is not enough. The individuals, who are going to make the crucial decisions, have to be convinced- “one by one, little by little, again and again”. So we have to orchestrate board-room presentations to this handful.

And this is best done by entrepreneurs and not by ministers and civil servants. The latter cannot carry the conviction that the entrepreneur, who is actually operating a successful manufacturing facility in India, can. This is exactly the sort of team we are organising in the Ministry of Information Technology.

Creating Domestic Demand For It:

Eighty-five per cent of India’s IT industry, as we saw, is for exports. Observers often contrast this with China: there the position is the exact opposite-85 per cent of its turnover is for the domestic market. This is doubly undesirable, they say – on the one hand, we are not availing of advantages that would accrue were we to introduce IT in our lives and operations in a big way; and, on the other, our IT industry remains at the mercy of fluctuations in economies abroad.

I am with them up to this point, but not with the inference they draw from these figures, namely that, “The main demand has to come from government. Government should take the lead and redouble its plans to introduce e-governance.”

There already is an instruction to ministries that they must earmark three per cent of their budget for modernising their operations by

inducting information technology. I am not much for such earmarking-comparable figures can be cited for other sectors. “In developed countries x per cent is spent of R & D, in India it is only x minus y per cent.... In developed countries x per cent is spent on health...on education, in India it is only x minus y percent...”

But one should avoid putting a sector on artificial respirators. One should especially avoid habituating a sector that has shown such inventiveness and resilience as our IT industry to respirators. The way to develop a large domestic IT market is for the industry to come up with solutions and products that meet real needs.

Many of the problems that some of our manufacturing firms have faced have arisen because they proceeded the easy way: a product has made good in some developed country: get the firm abroad to sign a collaboration agreement to produce that item with the technology that the firm has used abroad.

The danger is particularly acute in spheres such as IT in which technologies change in a blink, in which what technology will make possible tomorrow is far beyond what we can imagine today.

In such spheres there is often the temptation of plenty. Everything seems worth doing. Someone in government or in a firm hears of something that has been done somewhere—sometimes he even thinks up some bright application! As he is in high office or has resources, work on that idea commences. Substantial sums are spent developing and then installing that application.

But when after a few years it is seen that such pursuits did not yield any concrete benefit to people, the applications discredit the new technologies, they compound cynicism.

Therefore, “Fewer but better”—another phrase much favoured by Lenin! That is the strategy the government has adopted for the coming year after a presentation to the Prime Minister.

For the same reason, outside government also, we should address specific, and urgent needs of our people.

- One can think up many fancy applications for e-governance, for instance. A few hundred applications have been developed and adopted in different parts of the country. Some of them are scarcely used after being developed and installed. Others have already made a perceptible difference.
- The Bhoomi project in Karnataka, under which all land records have been digitised is an example—the farmer can secure the title documents etc. he needs for selling or buying property, for raising a loan without having to wait upon the patwari.
- We cannot hope to provide in the foreseeable future continuous Internet connectivity to persons in remote settlements. Our ministry has, therefore, provided a grant to IIT Delhi to develop technology for an innovative solution: a kiosk in that remote village can be set up to provide a series of services—birth and death certificates, title documents etc; e-mail messages too can be keyed in from the kiosk; an antenna is affixed to a bus and a processing unit is installed in it; when the

bus passes near that area, it electronically delivers the documents that have been sought, the e-mails that have arrived and it collects the e-mails and requests that have been fed in at the kiosk.

- Similarly, by installing tele-medicine infrastructure and software, the Apollo Hospital chain has enabled patients in distant, isolated communities—in Nagaland—to receive the best medical diagnosis and advice from any of its 27 hospitals. At those hospitals, the best specialists take turns to be available for providing advice.

- Eighteen languages are recognised as official languages under the Constitution. To enable people to access these new technologies, software has been developed by C-DAC that transforms text—and will soon convert speech—automatically from one language to another. This software is now being developed for mobile phones—so that you can send your e-mail in English; your friend, who would rather receive it in Hindi, will receive it in that language.

- The script of Indian languages is phonetic. That of English is not. Therefore, software—Shakti—has been developed by an IIT Chennai-based group by which, while I type on a standard English keyboard, the computer transcribes and prints the text in the script of the Indian language.

- Incidentally, Shakti illustrates the potential in other ways too. Its office suite does all the things that the office suite of the dominant company does. It does more—by a mere click you can have the toolbars etc. turn from English to Indian languages. The suite of that foreign major costs Rs.25,000 apiece. Shakti provides the equivalent for Rs.1,800!

- Many of us cannot read print—either because we are visually impaired or because

India's Food Processing Industry is valued at 1.50 lakh crores of rupees.

we are illiterate. WEBEL in Kolkata has developed software that scans a page, transforms it into electronic text, and prints it out in Braille.

C-DAC in Pune has gone one step further. It has developed software that transforms text into speech. This has already been done for anything available in electronic form-for instance, a person, who is blind, can by just a click or two get to his favourite newspapers on the Internet, or someone can reach that for him, and the computer reads out the paper to him.

- Similarly, one of the doyens of the IT industry in India, F.C.Kohli, has developed methods for making people literate using IT. The methods are bound to spell a revolution. Even the illiterate adult knows language; he has picked it up as he has grown. What many of them do not know is how to recognise in print the word they know.

The conventional method of instruction has been to teach such a person to read by first getting him to learn the alphabet. But the method that has been used extensively for handicapped children is different; it exposes her or him to the word as a whole, almost as an icon; simultaneously, the person hears the sound and sees a depiction of what the word connotes.

Instead of learning “umbrella” by learning “u”, then “m” etc. the person is shown the entire word. Simultaneously, the computer pronounces the word. And shows him a picture of what an umbrella does.

Through this “total immersion”, and capitalising on the fact that a vocabulary of just 500 to 700 words is sufficient for reading

the average, daily newspaper, almost 40,000 persons, who were illiterate, have, in Kohli’s experiment, been brought to a level that they can now read newspapers on their own. This has been done through instruction of just an hour to an hour and a half a day for just 10 weeks.

The advantages of the approach are obvious. The shortage of teachers has been overcome. The person is able to choose the time at which she can come to the place for learning. “Literacy” in this experiment means not our conventional definition-someone who can sign his name; but one who can read a newspaper unaided.

Kohli estimates that 300 to 400 people can be made literate with one computer in a year. If only we are allowed to import a million second-hand computers, he says, we can wipe out illiteracy from the country in little time. And he is the sort of person who can actually get the IBMs and others to donate those million computers free!

Such examples can be multiplied. The point is that even as, and specially because, the new technologies make so many things seem attractive, we should sharpen our focus, and concentrate efforts on those projects that will spell immediate benefits to vast numbers, and which will lift them into a more enabled world. Demand for IT will follow as a matter of course.

And there are avenues upon avenues in which applications of IT will pay rich dividends for the country:

- Embedded software, specially in defence;

- Major outlays on weapons are inevitable;
- These weapons will be increasingly sophisticated-guidance systems, sensors, timers, robots, imaging from space: the list is endless, and each item in it requires IT inputs;
- No one is going to give us the relevant technologies-hence this huge market is a virtual preserve for Indian researchers and industry.
- National security: several countries, in particular China, are working on ways by which progressively integrated economies and systems can be disabled using IT. To forestall such attacks we have to develop firewalls, sophisticated encryption methods, the ability to track down attacks.
- Product design-for example, two-thirds of the components used by Daimler Chrysler are being designed in India. This is a field in which the combination of expertise, cost and infrastructure that India can deploy gives it a unique advantage.
- IT in combination with other disciplines-biotechnology, drug discovery, robotics, optics.
- IT used to deliver other services-in addition to software and call centres, we should use it to deliver research and advice in law, accountancy, medical diagnosis and prescription, architecture, risk analysis for banks, analysing claims for insurance companies.

Final Point: One final point. In many of our research organisations research is going on – and on. We should take up a few projects in what the president calls “mission mode” and bring them to a swift conclusion. The four that occur to me are:

- Use ICT to abolish illiteracy;
- Develop the Universal Networking Language-so that a person can put his data or message on to the Net in any of our 18 languages, the machine should translate it into the Universal Networking Language, and his friend in another state should be able to receive it in his own language;
- Bring text-to-voice and voice-to-text software to perfection so that worlds from which they are today shut out are opened to the print disabled;
- Today one of the severest impediments to enabling people to avail the benefits of the new technologies is the expense of laying the infrastructure to the door-step; we should complete research that would enable wireless signals to go to a multiple of the 50/60 kms they traverse at present. Each of these will spell untold benefit to millions. Together, they are worthy of India, they will make India beacon for the world-in this field, of course, but also in compassion for the handicapped and the distant.

(The New Indian Express)



Garment exports from India during the first four months of 2004 stood at 498.8 million pieces valued at \$1,970.1 million.

Indians in America have a median income of US d 60,000 a year way above the National average of US d 39,000 and at the very top among all communities.

NATIVE EFFICIENCY

Karma Yogi

It is an acknowledged fact that in matters of efficiency the USA and India are poles apart. It is an unseen truth that the native Indian efficiency is far superior to any other. It is a truism of life that, if such a fact is true, somewhere, in some measure, a little of it can be seen. If Indians look for such expressions, they will certainly find something somewhere. Of course, there are many silver linings. The actual truth is we look up to American for everything. An eminent speaker at a convocation said, "We all want to go to the USA. Very soon a day will come when Americans will wish to come to India. Not that we have no talents, but we are unaware of them."

Some months ago, a bank held a three-day Expo to grant housing loans. Next to that building a newspaper under the immediate guidance of an American expert held another Expo for another purpose. It was a success. A few days later, two people, one from the bank and the other from the newspaper met and discussed their respective successes. In those three days that bank had granted loans to the tune of 144 crores on the spot. When

the American expert heard of it, he said, "It would take a few months in my country to accomplish this feat. I never realized Indians had this efficiency." He does not know what happened. Nor do we.

I guess in times of emergency, organizations like banks give a long rope to their employees. This means they are not bound by the very strict procedures of the organization during that period. Once that is granted *defacto* or *dejure*, the employees come to the surface. Basically they act within the rules of their organisation but on the spot they exercise their discretion. It means to me there arises an unconscious occasion for the Indian to be in his elements, unfettered by the dead rigidity of the alien bureaucratic organization.

I see this as one of the silver linings of our Future. These are occasional sparks. What will happen when India is determined 1) not to imitate other nations thoughtlessly. 2) to discover her original spiritual strength and 3) to fashion a national ORGANISATION that expresses our genius through modern technology? (The New Indian Express)



33,23,025 tonnes of oil meal was exported by our country between April 2003 and March 2004.

ARRE YAAR, NOW IT IS IN THE OXFORD!

[The world learns Hindi so that it can communicate with India]
 ‘The Hindi words likely to find a place in the English dictionary are;
 accha, aloo, arre, chuddi, desi , filmi, very filmi, gora, jungle and yaar

English is being spiced up with-sprinkling of some more words from Hindi.

In the latest edition of the Oxford English dictionary, there is already a host of Hindi words, including ‘Angrez’ (English person) and ‘Badmash’ (naughty) while many more are being entered into the Collins Bank of English, which screens words for entry.

The Hindi words likely to find a place in the English dictionary are: achha (ok, or is that so?), aloo (Indian potato), arre (used to express surprise), chuddi (underwear), desi (local indigenous), filmi (related to Bollywood), very filmi (drama queen or king), gora (white person), jungli (uncultured) and yaar (friendly from of address).

According to a report in ‘*The Observer*’, Arfaan Khan, a linguist based at Reading University, told a major conference at the University of Newcastle this month to expect a “whole new dialect” to emerge. “This will be an increasing trend,” said Jeremy Butterfield, Editor-in-Chief of the Collins Dictionaries.

“If new words are used enough, they will end up in the dictionary, and once they are there they become English words, too. With our increasingly multi-cultural society, in 50 years English will have adopted a mass of words from all the different cultures living on this island.”

And those who complain about the loss of the purity of the language are simply misguided, according to experts.

“English is a mongrel language, and always has been,” said Butterfield. Many Asian words have already been naturalized into English, bungalow, cheetahs, ganja have all been shipped over from the sub-continent.

It is within ‘culinary speak’ that the largest changes are expected. “The British food habit has been transformed by the arrival of Asian people in the community,” said Mahendra Verma, director of Hindi programme at York University. “The words are entering local vocabularies. Masala is replacing spice, mooli means white radish, and the word balti is actually Hindi for the type of pan that the dish is cooked.”

Accepting the words into the dictionary will also help British viewers to understand what is being said when actors in Anglo-Indian comedies use Hindi and Urdu phrases, the report said. Spoof television programmes such as the “*Kumars at No.42 and Goodness*”. “*Gracious Me*” have had a massive influence on English, with dictionary compilers keeping an eye on the lingo.

A study in Birmingham, looking at mixed groups of Punjabi Sikhs and whites in youth clubs, found that white teenagers quickly absorbed derogatory Punjabi words to use as insults.

(The Hindu)

PRESENT HIGHLIGHTS

Jayant V.Narlikar

Let us briefly look at the present state of science in India. On the positive side we may cite the following:

Progress in agriculture, including the green revolution: This slowly but surely transformed the nation from having to move round with a begging bowl to worrying about how to store the reserve food grains. This is no mean achievement considering the rising population, which has nearly tripled since Independence.

Ayurveda: Thanks to the awareness of intellectual property rights, we are now waking up to our as yet sporadically explored native medicine. For instance, in 1995 the US patent Office granted a patent to two non-resident Indians at the University of Mississippi Medical Center in the US for the use of turmeric for healing purposes. This was challenged by the CSIR, New Delhi, on the grounds that turmeric had been used in that capacity in India for thousands of years and as such the patent lacked novelty. This case was accepted, and the patent was revoked in 1997. The example of the turmeric patent brought home to us the need to protect the ownership of our ancient knowledge, as also doing more work to extract any hidden gems beneath a whole lot of ritualistic methods.

Venture funding: The CSIR has introduced this concept to encourage now inventors with bright ideas. It is bound to yield positive results in at least a few cases. The CSIR has also encouraged closer contact between laboratories and industrial plants by requiring its laboratories to raise a considerable fraction of their funds through interactions with industry.

Biotechnology: India has responded quickly to this growing field. It set up a separate government department of biotechnology in the late 1980s and has also created laboratories and a project mechanism to promote research in this field.

Space programme: India's achievements in space with recent successes in satellite launching technology have created self-confidence that will prove valuable to greater challenges that lie ahead. Even lunar missions are now being talked about, with the inevitable discussion as to whether a poor country like India can afford such 'luxuries' of research. Not only can we afford these leaps of basic science, but we also stand to gain from them. Indian Space Research Organization's record in this respect has been excellent, its work in remote sensing and communications technology standing as just two such examples.

(Extracted from "The Scientific Edge"
Penguin, New Delhi 2003)

Computer software and services exports from North India last year (2003) were to the tune of Rs.4,500 crore while hardware exports were worth Rs.301 crore.

TOP TEN ACHIEVEMENTS OF THE CENTURY

Jayant V.Narlikar

In a roughly chronological order, here are what I see as highlights of Indian science in the twentieth century:

1. Srinivasa Ramanujan, discovered by the Cambridge mathematician G.H. Hardy, whose great mathematical findings were beginning to be appreciated from 1915 to 1919. His achievements were to be fully understood much later, well after his untimely death in 1920. For example, his work on highly composite numbers (numbers with a large number of factors) started a whole new line of investigations in the theory of such numbers.
2. Meghnad Saha's ionisation equation (c.1920), which opened the door to stellar astrophysics.
3. S.N.Bose's work on particle statistics (c.1922), which clarified the behaviour of photons (the particles of light in an enclosure) and opened the door to new ideas on statistics of Microsystems that obey the rules of quantum theory.
4. C.V.Raman's discovery that molecules scatter light (c.1928), which became known as the Raman Effect. It is used to study the internal structure of molecules.
5. G.N.Ramachandran's work in biology (c mid-1950s), for which he is considered one of the founders of the rapidly developing field of molecular biophysics.
6. The Atomic Energy Commission's development of atomic energy power and nuclear capability through a dedicated programme (founded in the 1950s).
7. The green revolution in agriculture (the 1960s and 1980s).

8. Development of space programme and satellite fabrication/launching capability (from the late 1970s).

9. Work in the various labs on high-temperature superconductivity (since the late 1980s).

10. Progress towards transforming the Council for Scientific and Industrial Research (CSIR) labs' orientation from workbench research to industry and the marketplace (since the late 1990s).

From this list we can see a shift since Independence from the individual scientist to organized science. Leaving aside the hype of 'third largest scientific manpower', Indian scientists have individually done well-even excelled-in their chosen fields at the international level. However, the individual achievements represented by the first four in my above list, which could be considered in the Nobel Prize class (although only one could get it), have been rare and hard to match'.

It is generally argued that Indians have done better when abroad in a developed country, and the cases of Subrahmanyam Chandrasekhar and Hargobind Khurana are cited by way of examples. However, leaving aside Nobel laureates as somewhat exceptional cases, if we look at the next range of scientists, we find that native Indians are not far behind their non-resident counterparts. One way to judge this is to look at memberships of foreign academies and honorary memberships of professional societies. We find that native Indians have

been so honoured and awarded in fair number. Another criterion of recognition is through the official positions at the apex bodies of the International Council of Scientific Unions with its respective member union organizations. These memberships including leadership positions are tokens of the scientific reputation of the persons concerned, and here too natives have done as well as (perhaps even better than) the non-residents.

In this day and age of recognition, citations of work in scientific publications are given importance, and here Indians have not fared well. The citation rate overall is low and also falling year by year. However, one should remember that even Europeans complain about being ignored by the Americans in citing their work. Given the economic disadvantage one starts with in the present era of high-budget science, one should view the performance figures of Indian scientists more sympathetically than is usually done.

(Extracted from "The Scientific Edge"
Penguin, New Delhi 2003)



SECOND BIG RAJASTHAN OIL FIND

British oil and gas firm Cairn Energy has revealed a second big onshore find this year in India.

Mangala, discovered through a well called N-B-1, is 60 kilometre north-north-west from Saraswati in Rajasthan. It has estimated oil in place of 450 million to 1,100 million barrels and carries a preliminary reserves estimate of 50 to 200 million barrels.

The find on the N-A-1 well, eight kilometer away from N-B-1, looks smaller, but still significant for Cairn, with estimated oil in place of 130-470 million barrels and preliminary recoverable reserves of 20-80

million barrels. This discovery will add further material value to their portfolio,"

Mangala field alone could produce 50,000 barrels a day. Other potential fields in the new northern basin it is now drilling could provide up to 100,000 barrels, significant for booming and energy-hungry India which buys in 60 to 70 percent of its needs.

The union petroleum minister said, "I am really very happy because this comes as the seventh discovery in the same block. And now taken together with Mangala discovery (N-B-I find), this is the biggest discovery".

(Reuters)



8,000 tonnes of paper has been saved by using electronic voting machines for the general elections in India.

TELECOM REVOLUTION IN INDIA

During the ongoing era of economic reforms, Telecom sector reforms have been a success story, under a scenario of competitive growth shared by the public and private sectors, on the one hand, and the regulated environment, on the other. The planners had realised early that without a globally competent and efficient telecommunication system, the process of globalisation of the economy would be incomplete. Hence, this was perhaps the first sector that got adequate attention during results. From an outdated and inefficient system, the telecom sector has emerged as the state-of-the-art system of international standard within a decade. But the revolution has just begun.

Need for Reforms

TELECOMMUNICATION is among the prime support services needed for rapid growth and the modernisation of various sectors of the economy, apart from improving the quality of life. It was during the Eighth Five-Year Plan (1992-97) that the exercise to modernise this crucial sector began. Till then the achievements in this sector were just modest. Prior to that, till the year 1988, India was among the large number of Asian and African countries that had a tele-density (number of telephones for every 100 persons) of less than one, at 0.52. This density in the developed countries of North America and Western Europe was about 50. At that time countries like Pakistan, China, Malaysia and Brazil had tele-density of 0.7, 0.78, 7.37 and 5.5 respectively.

But in terms of growth of direct telephone lines, during the years 1979 to 1989, the growth rate was 8.4 per cent, which was much higher than the growth rate of 3.5 per cent in the USA, 5.7 per cent in Europe and 5 per cent in the entire world. The reason was obvious. In real terms, before mid-seventies, tele-density in India was virtually negligible and it was at around that time that the country began to experience real growth in this sector. It is because of huge population, poverty and large geographical size of the country that the growth of telecommunications has remained low in the past. But traffic density in the telecom sector in India today is among the highest in the world. This has made telecommunication an attractive proposition for the private sector as well as the foreign investors in India.

Till the beginning of the Eighth Plan in 1992, the investment in the telecommunication sector in India was quite low, at around two per cent of the GDP. Hence, when the government decided to reform this vital sector in India, it allowed liberal inflows of the Foreign Direct Investment (FDI) in this sector. New technologies employed during the Eighth Plan including digital switching systems, co-axial and optical fibre systems in long distance transmission and digital microwave. There were a few reforms in the services, availability of exchanges and availability of lines also. Availability of telephone on demand appeared to be a distant possibility at that stage.

Eighth Plan objectives included provision of telephones in all the Panchayat areas of

India-one telephone in all the villages by the year 1997, one PCO for every 100 households in India, laying of 2,000 km of lines, introduction of mobile cellular services, providing e-mail services, radio paging, video conferencing, etc. With a view to achieve these targets, which appeared to be quite ambitious at that stage, a new Telecom Policy was announced during the eighth Five-Year Plan in May 1994, which envisaged addition of 100 lakh direct exchange lines so that by the year 1997, telephone on demand could be provided to the prospective subscribers. Private sector was also assigned an important role in achieving the Eighth Plan targets of the Telecom sector. During the mid-term review of the Eighth Plan, encouraged by the achievements, the government jacked up several targets. The target for creation of new trunk capacity was enhanced from 2.72 lakh lines to 7 lakh lines and the same for optical fibre system was increased from 2,000 route km to 4,000 route km. Even these targets were exceeded substantially at the end of the Plan.

Present Status

Achievements in the Telecom sector during the Eighth and the Ninth Plan have been substantial and qualify to be termed as a revolution. The growth has been rapid in terms of quantity, as well as quality, with public and the private sectors growing simultaneously. Significant progress has been made through the Telecommunication Regulatory Authority of India (TRAI) in easing out the procedures and cleaning up the regulatory hurdles. With the introduction of healthy competition between various categories of operators, the prices of long distance calls and mobile services are on the

decline. This is despite the fact that adequate user charges are levied.

The present communication system in India, particularly in the urban areas, can compare to the best in the world. As compared to about one lakh telephones in the country in the year 1947, the number has now grown to well above 400 lakhs, with the tele-density growing to about 4 per one-hundred of population. Growth rate in this sector, particularly the cellular segment, has been outstanding. As per the economic survey for the year 2002-03, during April-December 2002, 19 lakh new landline phones were added. This figure was 26 lakh during the same period in the year 2001-02. But this decline of 7 lakh over the previous year's has been more than compensated by the cellular segment in which 33 lakh new cellular phones were added during the same period, when compared 19 lakh addition in this segment during the same period in the previous year. This represents a whopping 73.7 per cent growth in this segment. If the addition of 7 lakh new WLL (Wireless Local Loop) connections are also added, total growth in the mobile segment comes to around 110 per cent!

With about 25,000 exchanges functioning in the country, in most of the urban areas the telephone is available on demand. Waiting time in rest of the areas has gone down considerably, mainly due to the mobile revolution, under which the number of cellular users is growing in leaps and bounds. Over 90 per cent users in the country, added after 1994, have access to STD facilities and there are more than 8 lakh PCOs in the country, out of which about 6 lakh are in the urban areas. Private companies like Bharti, Tata, Reliance and Connect have been

granted the licences as basic service providers, offering healthy competition to BSNL and MTNL.

All this has been possible due to several reform measures undertaken since 1991. The process of fundamental institutional and structural reforms began in 1991 when the Telecom equipment manufacturing was completely deregulated. Value added services, including the cellular services, were thrown open to the private sector in 1992, followed by opening up on basic services to the private sector in 1994. TRAI was set up by the government in 1997. As a major reform, the Department of Telecommunication (DoT) was bifurcated about three years ago and the policy formulation function was retained by the Department, while the operational network of the DoT was corporatised into Bharat Sanchar Nigam Ltd (BSNL).

A new policy for Internet Service providers (ISPs) was introduced in the year 1998, under which the private service providers were allowed to enter this field, breaking the monopoly of the VSNL. Any private company that wants a licence as an ISP can go in for foreign equity upto 49 per cent. The licence fee is virtually nil and a company can obtain any number of licences. ISPs were free to fix their own tariff, subject to review and fixation by TRAI at any time. Earlier, Internet telephony was not permitted, but recently the government has decided to open it as a cheaper option for international communication.

It may be observed that during the past about five years, Telecom sector has been revolutionised. Telecommunication of global standards, be it cellular or basic, are available

to the users in the country. The number of users is growing at a very brisk rate and in the next one decade, the tele-density in India may be as high as 15 to 20 per hundred of population. With the advent of WLL services, which are the cheaper mobile option, the number of mobile users in the country is expected to increase even more rapidly.

Telecom Sector has been benefited largely from the FDI inflows. As per Economic Survey for 2002-03, during the period August 1991 to June 2002, 831 proposals of FDI worth Rs.56,226 crore were approved and the actual inflow of FDI was Rs.9,528 crore. In terms of approvals of FDI, the Telecom sector is the largest after the energy sector.

Future challenges

Telecom continues to be a high priority area for the policy makers. Among the fastest growing sectors of the economy, this sector is potentially profitable. With the traffic higher than the global standards on Indian Telecom channels, the private companies are vying with each other to gain a larger share in Indian market. Healthy competition among the multiple telecom players, stronger role of TRAI and competitive policies should be the goals of this sector in near future.

Investment in the Telecom sector by the private parties was quite high during the Ninth Plan and it is expected to play a dominant role in overall investment in the economy even during the Tenth Plan. Since the rate of return in this sector is quite high, the quantum of investment by the private sector is also expected to be high.

A few bottlenecks in the policy, however, are required to be smothered. Rural connectivity in the country continues to be an area of serious concern. While the private operators are more than willing to venture into the basic, cellular and WLL services in the urban areas, they are not interested to expand to the rural and backward areas, where the telecome traffic is low and the traffic is low and the tariff rates are also lower. The private operators in basic services should be required to provide some percentage of their lines in the adjoining rural areas. The numbr of village public telephones should also be enhanced and the facility of satellite telephones should be provided by the government in very remote and less populated areas.

Indian Telegraph Act is utterly outdated and needs wholesale revision, in tune with the present policies. Advances in technology and present and future requirements of industry must also be taken into consideration while enacting a new legislation. Though some steps have been taken for rationalisation of procedures by the TRAI, yet tariff structure is still unbalanced, with cross subsidisation of local calls with the long distance calls.

The connectivity issues and the operational problems being faced by the cellular operators and the basic service providers must also be attended to on priority and suitable corrective measures should be taken. Attention must be paid to ensure that India emerges as a major manufacturing base and major exporter of Telecom equipment. Encouraging multinationals and joint ventures in this field, would go a long way in ensuring this.

India is perceived to have comparative advantage in the field of Information Technology (IT) and IT-enabled services depend largely on high quality telecommunication infrastructure. A real challenge in this field is rapid technological changes, which lead to major changes in the structure of telecom industry all over the world. The Tenth Plan Document aims at convergence of voice and image transmission facilities. Use of wider bandwidth and high speed Internet connectivity would add new dimensions to infotech and entertainment. Such coverage with telecommunication is possible only after an integrated Convergence Bill is passed by the government. (The Competition Master)



As estimated 100,000 Indian nationals working in Singapore remit about S\$27 million every month back home.

PHENOMENAL RISE OF THE SERVICES SECTOR IN INDIA

The outset of the process of reforms witnessed an era of rapid economic growth in India. Even during the eighties, the growth rate of the GDP had been around 6 per cent, which was quite high as compared to the first three decades of planned economic development. However, this two-decade phase of high growth rate does not only bank upon the high growth rate of the industrial sector, but the growth has been outstanding in the services sector too. In fact, in the year 1995-96, for the first time after independence, the share of the tertiary sector in the GDP surpassed the total contribution to the GDP made by the primary and the secondary sectors taken together. Even at present, the same trend continues. The implications of this unique trend are multifarious.

Unmistakable Trend

The trend was clear even at the beginning of the decade of eighties. The relative share of the primary sector (i.e., agriculture and allied services) in the GDP rapidly declined during the last two decades, and as per the 1998-99 report of the Reserve Bank of India (RBI), on currency and finance, released in December 1999, its share of 38.1 per cent in the GDP in the year 1980-81 declined rapidly to 30.93 per cent of the GDP in 1990-91 and further to 26.83 of the GDEP in 1998-99. In case of the secondary sector (including industries, manufacturing, mining and quarrying, electricity, gas and water supply), the trend has been mixed. Pre-reform era witnessed considerable increase in the share

of the secondary sector in the GDP, which increased from 20.91 per cent, in 1990-91. Thereafter, however, the share of this sector declined gradually but steadily and is hovering around 22 per cent for the last three years. Services sector, however, continued to contribute increasingly to the GDP, which was about 41 per cent in 1980-81, crossed the figure of 50 per cent for the first time in 1995-96, and has been slightly above 51 per cent during the past two years.

As per the classification adopted by the government of India, services sector includes the construction activities, trade, hotels, restaurants, transportation, storage, communications, financing, insurance, real estate business, community services and social services. It is admitted that in a developing economy, industrial growth is of vital importance. But equally important is the services sector, which includes all important infrastructure services like railways, communication, transportation, storage, banking and insurance activities. It has also been recognised that trade and industry cannot come to the international standards if the supporting infrastructural back up is not available in the economy.

If the trends of the growth rates of the three major sectors is also taken into consideration, the past two decades have witnessed high growth rate of industrial and services sector, while the growth rate of the agricultural and allied sectors has hovered around three per cent per annum. As per the RBI report, the trend of the growth rate of

the GDP during 1980-81 to 1990-91 was 5.5 per cent, which increased to 6.9 per cent during the post-reform era, i.e., in the period 1993-94 to 1998-99. During the same period, industrial growth rate increased from 7.6 percent to 8.3 per cent. Services sector was not far behind and its annual average growth rate rose from 6.5 per cent to 7.9 per cent during the respective periods.

Certain sub-sectors within the services sector are growing even faster. The RBI report reveals that while the contribution of the construction sector to the GDP has remained stagnant at around 4.5 per cent during the past two decades, there has been significant increase in the contribution of Trade, Hotels and Restaurant sub-sector, which increased from 12.02 per cent of the GDP in 198-81 to 15.66 per cent in 1997-98. The share of Transport, Storage and Communications also increased smartly from 4.68 per cent to 7.61 per cent of the GDP. While community and social services have remained static, at around 11 per cent all these years, the share of the sub-sectors of Financing, Insurance and Real Estate rose significantly, from 8.81 per cent to 11.44 per cent between 1980-81 to 1998-99.

Most of the developed countries in the West have experienced rapid economic development due to their outstanding achievements in the industrial sector. So far the experience of economic development in India has been quite different. While the industrial sector has continued to develop at a steady pace, the service sector has also developed with a matching pace. This trend has wider implications for employment and trade prospects and there is an urgent need for taking policy initiatives towards

introducing greater competition and efficiency.

Vital Sector

Currently, infrastructure development is the main thrust area in the economy. Further, with a view to provide a human face to the process of reforms, the social and community services have assumed enormous importance. Since both these sub-sectors generally form part of the service sector (except electricity, gas and water supply which fall under the industrial sector), this sector has emerged as one of the key areas for rapid development during the Ninth Five-Year Plan.

Most of the projects of infrastructure development are marked by relatively long gestation periods. Completion of ongoing projects in the service sector, which are linked with infrastructure, has to be ensured to avoid cost and time overruns. Adequate involvement of the private sector is thus essential to create the pipeline investment necessary for maintaining the accelerated growth rate of the economy, even in the post-Plan period. Railways form the backbone of Indian economy and it is essential that it is strengthened to increase its reach and capacity. Road transport is even more important. With a view to develop it as an alternate means of transportation, as well as to improve the accessibility to hinterland and the rural areas, road transport is required to be brought nearer to the international standards. Similarly, the ports are also required to be upgraded to meet the global requirements so that their capacity to handle the cargo not only increases, but also improves qualitatively to cater to the growing needs of the economy.

The urgent need to further develop the services sector cannot be over-emphasised. Improvement of service in the urban areas is equally important. To develop an equally efficient alternative to the Railways, the Union government has decided to set up a National Highways Development Project (NHDP). As announced by the Finance Minister in his speech while presenting the Union Budget 2000-01, the cost of NHDP is estimated to be around Rs.54,000 crores. Shipping development is yet another area identified for rapid development during the Ninth Plan period. The role of shipping sector has been recognised to be of immense importance in the context of overall growth strategy. On the one hand, this sector has a vital role to play in export earnings, and, on the other a modernised version of shipping sector needs to be developed which is compatible with the rapidly globalising economy of the country. There is an urgent need to modernise the existing fleet by acquiring modern and fuel-efficient vessels. A conducive climate is also required to be created for easy financing of new ships. Facilities at the cargo-handling ports are also required to be modernised.

In tune with the requirements of the shipping sector, the Finance Minister reacted favourably while presenting the Union Budget for the year 2000-01. With a view to enable the Indian shipping industry to generate resources for strengthening and modernising its fleet, the Finance Minister enhanced the allowable deduction of their profits from 50 per cent to 100 per cent, if these profits are kept in reserve to be used for purchase of new ships. This deduction would be available for a five-year period beginning from the year 2000-01.

It is expected that in the years to come, with the software industry expecting a big boom, the services sector would develop and grow with even more pace.



Strengthening of the tertiary sector over the years has made the Indian economy more resilient. As industry and agriculture form less than 50 per cent of the GDP, a sudden crop failure or even the industrial depression cannot affect the overall performance of the economy, resulting in a sustaining growth over longer period of time. This was one of the reasons that East Asian economic crisis and global industrial slow-down during the late nineties did not adversely affect the performance of the economy. In fact, during 1998-99, the growth rate of the GDP in real terms recovered despite a sluggish industrial sector, primarily because of a reasonably good growth in the services sector. Earlier, during the year 1995-96, the industrial sector witnessed a negligible 0.2 per cent growth rate, but despite that the economy achieved a record 8.6 per cent growth in the GDP.

Need for Caution

Outstanding strides made by the services sector is a welcome trend and may provide buoyancy and sustainability to the economy for many years to come. But it may be wrong to get carried away by the feeling that the

economy has moved rapidly, from the stage of lower order of value addition in the primary sector, to the higher level of value addition in the services sector, and that there is nothing wrong with this trend.

In 1980-81, when the industrial growth rate had started to pick momentum, the share of industries in the GDP was 20.91 per cent, while the same of the services sector was already 40.99. The contribution of the services to the GDP never looked back thereafter. Within the services sector itself, the respective GDP share of trade, hotels and restaurant on the one hand, and that of the transport storage and communication, on the other has increased from 12.52 and 5.26 per cent to 16.68 and 7.61 per cent, respectively during the period 1990-99. This increase is particularly disturbing when compared with the contribution of the industrial sector to

the national income during the same period, which came down from 25.30 per cent in 1990-91 to 22.01 per cent in the year 1998-99.

Many economists are concerned at this distorted development. It is not really serious that the industrial sector has lagged behind, but the matter of concern is the fact that the services sector has been growing at a much higher rate. The million-dollar question is whether the higher growth rate of the services sector can be sustained without proportionate growth in the industrial sector. Moreover, the urban-based tertiary sector may not materially improve the lot of the poverty-stricken millions living in the rural areas, for which more reliance has to be placed on the primary sector as well as on the small and cottage industries. In the over-enthusiasm for rapid growth, the concern for the large majority of rural poor should not be overlooked. (The Competition Master)



ABDUL KALAM TALKS TO YOUNG PEOPLE

National institutes

The University Grants Commission is now setting up four national institutes of science to attract students after Plus Two who want to study pure sciences. Sonali, from Nasik, asked the President to describe “the university of your dreams.”

Prof. Kalam said:

“It will have teachers who are real role models and all graduates given a six-month vocational course of their choice. They can then become entrepreneurs providing employment to others and not be job seekers.”

Genetic engineering

When Bangalore’s turn came, a schoolgirl asked him about his views on cloning. Prof. Kalam said, “I am not in favour of human cloning...let God be the only genetic scientist when it comes to creating human beings. But genetic engineering does have its place in curing diseases.”

Mamta from the Visvesvaraya Technological University headquarters in Belgaum wanted to know, “if the 21st Century is India’s as you say, in which fields will we excel?” Prof. Kalam’s reply was, “Bioinformatics now and if we use the opportunity, nanotechnology in the near future and this can even overtake today’s micro electronics.” (The Hindu)

BT:THE NEXT BILLION DOLLAR SECTOR IN INDIA

Biocon chief Kiran Mazumdar Shah released the 2nd ABLE-Bio Spectrum Biotechnology Industry Survey in Bangalore.

India is well on its way to becoming a “billion dollar nation in biotech sector” by 2005, according to Biocon chief and president of Association of Biotechnology-Led Enterprises (ABLE) Kiran Mazumdar Shaw.

Speaking to reporters at Bangalore at the release of the 2nd annual ABLE-Bio Spectrum Biotechnology Industry Survey, Shaw said, “the biotech industry, which grew at 39 percent during 2003-04 and had a revenue of Rs.3,265 crore (\$705 million), was poised for an exponential growth to touch the billion dollar mark in 2005. And if this momentum is continued, it would touch \$5 billion in 2010,” N.Suresh, editor of ‘Bio-Spectrum’ said that the survey conducted with 235 companies revealed that the biopharma sector worth Rs.2,480 crore, was the largest sector in the biotech industry accounting for 76 percent of the market. Bio Services was the next biggest sector with total sales of Rs.275 crore.

Exports accounted for 55.65 percent share of the total biotech sector, while domestic business accounted for 44.35 percent market share. Manpower in the sector grew by over 42 percent to 9,100 from 6,400 last fiscal. The biotech companies at the end of this fiscal would have a manpower strength of about 11,000.

“The Bio suppliers market was estimated separately. This area grew from Rs.561.40

crore in fiscal 2002-03 to Rs.820 crore in fiscal 2003-04,” said Suresh. Stating that an investment of Rs.1,000 crore was expected to be ploughed into the sector this year (2004), Shaw said that the investments had climbed by 25.99 percent at Rs.635 crore last year.

Industry wise, Biocon Limited led revenues in the sector contribution Rs.502 crore, followed by Serum Institute of India with Rs.491 crore, Panacea Biotec with Rs.149 crore, Nicholas Piramal at Rs.130 crore and Novo Nordisk with Rs.110 crore are the others in the top 5 companies and together with Biocon and Serum account for Rs.1,382 crore or 42 percent of total market share.

Queried on the expected biotech policy, Shaw said that the industry was satisfied with the recommendations of M.S.Swaminathan Task Force and Mashelkar Task Force, which would be part of the biotech policy the centre is bringing out early next year. “The Department of Biotechnology is working on many proposals for funding young entrepreneurs and startups, which include seed capital and soft loans and it would be submitted to the government for its consideration soon,” she added.

The Biocon chief said that she hoped that other biotech firms like Serum, Shantha Biotech, Bharat who are poised at the take-off stage, come out with IPOs. (T.N.I.E)



OUTSOURCING: BOON FOR MANUFACTURING SECTOR

K.N.Arun

The Indian manufacturing industry should be ready to take advantage of the imminent boom in outsourcing of manufacturing activities by western industrial giants, Chairman of National Manufacturing Competitiveness Council (NMCC) V.Krishnamurthy said. "The boom is already evident. We don't want our manufacturing sector to lose out on this when it really arrives. We have to make sure that India becomes the most favoured destination for manufacturing,' he said in an interview.

Krishnamurthy, who is credited with the turning round of Steel Authority of India Limited (SAIL) and making Maruti Udyog a success story, points out that manufacturing sector as a whole had been stagnating and consequently its contribution to the GDP had even seen a fall. And the council, headed by him, has been entrusted with the job of suggesting ways to turn around the sector and make it globally competitive.

"It is absolutely essential that the contribution of the manufacturing sector to the Gross Domestic Product (GDP) has to go up considerably. After all, our founding fathers had laid so much emphasis on this sector, which had been followed up by successive governments in the first 40 years of independence". "We were able to design and build our own power stations, cement industries and communication facility. We need to get back to that level," he said.

How this could be done, is something that the council, when it gets under steam, will have to look into sector-wise. However, Krishnamurthy does have a few broad ideas which, he believes, can be the driving force behind an upswing in the manufacturing sector.

Krishnamurthy falls back on his experience in Maruti Udyog, and turns to small and medium enterprises for a solution.

"Large industries cannot have sustained success without support from SMEs. That is something which we did successfully in Maruti, where almost all our major suppliers were from the SSI sector," he said. And he debunks the theory that SMEs are not qualitatively competitive.

"We, at Maruti, have never had any such problem. For that matter, if the TVS group companies have become major suppliers for Western auto majors, that is because they have ensured that their own major suppliers conform to the standards required," he said.

"The linkages between the large industries and the SMEs' technological, financial, and marketing linkages need to be strengthened.

It will be the effort of my council to see how this integration can be achieved." Said Krishnamurthy.

(The New Indian Express)



DISCOVERY OF MAJOR HARAPPAN REMAINS

A three-year-long excavation by the Archaeological survey of India at Rakhigarhi in Haryana has unearthed the remains of what could have been the “provincial capital” of the Harappan civilisation in Hissar district of the State.

Two distinct cultures have been identified in the course of excavations—namely early Harappan and mature Harappan.

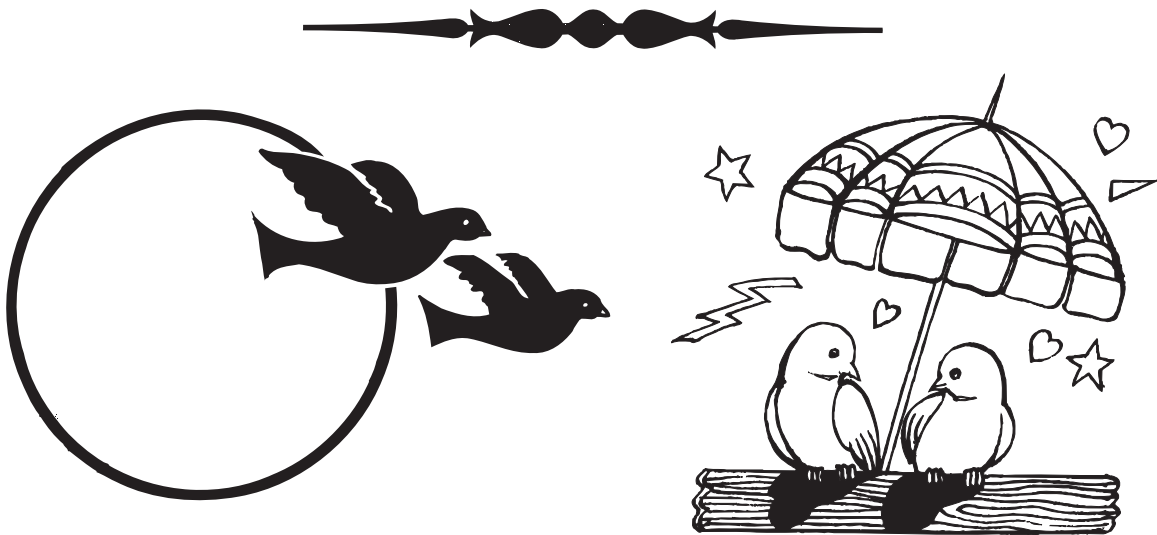
The site of excavation, located in the plains of ancient Drishadvati river, a tributary of the mythological Saraswati river, happens to be the “largest Harappan site” measuring 230 hectares, next to Mohenjodaro (now in Pakistan).

The discovery of circular structures at the entrance of the valley, a unique feature of early Harappan days, has also been reported. The structures are outlined by two or three courses of mud brick with port-holes at

intervals. There has also been “conclusive evidence” of domesticated cattle and animal farming.

Meanwhile, an ordinary patch of land in Muzaffarnagar’s Mandi village has transformed overnight into an important link to the 4000-year-old civilisation. The reason: a chance discovery of over 10 kg of gold jewellery, pottery and burnt bricks dating back to the Harappan period.

The Archaeological Survey of India (ASI) has termed the discovery as one of the biggest archaeological findings in several decades. Part of the discoveries made at this small field are beads made of gold and semi-precious stones. They also unearthed ochre-coloured pottery with black painted motifs. This pottery is similar to the Harappan pottery, which was discovered earlier at the sites of Hulas and Alamgirpur.



FIGURES SPEAK : INDIAN ACHIEVEMENTS

INDIAN AGRICULTURE

1. Index of Indian Agriculture Production

1950	-	46.2
1981	-	100
2001	-	177.3

2. Production Mn tonnes

1950	-	50.9 mnt
1996	-	199.4 mnt
2001	-	212,0 mnt

3. Index of Industrial Production

1950	-	18.3
1993	-	100
2001	-	167

INDIAN INDUSTRIES

	1950	1996	2001
Finished Steel Mn Tonnes	1.0	22.7	31.1
Cotton Cloth Bn sq mts.	4.5	34.3	41.4
Buses/Trucks/ L.C.V.S. (1000's)	8.6	327.3	129.1
Passenger Cars (1000's)	7.9	483.0	619.1
Cement Mn tonnes	2.7	76.2	107.0
Fertilizers (N + P)'000 tonnes	18	11,567	13,549
Electricity generated Bn Kwh	5.1	395.9	573.2
Crude oil (Mn tonne)	0.3	32.9	32.0
Refinery throughput (mn tonnes)	0.3	62.9	107.3
Small scale units number 1000's	140	2857	3442
Output Rs.crores	2603	412,636	690,316
Employment (Mn)	1.7	16.0	19.2
Railways Route Kms ('000km)	53.6	62.8	63.0
Electrification ('000kms)	0.4	12.7	14.9
Revenue earning Freight (Mn tonnes)	73	4.09	492
Passenger Traffice (Mn)	1284	4153	5093
Shipping Tonnage capacity '000GRT	391.0	6,915	6224
Cargo handled Mn tonnes	19.2	227.1	274.8
Telephone connection (Mn lines)	0.1	15.4	45.0

Indian Railways carried 4,673.01 million passengers between April 2003 and February 2004.

BANKING AND CAPITAL MARKET

	<u>1950</u>	<u>1996</u>	<u>2001</u>
Aggregate Deposits Rs.Crores	881	505,599	1,103,360
Aggregate Credit Crores of Rs.	547	278,401	589,723
Scheduled commercial banks members	93	295	295
Branches	2335	65,485	66,259
Stock Markets	7	22	23
Market capitalisation (Rs.Crores)	635	485,785	612,224
Labour Total workers (millions)	140	387	403
Organized Sector Employment (Mn)	12.1	28.3	27.8

SOCIAL SECTOR

Primary/Middle Schools 000's	223.3	775.2	825.3
Enrolments (Mn)	22.3	157.2	152.5
Secondary / High Schools 000's	7.4	102.2	125.5
Enrolments (Mn)	1.5	24.9	28.4
Colleges	578	8529	10,701
Universities	27	228	261
Literacy rate	18.3%	52.2%	65.4%
National income (Rs.Crores)	Rs.9,142	10,93,961	18,64,292
Percapita income Rs.	255	11,564	17,968
GDP (Current Prices) Rs.Crores	9547	1,243,546	2,094,013

SECTORWISE NET DOMESTIC PRODUCT

Primary Sector Rs.Crores	531,196	(28.3%)
Of which Agriculture	493,887	(26.4%)
Mining	36,309	(1.9%)

SECONDARY SECTOR

Industrial Manufacturing	396,642	(21.1%)
--------------------------	---------	---------

TERTIARY

a) Transport Communication Trade	419,291	(22.3%)
b) Finance, Insurance, Real Estate	240,865	(12.8%)
c) Community, Social Personal service	288,961	(15.4%)
Total Rs.Crores	1,876,955	(100%)

India is the fastest growing commercial vehicles market in Asia, with a growth rate of 28%
--

INDIA'S DOMESTIC SAVINGS RS.CRORES

	2001	2000	1999
Household Sector	515,565	453,641	402,360
Of which Financial Saving	256,647	217,841	203,702
Saving in Physical Assets	258,918	235,800	198,658
Private Corporate Sector	92,060	86,142	84,329
Public Sector	minus 57,662	minus 48,022	minus 20,049
Govt.Admn.Departmental			
Commercial Enterprises	minus 131,515	minus 118,739	minus 107,250
Total Gross Domestic Saving	549,963	491,761	466,640
Consumption of Fixed Capital	217,058	197,856	182,359
Total Net Domestic Saving	332,905	293,905	284,281

AREA UNDER AGRICULTURAL CROPS

	2001	2000	1980
		(Mn hectares)	
Food Grains	121.9	121	126
Cereals	100.2	100.7	104.2
Pulses	21.7	20.3	22.5
Oil Seeds	22.9	22.8	17.6
Cotton	9.1	8.5	7.8

AREA IRRIGATED (Mn hectares)

	1998	1990	1980
Govt.Canals	17.2 (30.2%)	17.0 (35.2%)	14.5 (37.5%)
Private Canals	0.5	0.5	0.8
Tanks	2.9 (5.1%)	2.9 (6.0%)	3.2 (8.3%)
Wells / tubewells	33.1 (58.1%)	24.7 (51.5%)	17.7 (45.7%)
Others	3.3	2.9	2.6
Total irrigated Area	57.1 (100%)	48 (100%)	38.7 (100%)

ELECTRONIC PRODUCTION PROFILE

Rs. Crores	2001	2000	1990
Electronic Hardware	37,050	30,700	28,100
Computer Software	59,900	37,750	24,350
Grand Total	96,950	68,450	52,450

INDUSTRIAL PRODUCTION

FOOD	2001	1990	1980
Sugar Mn tonnes	18.5	12	5.1
Tea Mn kg	847	705	568
Coffee '000 tonnes	306	170	139
Vanaspati '000 tonnes	1804	850	753

TEXTILES

Spun Cotton yarn Mn kg	2825 (1999)	1717	1211
Cloth Bn Sq Mtr	41.4	22.9	11.0
Mill Sector	1.7 (2000)	2.6	4.2
Decentralised Sector	38 (2000)	20.3	6.8

METALLURGICAL

Steel ingots Mntonnes	27 (2000)	-	10.3
Finished Steel Mntonnes	31.1 (2001)	13.5	6.8
Steel Casting '000 tonnes	370	262	71
Aluminum '000 tonnes	504	451	199

MECHANICAL ENGG.

Machine tools Rs.Cr.	1451	773	169
Machinery Commercial Vehicles '000S	129.1	145.5	71.7
Cars, Jeeps, land rovers '000S	619.1	220.8	49.4
Motorcycles Scooters '000S	3,932	1,843	447
Bicycles Mn	10.8	7.1	4.2
Agri.Tractors '000S	204.9	142.2	71.0
Diesel Engines '000S	202	158	174
Power Driven Pumps '000S	431	519	431

ELECTRICAL ENGG.

Power Transformers Mn KVA	62.6	36.6	19.5
Electric Motors Mn Hp	5.00	4.2	4.2
Electric Fans Mn	5.00	4.2	4.2
Electric lamps Mn	393	274	198
Aluminum conductors '000tonnes	30	68	86

7,367 Indian nurses were recruited by Britain last year.
--

CHEMICALS & ALLIED

	2001	1990	1980
Nitrogenous Fertilizers (N) '000tonnes	10,017	6993	2164
Phosphate F (P) '000 tonnes	3532	2052	842
Soda ash '000tonnes	1424	1385	563
Caustic Soda '000tonnes	1587	992	578
Paper & Board '000tonnes	290.6	2088	1149
Automobile tyres Mn	43.5	20	8
Bicycle Tyres Mn	20	25	27
Cement Mntonnes	107	49	19
Penicillin MMU	1075	525	337
Streptomycin Base T	-	162	227
Vitamin A MMU	43	221	60

SHARES OF MAJOR INDUSTRY GROUPS IN FACTORY SECTOR

Main Characteristics	Factories	Employ- ment	Invested capital	Gross output	Value added	% share					
Food products & Beverages	18.3	16.7	12.3	15.9	10.9						
Textiles	10.3	16.1	10.5	9.8	8.8						
Electrical Machinery & Apparatus	3.0	2.9	2.5	2.9	3.7						
Wearing Apparel Dressing & Dyeing of Fur	2.6	4.1	1.1	1.8	2.2						
Wood	2.5	0.6	0.3	0.2	0.2						
Paper	2.6	2.2	2.7	2.0	2.6						
Leather	1.8	1.7	0.8	1.1	0.8						
Rubber and plastic products	5.2	3.2	2.9	3.1	3.2						
Basic chemicals and products	8.1	10.0	19.5	17.1	21.2						
Non-metallic minerals	8.9	5.6	6.2	3.5	5.4						
Basic metals	5.4	7.1	15.3	10.1	9.4						
Metal products	6.3	3.7	1.8	2.4	2.8						
Machinery and Equipment	7.2	5.3	4.0	4.7	6.7						
Transport equipment	1.5	2.3	1.5	2.4	2.3						
Total (incl. others)	100.0	100.0	100.0	100.0	100.0						

SMALL SCALE INDUSTRIES

	2001	1999	1995
Number of Units '000S	3442	3212	2658
Employment Mn	19.2	17.9	15.3
Gross out put Rs.Crores	690,316	572,887	362,656
Exports Rs.Crores.	71,244	54,200	36,470
Share in total exports	34%	34%	34%
SSI Credit as % of net Bank Credit	12.6%	17.3%	16%

KHADI AND VILLAGE INDUSTRIES (2001-02)

Net Disbursements Rs.1274 Crores (Khadi 634 Cr. – VI.640 cr)

Production Rs.Cr.7557 (Khadi Rs.417 Cr) (VI Rs.7141 Cr.)

Sales Rs.Cr. 8,911 (Khadi 528-VI 8383)

Employment '000S 6,264 (Khadi 848, VI 5416)

Wages / Earnings Rs.Cr.2860 (Khadi-216 – VI 2654)

MINERAL PRODUCTION (000'S TONNES)

	2002	1980
Bauxite	9439	1932
Chromite	2247	324
Copper Concentrates	153	n.a.
Gypsum	3117	948
Lead Concentrates	58	19
Manganese Ore	1544	1632
Mica	1.4	8.4
Zinc Concentrates	499	50

MINERAL PRODUCTION Mn TONNES

	2002	1980
Coal	340	114
Iron ore	86.4	42.2
Limestone	147	30.2
Petroleum Crude	33	10.5
Gold Kg	2873	2412

The certified area under organic spice cultivation in Kerala is now over 2,500 acre.
--

NATURAL GAS RESERVES / PRODUCTION

Bn.Cumetres

	2000	1980
Reserves		
On Shore	301	82
Off Shore	462	329
Total	763	411
Net production	27.9	1.5

ELECTRICITY GENERATION Bn Kwh

	2001	1980
Generation	573.2	129.2
Public Utilities	515.2	120.8
Hydel	73.9	56.5
Thermal (Oil+Ng.+)	422.0	61.3
Nuclear	19.3	3.0
Self generating establishments	58.0	8.4

INDIA'S INSURANCE SECTOR

Size of the insurance market Rs.Cr. 47,400/-

Growth rate over 2000 - % 43.0 in 2001-02 – Life Insurance

Growth rate over 2000 - % 13.7 in 2001-02 – General Insurance

Total Regd. companies – 27.

Life Insurance Total 13 Public sector 1 Private Sector 12

General Insurance Total 13 Public Sector 4 Private Sector 9

Reinsurance Public Sector 1.

Distribution Channels agents No.510647

Institutional 483 – individual 510,164

Surveyors 24,206 Institutional 1137 individual 23069 Agents training institutes 833

ESTIMATED STOCK OF MANPOWER BY MAJOR CATEGORIES (In Thousands)

	2001	1991	1981
Graduates			
Medicine ('000S)	391.9	296.4	219.5
Dentistry ('000S)	24.0	13.9	8.00
Agricultural Science ('000S)	238.6	168.4	105.8
Veterinary Science ('000S)	46.7	34.4	24.4

India is home to about 3.5 crore manuscripts.

Post Graduates

Arts '000S	3917.3	2185.3	1113.6
Science	805.0	482.1	294.2
Commerce	4853.1	2486.0	1054.2

Engineers

Degree holders ('000S)	1024.4	519.6	304.9
Diploma holders ('000S)	1531.7	859.3	425.8

Nursing Personnel

General Nurses('000S')	295.8	184.8	117.8
Auxiliary Nurses mid (2000)	227.0	182.4	90
Wives '000S			
Health Visitors '000S	23.4	21.0	11.6

INFRASTRUCTURE OF INDIAN MEDICINE SYSTEM AS ON 1.4.2001

Facilities	Ayur Veda	Unani	Siddha	Homeopathy	Total
Hospital	2955	312	237	307	3841
Beds	43,973	5128	1986	13,694	65753
Dispensaries	14721	958	352	7411	23,597
Regd. Practitioners	430,890	43,108	17,097	197,252	688,802
U.G.Colleges	194	35	5	172	412
Admission Capacity	7680	1325	240	10895	20310
P.G.Colleges	56	6	2	24	88
Admission capacity	801	72	90	543	1506

LIVESTOCK SECTOR

Largest livestock populations in the world

57% of world's buffalo population

15% of world's cattle population

20.5 crore cattle (1992 census)

8.4 Crore buffaloes (1992 census)

Milk Production 84.6 million tonnes at the end of 2001-2002 (17 m tonnes in 1951)

Egg production 34 Billion in 2002 (11 Billion in 1982)

Wool production 50.7 million kg (2002) 38 M kg (1985)

The Association of Financial Planners has set a target to create a team of over 10,000 financial advisors in India by 2007.

India possesses 27 breeds of Cattle and Seven Breeds of Buffaloes**Poultry Development**

India ranks among the top 5 Nations in the world.

Sheep Development

50.80 million sheep and 115 million goats are there in India. There are 128 lakh pigs in the country

Fish Development

India's Fish Production went up from 24.42 lakh tonnes in 1980-81 to 59.56 lakh tonnes in 2001-02.

Hospital And Dispensaries

As on 1.1.2001, there were 17,952 allopathic hospitals

31.3.2001 – 3043 Community Health Centres 22,842 PHCS, 1,37,311 sub centres (Source : Statistical Figures 2004 TATA Hand Book)

**NRI APPOINTED DEAN OF BABCOCK SCHOOL**

Ajay Patel, a non-resident Indian, has been appointed Dean of the prestigious Babcock Graduate School of Management by Wake Forest University in Winston-Salem, North Carolina.

Mr. Patel was named Dean following a comprehensive and nationwide recruiting search led by a committee that included faculty, staff, students and alumni. "Importantly, he is widely respected within the Babcock School as an excellent teacher and scholar,".

Assam's area under tea is more than 2.7 lakh hectare, which in turn is more than half of the entire area under tea in the country.

Film Industry

India makes 900 movies per year. The Cinema Industry has 188 plus million viewers a year and its estimated size in 2007 is Rs.41,900 crores.

Indian banks spent Rs.1,500 crore on software and hardware for core and internet banking services in 2003-04.

UN ATTACK ON EASTERN CIVILISATIONS

Bharat Jhunjunwala

Professor Samuel P. Huntington had published a widely discussed essay “The Clash of Civilizations?” in *Foreign Affairs*. Huntington’s thesis was that the Western Protestant civilisation was using its economic and political might to impose its values on other, mostly Eastern, civilisations: “Global political and security issues are effectively settled by a directorate of the United States, Britain and France, world economic issues by a directorate of the United States, Germany and Japan, all of which maintain extraordinarily close relations with each other to the exclusion of lesser and largely non-western countries. Decisions made at the UN Security Council or in the International Monetary Fund that reflect the interests of the West are presented to the world community.”

Unable to resist the Western prowess, these civilisations are increasingly making alliances based on their common cultural heritage. Huntington gives the example of China making available nuclear technologies to Islamic countries as that of an emerging alliance between the Chinese Confucian and Arab Islamic civilisations.

Huntington says that the present Western policy of bulldozing its interests may be okay in the short run but the West would have to become more accommodative of the different cultural values of Eastern civilisations in the long run: “Non-Western civilisations will continue to attempt to acquire the wealth, technology, skills,

machines and weapons that are part of being modern. They will also attempt to reconcile this modernity with their traditional culture and values. Their economic and military strength relative to the West will increase. Hence the West will increasingly have to accommodate these non-Western modern civilisations whose power approaches that of the West but whose values and interests differ significantly from those of the West.” A clash of civilisations is likely to take place if the western civilisation refuses to recognise the different cultural values of these civilisations.

This straightforward suggestion is being opposed by another section of the Western lobby which refuses to provide space for separate and different values of the non-Western civilisations. The lobby insists that the Western values are indeed universal values and the West has a legitimate right, nay responsibility, to use its economic and political power to force other civilisations into accepting these values. The United Nations Development Programme has espoused this anti-Eastern civilisations position in its Human Development Report 2004.

The UNDP has said: The deciding issue, ultimately, has to be one of democracy. We cannot both want democracy and yet rule out certain choices, on traditionalist grounds, because of their ‘foreignness’ (irrespective of what people would choose, in an informed and reflective way). The value of democracy

The West Bengal State Toy making Industry is expected to touch the production value of 300 crores in the year 2006.

has to resist the banishing of citizen's freedom of choice" (Page 20-21). The UNDP here demands that the people have an innate right to know of various alternatives. This means that the Western media has the freedom to forcibly enter into the Eastern cultures and spread its particular basket of information such as that of gay and lesbian relations. Armed intervention such as that made in Iraq with the consent of the Security Council is justified in this manner. The IMF also gets the right to impose conditions of democratic governance of Eastern Countries.

Huntington says that the western civilisations should not forcibly impose their values on Eastern civilisations and must be accommodative towards them. But the UNDP says that the Western civilisations must forcibly intervene in the Eastern civilisations to spread these allegedly universal values. This is new western imperialism in its most vulgar form.

Are personal freedom and democracy truly universal values as UNDP contends? Personal freedom used to invigorate the senses and to indulge in sensual pleasures take a person away from his inner self and condemns him into deep unhappiness though with a sheen of outer falsehood of a smiling face. On the other hand freedom to engage in work as dictated by one's inner self is truly beneficial. Personal freedom is then beneficial only if it comes with training and an environment conducive to connection with one's inner self. It is positively destructive in absence of this environment as we can see in the increasing violence, divorces, alcoholism, etc., in the western civilisation. Thus personal freedom is not a

universal value. It is desirable only under certain conditions.

The problem of democracy is similar. The sources of information are held by the ruling elite. The governments of all countries—including the West—regularly provide false information to the people. The initial public opinion in the Western countries in favour of armed intervention in Iraq is a clear example of how democracies can be made to stand on its head by providing false information. The provision of correct information then becomes the condition which must be fulfilled before democracy can take over.

It follows that the true universal values, if there are any, are those of freedom to pursue introspective and reflective enlightened self-interest; and that of provision of true information to the people. Neither personal freedom nor democracy can qualify as universal value. These freedoms can be manipulated to get people to hit at their own self-interest and unwittingly become pawns of the ruling elite.

One lobby of the Western civilisation, the UNDP being part of it, seeks to propound values of personal freedom and democracy as universal values so that its economic interests can be secured to the deprivation of the Eastern countries. The lobby wants to convert the humanity into a consumption machine that is ever attached to new sensual pleasures and manipulated by providing doctored information. Huntington has warned against the long term consequences of this policy. But shortsighted wise men of the United Nations think otherwise.

(The New Indian Express)

India is among top 15 exporters of niche crops like lettuce, fresh peppers, raisins, tomatoes, squash, grapes, pistachios, oranges, grape fruit, lemons and fresh cherries.

MEASURING INDIA'S PROGRESS

While measuring India's progress (and that of other 'developing' Nations,) the human development index (HDI) is used and India is rated low by the World level organizations.

But while measuring progress, the world institutions like UNDP take into consideration only 1. Life expectancy at birth 2. adult literacy rate 3. gross enrolment ratio for primary, secondary, and tertiary schools, 4. and per-capita income in purchasing power parity (PPP).

Only now the world is waking up to the reality that 'India has managed its diverse culture with pluralist policies and 15 official languages and made remarkable growth in health and education!'

For a country which has been ravaged by hundreds of years of invasions by foreign powers and foreign cultures, colonisation and plundering, neglect and discouragement



of its indigeneous wisdom, what India has done is a great achievement. To bring three fourths of its people out of the clutches of poverty within a matter of a few decades after dragging its feet initially, is no mean performance.

To do so, keeping its spiritual, familial, and social values almost intact is a great credit to India. One should remember that America and Europe have failed in defending their social systems against the juggernaut of science and technological 'value' systems. Whereas India has sublimated science and technology to serve its human, religious and national interests.

As Europe tries to build its New Union, combining diverse cultures, values, and Nationalities, it realises what a great and phenomenal achievement India has made, in retaining, what has become axiomatic in India-ITS UNITY IN DIVERSITY.



country of comparable or half-its size would dare to take. India had to contend with media which would posit impossible goals in front of the state, telling the government that it should rebuild in half a century, what history has taken two millennia to destroy.

With its 5000 year old, urban culture, India has not permitted urbanisation to destroy its family. Whereas in every other civilisation, urbanisation has always spelt doom to the family and the community.

India had to manage irresponsible political dissidence, impractical ideologues and imported economic systems which would not take roots in its soil.

Often India is adversely compared to China. It should be remembered that China restricted the choices available to its people in almost all spheres, suppressed dissidence with an iron hand, gave no training to its people in democratic or entrepreneurial skills, and intensely centralised its economy. The Media there were under complete check, dishing out only what the state wanted its people to know. Religious and spiritual traditions were suppressed and a very limited and narrow concept of human identity was imposed on its citizens, cutting modern China away from its roots.

India had to manage a diversity, which western scholars would describe as nightmarish and as a functioning anarchy.

Yet India has grown, maintaining its spiritual identity, retaining its social values. It has kept its creative springs alive, it has successfully defended its borders in the post-independent period. Mother India should never compare herself with this country or that. Remembering that her history, her problems, and her challenges are unique, reminding herself that her goal is to lead the humankind to its spiritual destiny, India should compare her only to herself while travelling down the path of history and measure her progress by her own standards and values.

But India had to start its modern journey with universal adult franchise, a risk no



India's first home grown hand-held computer—Simputer—was commercially launched in Bangalore by President A.P.J. Abdul Kalam. It has been branded as “Amida”, meaning “infinite or the Buddha”.

SECTION - 5 THE BACKGROUND

The whole of the Western world is on a volcano which may burst tomorrow, go to pieces tomorrow. They have searched every corner of the world and have found no respite. They have drunk deep of the cup of pleasure and found it vanity. Now is the time to work so that India's spiritual ideas may penetrate deep into the West. Therefore young men of Madras, I specially ask you to remember this. We must go out, we must conquer the world through our spirituality and philosophy. There is no other alternative, we must do it or die. The only condition of national life, of awakened and vigorous national life, is the conquest of the world by Indian thought.

- Swami Vivekananda





Thus spake Swami Vivekananda

Up, India, and conquer the world with your spirituality! Ay, as has been declared on this soil first, love must conquer hatred, hatred cannot conquer itself. Materialism and all its miseries can never be conquered by materialism. Armies when they attempt to conquer armies only multiply and make brutes of humanity. Spirituality must conquer the West. Slowly they are finding out that what they want is spirituality to preserve them as nations. They are waiting for it, they are eager for it. Where is the supply to come from? Where are the men ready to go out to every country in the world with the messages of the great sages of India? Where are the men ready to go out to every country in the world with the messages of the great sages of India? Where are the men who are ready to sacrifice everything, so that this message shall reach every corner of the world? Such heroic souls are wanted to help the spread of truth. Such heroic workers are wanted to go abroad and help to disseminate the great truths of Vedanta. The world wants it; without it the world will be destroyed.

INDIA REGAINING SELF-BELIEF, SAYS GOVERNOR

India is emerging as a world leader and fast regaining its lost self-belief, said the Governor of T.N. P.S.Ramamohan Rao.

He was speaking at the inauguration of the TIFAC's (Technology Information Forecasting and Assessment Council) Centre of Relevance and Excellence (CORE) in Diabetic Retinopathy at the Aravind Eye Hospital, on Friday (16-04-2004).

India is slowly coming out of the hangover from being ruled by outsiders for nearly a millennium'. Foreign rulers destroyed the self-worth of the Indians which they are fast regaining of late, the Governor said.

The Governor said that lack of objectives and bureaucratic policies had hampered the development of India. Lack of a proper policy environment has prevented convergence of industry institution participation. But these misgivings are being corrected of late, he said.

The Atomic Energy Corporation and Indian Space Research Organisation (ISRO) had created an ambience to prove that India is capable of scaling great heights, he said.

Dr.R.Chidambaram, Principal Scientific Advisor, Government of India and Chairman, TIFAC CORE, in his keynote address, said that India has a strong scientific and

technology platform. It is strong in research but weak in incorporating the developments into the industrial sector.

Now industries have come forward to coverage with educational institutions, he noted.

The Government on its part is aiding the convergence by developing a user friendly data base for industry institution interaction, which had resulted in India producing world class automobiles.

Dr.P.Namperumalsamy, director, Aravind Eye Hospitals, said that his was the first medical institution to create a TIFAC CORE centre.

The centre will produce scientifically and technically qualified manpower of the very highest quality, tailor-made for the requirement of industries. These centres are the result of synergistic convergence of the three powerful pillars of economic growth, industry, education institutions and the Government.

At present there are 17 centres in India and the aim is to increase the number to 100. India has the largest number of patients with diabetic retinopathy, a major cause for blindness. Aravind aims at tackling the problem through this centre, he added.



India has documented over 44,000 species of flora and 75,000 new species of fauna and possesses within its borders two of the world's ten bio-geographic zones.

CAN THERE BE INDIAN GLOBAL BRANDS?

Ramesh Narayan

As we settle down to live in a global village where the Madrasi Mami comfortably walks around Panagal Park resplendent in Reebok sneakers and the old lady on a snowbound New York Street calls a young girl sitting in a call centre in Bangalore to seek instructions on where the nearest steak house is, we wonder what is the meaning of a truly global brand.

In a recent presentation forecasts that in 2003 the leaders of the world economy would be No.1 China, No.2 USA and at No.3, India would be fighting it out for the coveted third spot with Japan.

How will this seemingly Utopian scenario emerge? Indians having increasing access to foreign investment funds, the government's policy of encouraging Indians to grow their enterprises on their own steam, a large low-cost domestic work force, the exploding depth of young well educated people, the enviable pool of creative talent and the exciting entrepreneurial spirit that is steadily embracing India.

These are in the words of Ian Batey, (Management Consultant Singapore). Closer home Batey forecasts some of the Indian brands who should enthusiastically take up the global challenge. Kaun Banega Global brand? In the IT sector Batey says Infosys, Wipro, Sankhya and TCS have the potential.

In FMCG, he feels ITC should roll up its sleeves and aim for the big ticket after "beating the pants off Hindustan Lever in the home market."

In the pharma sector, Batey picks Ranbaxy. He feels that Tata trucks should enjoy strong market share across Asia, and Tata's Tetley should signal a more distinctive link with India.

In the biotech sector the favorites are Reliance and the Aditya Birla group who he feels should be eyeing the possible \$900 billion market. Wishful thinking, one might say, but Batey says Air India should try and elevate itself to its former glory. Well, if you ask me, the first step would be to let Air India buy a few new aircraft.

Anyway, Batey also has some interesting random selections of branding opportunities lying quietly in India's treasure chest, waiting for entrepreneurs to shape them into global brand champions.

The surprises include Old Monk Rum, Nutrine, the mango fruit, Bukhara (the Indian restaurant) and Kitchens of India. Finally, he says that wholly-owned Indian advertising agencies will emerge as forces, to handle the big growth of Indian brands. I'll cheer to that prospect.

(The New Indian Express)

The general insurance industry in the country clocked business worth Rs.14,452 crores between April 2003 and February 2004.

INDIAN ANIMATORS RIDE OUTSOURCING WAVE

Cute cartoon characters and slick special effects may not seem obvious candidates for outsourcing, but Indian studios are popping up alongside software firms and call centres that do work for firms in the West.

In films, television shows and electronic games, latecomer India has started to gain favour over more established animation centres such as Taiwan, Singapore, South Korea and the Philippines.

India is winning animation contracts for the same reasons it has become such a hot outsourcing destination for other industries: lower costs, a large English-speaking workforce and a track record in meeting Western companies' technology needs. A recent \$14-million deal between Italy's Mondo TV, Europe's No2 cartoon producer and distributor, and Padmalaya Telefilms, is the latest boost to India's creative reputation.

So far, analysts estimate Indian companies have won some \$50-\$100 million in business, a small slice of the \$10 billion global animation industry. But that could change, as major US studios, such as Disney, Warner Bros Studios and Metro-Gold-Wyn-Mayer, who previously have done much of their animation in-house, try to cut costs.

Indian companies, such as soon-to-be-listed UTV Software Communications, Toonz

Animation, Pentamedia Graphics, Crest Communications and Jadooworks, are leading the way.

Local units of Los Angeles-based Rhythm and Hues and France's Millimages, which makes content for American and European TV shows, also have increased their output.

But analysts warn the sector could become nothing more than low-cost sweatshops unless Indian companies seek to offer advanced formats and compete to become co-producers and owners of their creations.

"Animation outsourcing is the media equivalent of business process outsourcing." Said Jyotirmoy Saha, director of UTV's animation division. In the initial rush to meet demand from North America and Europe—the biggest animation markets besides Japan – Indian firms took on low-end production work.

But that's not the lucrative end of the market, and most have not yet moved on to invest, co-produce or retain intellectual rights—the areas where bigger profits can be made.

"For many players, this is still a costs game rather than a creative exercise, but (even) this advantage will be short lived," said Farrokh Balsara, a director at consulting firm Ernst & Young.

Domestic production of auto components during 2003-04 was worth Rs.30,640 crore while exports amounted to Rs.4,500 crore.

WALT DISNEY EXPLORES INDIA AS PRODUCTION BASE

Global entertainment major, The Walt Disney Co., is exploring India as a production base for its animation and feature films, and is planning to tap the commercial ability in the country, including that in radio, animation and TV broadcasting and content.

“India is a significant base for outsourcing of entertainment content and co-production, and we are on a fact-finding exercise in the country”, Walt Disney Chief Operating Officer (COO), Andy Bird, said here today (15/03/04 at Mumbai).

Mr. Bird, who had met the Information and Broadcasting Minister, said investing in radio, music and film industry would be the company’s priority. He said Walt Disney intended to have a powerful presence in India.



Tea output of our country during this year (2004) is expected to cross 850 million kg.

CALL UP INDIA FOR FASTER SERVICE

In a pleasant twist to the outsourcing controversy, an American lending company has given customers the choice to call up either India or at home, with a warning that if they call in the U.S. it will take up to two days to process their loan request, while a call centre in India run by Wipro will do it the same day.

On-line lender E-Loan Inc gives its customers a choice: Press 1 for an outsourcing centre in India or 2 for centre in the U.S. It warns the customer that if he presses the button for India, they can have their loan request processed the same day.

If they want the application processed in the U.S. they may have to wait, may be, two days longer. “With the movement of U.S. jobs overseas becoming a hot political issue, companies are trying to find new ways to avoid the backlash.” Said *The Wall Street Journal*.

“E-Loan’s move is the latest wrinkle: disclosing that they have workers overseas, and letting customers themselves decide whether to opt for the advantages they offer,” it added.

Since the company started offering the option four weeks ago, said Chris Larsen, E-Loan’s chairman and chief executive, 86 per cent of its customers for home equity loans had chosen the India route.

To offer the faster service, E-loan contracts with a unit of Wipro, which, according to the daily, is expanding its workforce by 3,000 each quarter. E-Loan officials, said the Journal, expect more companies will follow suit.—PTI.

ABDUL KALAM OUTLINES TECHNOLOGICAL ACHIEVEMENTS

Outlining nine technological events including the successful development of indigenous cryogenic engine, President A.P.J. Abdul Kalam today (11/05/2004) said these have the potential to penetrate the country's economy and help transfer the society.

Greeting the people on the occasion of Technology Day in an address over All India Radio, he spoke at length on the milestones and the progress India has achieved technologically in 2003-2004.

These areas included seed cotton productivity, electricity generation from municipal waste, a brand in automobile technology, a fast breeder reactor, the "birth" of an Indian cryogenic engine, the light combat aircraft (LCA) crossing the sonic barrier, mapping the neighbourhood by children, a synergy mission for environmental up gradation and a digital library in every panchayat.

The President said doubling of seed cotton productivity would bring prosperity to the farmers while electricity generation through mini-plants from municipal waste would enrich the environment and provide energy security to the nation.

When the 'Indica' car plied on the roads of world capital it would ignite the youth to increase productivity in every field of technology to make the nation globally competitive, he observed.

Kalam said commissioning of a large number of fast breeder reactors would provide energy security and also potable water through the seawater desalination process.


When an Indian communication satellite launched by a cryogenic upper stage, orbits in space, and the nation will be competitive in the export market, he noted.

Touching on the light combat aircraft, the President said the Armed Forces will be proud of flying indigenous fighters in air space and make India a leading exporter of military equipment.

Widespread use of mapping the neighbourhood by school children will enhance the creativity of the youth and make them contribute to societal transformation, he said stressing synergy missions for environmental upgradation would make India "clean and green".

The president contended that digital libraries in every panchayat would enhance the knowledge of the youth and become part of a beautiful rural life.

"Let these technological successes multiply and bring smiles on the faces of a billion people," the President said adding the technological progress towards enriching society signified the national spirit of "we can do it." **(The New Indian Express)**


Marriage industry in India is a Rs.10,000 crore business.

INDIAN BUSES ON THE ROADS OF USA

Karma Yogi

An elderly American reading what a young American had written was surprised. He asked where he had learnt to write so well. The answer surprised him even more. "I learnt it in India." One may wonder how someone whose mother tongue is English can learn writing English from another person whose mother tongue is not English. The Right Honourable Sastri made the Englishman feel shy by his precise pronunciation.

JRD Tata in 1975 felt the same type of surprise when a young American proposed to him that his buses could be sold to the USA. After a prolonged discussion, Tata was convinced. Life took a different turn. Tata received continuous export orders from the Gulf countries and there ended our proposal. We know man does not know his weaknesses. I would say, "Man does not know his strength."

My perennial theme is India has a treasure in knowledge, subtlety, insight, intuition, philosophy, and SPIRITUALITY. They are the treasures found nowhere else in the world, but they are not here in a usable form. They are found here as ingots of gold. Unless they are made into jewels, one cannot use them. Indians are unaware of their strength, greatness of value. If the buried Indian talents are brought to the surface, Indian manufactured goods will have an edge over the products of any other country. American parents who visit India marvel at the

affectionate atmosphere in our families. One American husband after a few hours in an Indian house found that the lady of the house never came out to participate in the discussion. On knowing more about the feminine fairness of India, he declared, "This is great. I am unable to conceive of such an atmosphere."

Every good thing has its other side. The voluntarily submissive affectionate lady can either be enjoyed as an emotional treasure or taken advantage of for the purposes of masculine domination. Asia is an emotional continent. It is said that some American youth visit Thailand so that they may marry a handsome, affectionate Thai girl to whom divorce or insubordination is inconceivable. The day India realizes her inner strength will be a great day for us.

DABUR TO SET UP PLANT IN DUBAI

Dubai: Dabur International, the wholly-owned subsidiary of the Indian PMCG and healthcare major Dabur India, will set up a manufacturing facility at Dubai Investment Park, in line with its plan to expand operational presence in West Asia and promote exports across the globe.

This will be the third facility of Dabur International in the UAE. The Indian subsidiary already has a plant in Sharjah, manufacturing food products and hair oils, while the Jabel Ali facility manufactures Dabur's range of personal care and healthcare products.—UNI



FOREIGN TRADE-RISING PROSPECTS

Exports are expected to reach \$73.4 billion this year (2004) with the Government having raised the growth target to 16 per cent from 12 percent in the last two years. This is also likely to help exports reach \$150 billion by 2009-10.

Suggesting a major export thrust for services such as healthcare and education during the meeting, the FIEO (Federation of Indian Export Organizations) said the size of the

healthcare industry was \$17 trillion globally with opportunities cutting across all the four modes of trade under categories laid down by the World Trade Organization. These include diagnosis and clinical consultations and telemedicine which come under Mode one, health tourism and education and training under Mode two, establishment of hospitals under Mode three and movement of doctors and health management personnel under Mode four.

EXPORTS EXCEED TARGET

Despite the appreciating rupee, India's exports clocked a whopping 41.88 per cent growth in March, 2004 pushing up the overall growth to 17.26 per cent in 2003-04, surpassing the annual target of 12 per cent. For the first time, exports crossed the \$60 billion mark to end 2003-04 at \$61.8 billion, even as the trade deficit widened during the fiscal, virtually doubling to \$13.36 billion from \$7.44 billion the previous year, according to official trade data released here.—PTI.

WORLD'S OLDEST GEOMAGNETIC OBSERVATORY

The centenary celebration of the world's oldest geomagnetic observatory, which is also most modern with digital and real-time observation in the country, will begin on April 19, 2004.

V.S.Ramamurthy, secretary, Department of Science and Technology will be the Chief Guest and G.Madhavan Nair, chairman of Indian Space Research Organization will make a keynote address on 'Geomagnetic and Space science'.

THE OBSERVATORY, NAMED AS Alibag Observatory, was shifted from Colaba in South Mumbai in 1904 when the government decided to introduce electric trams in Mumbai for public transportation. Electricity affects the magnetic observations, according to G.S.Lakhina, director, Indian Institute of Geomagnetism (IIG). Alibag observatory, that is part of the international real-time geomagnetic observatory network, is part of the 'Intermagnet', Lakhina said-PTI.



Global HR outsourcing is valued at \$27 billion and of this India accounts for \$2 billion.

NOW, ALOO AND ARRE GET INTO THE ENGLISH DICTIONARY

English is being spiced up with a sprinkling of some more words from Hindi.

In the latest edition of the Oxford English Dictionary, there is already a host of Hindi words, including *angrez* (English person) and *badmash* (naughty) while many more are being entered into the Collins Bank of English, which screens words for entry.

The Hindi words likely to find a place in the latest dictionary are: *achha* (OK, or is that so?), *aloo* (potato), *arre* (used to express surprise), *Chuddi* (underwear), *desi* (local, indigenous) *filmi* (related to Bollywood) *very filmi* (Drama queen or king), *gora* (white person), *jungle* (uncultured) and *yaar* (friendly form of address).

According to a report in The Observer today, Arfaan Khan, a linguist based at Reading University, told reporters at the University of Newcastle to expect a “whole new dialect” to emerge.

Many Asian words have already been naturalized into English. ‘Bungalow’, ‘cheetahs’ and ‘ganja’ have all been shipped over from the sub-continent.

It is within ‘culinary speak’ that the largest changes are expected. “The British food habit has been transformed by the arrival of Asian people in the community.” Said Mahendra Verma, director of Hindi programme at York University.

“The words are entering local vocabularies. *Masala* is replacing spice, *mooli* means white radish, and the word *balti* is actually Hindi for the type of pan that the dish is cooked in.”

Accepting the words into the dictionary will also help British viewers to understand what is being said when actors in Anglo Indian comedies use Hindi phrases, the report said.



Small savings in India during fiscal 2003-04 stood at Rs.3,74,666 crore.

WHEN SAYING HELLO BECOMES A BUSINESS

Aparna Chandra

They are literally teaching you to say hello all over again. And sure it is serious business. Times have traveled far from that favourite summer time occupation of enrolling in a public speaking course to now when voice training is fast becoming a specialized genre.

Here's the spread-a voice or speech training module could be to train for a call centre, to neutralize regional accents, to acquaint yourself with a foreign accent, to give voice-overs, to be a radio jockey or, simply the traditional "personality development".

"Voice training is certainly a booming sector but one that is still in its nascence here," says Sangita Rohera, director The Redwood Contact (TRC), training course. "What has largely changed about a voice training course is that today apart from being a means of self-enhancement, it's become something that can better your career prospects as well. In fact, the demand for voice trainers greatly supercedes its supply," she adds.

Soon, Rohera observes, more than a Yankee or a Brit accent demand will grow for global accent trainers as "today BPOs service clients in countries as diverse as Spain and Australia where the focus is on clear and correct speech." At least 400 students have done the TRC course since it was launched eight months ago.

It's not always those headed towards a call centre who knock at a voice trainer's door. At Tasmac Management Training Resources (TMTR), several techies have actually fine-tuned their presentation skills. "With help desks going international, it's crucial to sell your service with just your voice over the phone. You obviously need to sound right," says director Pradeep Arora.

Things have changed for even those who have been running the conventional speech classes. "Ten years ago I started with my workshops on confidence building through mind control, meditation, spiritual breathing. Part of this has been confidence in one's speech. While the enquiries and enrollments have never dropped (approximate 350 a year), what has changed about speech modules is that we focus more on casual and spontaneous conversation rather than a structured one, as a reflection of current social trends," says Dr.Sudhir Arora.

Mumbaiite Khodus Wadia, the voice in several television ads, was in Pune recently with his brand of training, "My sessions in studios are more of a psychological process to help kill that anxiety that inhibits some from expressing themselves. Today, my students take up anything from giving voice-overs to RJ'ing. Though old professional preferences do exist, the calling for those willing to give their voice a sound hearing is certainly growing louder."

(The New Indian Express)

India exported nearly Rs.6,000 crore worth of food grains during 2003-04.

AN INDIAN CENTURY

Infosys Technologies, the trendsetter in the Indian IT world, had become a billion dollar company. It has created many millionaires over the years and has rewarded its shareholders and employees very well. Kiran Mazumdar Shaw's biotech company, Biocon, had a great opening in the stock market recently and its value also exceeded one billion dollars. Again the company has created a lot of wealth for those who put their faith in it. In 2003-2004, Reliance group became the largest creator of wealth in the country. The two-wheeler manufacturer Hero Honda has predictably maintained its record as the largest manufacturer of two wheelers in the world and has declared a 1,000 percent dividend. Tata companies TELCO, TISCO and TCS have already crossed the \$ one billion turnover.

The first two companies represent the new entrepreneurial spirit in the country. Both companies were promoted by first generation entrepreneurs who became role models for their industries. Interestingly, both set up

their companies during the pre-liberalisation days. They had to undergo struggles to build world class companies. And since then they have zoomed forward. Hero Honda may have Japanese collaboration, but their Indian promoters, the Munjals, rose up from the ashes of the partition days. Their's is a truly rags to riches story. The Tata group had to face tough competition both in the automobile and steel sector when the economy was no longer protected. But the group reoriented itself to changing times and emerged triumphant.

These are true Indian success stories. Infosys promoter Narayana Murthy did not come from a privileged background. His father was a school teacher while Mazumdar Shaw's father was a professional working for a company. They were only armed with good Indian education and confidence. They did not go running to the government to bail them out at any point of time. These are the people who really make you feel that India is shining. Not leaders, not politicians.
(An editorial in The Sunday Express)

'CONNECTIVITY REVOLUTION ON'

A connectivity revolution is taking place throughout the country in 1998; there were only 12 lakh cellular phone connections. But now, there were four crore connections. Around 20 lakh connections were being given every month.

The Government had drafted a policy which made the common man afford a cellular phone. The Government had allotted Rs.24,000 crores for laying good quality roads from north to south, and east to west.

A sum of Rs.64,000 crores had also been allotted under the village Road Project to lay.

A total of 2.29 lakh buses were sold in our country during April-February 2003-04.

DOCTOR'S ORDER

Sick they may well be, but their wallets are far from emaciated. And that's what matters for the doctors, nurses and other healthcare providers who thrive from the flow of patients into Indian hospitals.

A recent report from the confederation of Indian Industry (CII) and consulting firm McKinsey says there is a Rs.10,000 crore opportunity in "medical tourism" for up market hospitals in exotic locations around the country—and that's just 3 to 5 percent of the existing healthcare delivery market.

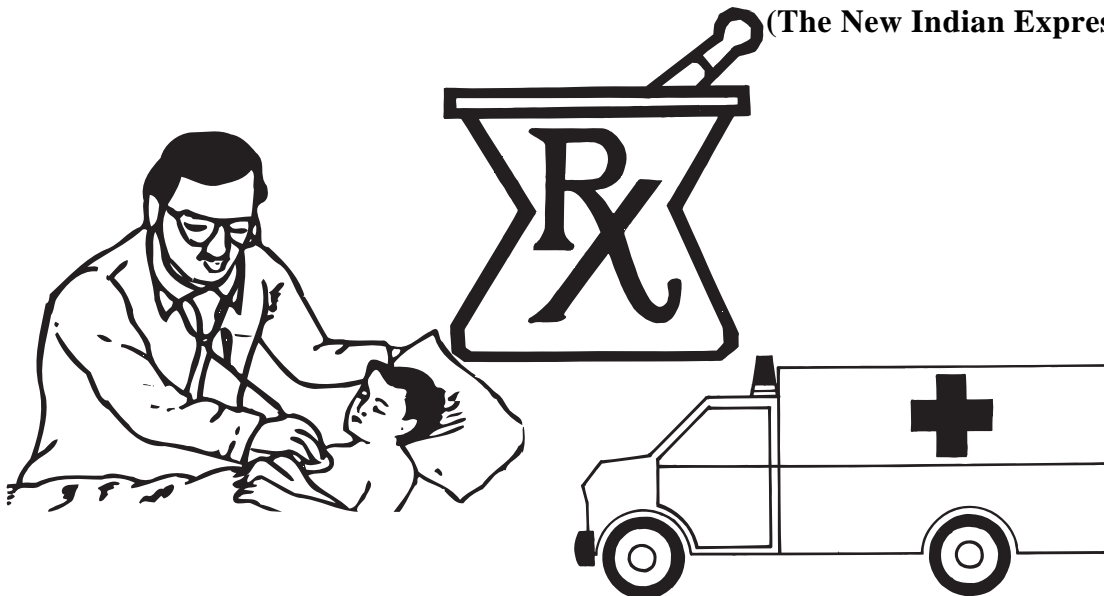
Many hospitals are well placed to position themselves as ideal health spots for those who fail to manage expensive healthcare accounts in the developed world, according to the report. India has 1.5 beds per 1000

people, while China, Brazil and Thailand have an average of 4.3 beds, the study says, adding that healthcare spending could more than double over 2004-2014.

Dr.Naresh Trehan, chairman of CII's National Healthcare Committee, says, "Compared with most developed countries such as the UK or the US, treatments like those for dental problems or major procedures like bypass surgery or angioplasty in India come at a fraction of the costs elsewhere. Cardiac Surgery in India, for instance, costs one-tenth of the bills many foot for a similar procedure in North America."

Right now, most of the patients who come to Indian hospitals are from West Asia and South Asia. They are now likely to be joined by fatter wallets from the North.

(The New Indian Express)



Rs.46,472 crore worth of gem and jewellery were exported by our country between April 2003 and February 2004.

THE POLITICAL ECONOMY OF OUTSOURCING

K.Subramanian

U.S. companies under financial stress began their cost cutting pilgrimages and took to digitization as the road to Mecca

It is a horror staring at U.S. professionals these days—the horror of receiving pink slips and their jobs going to lowly recruits abroad. They blame it all on outsourcing. Indeed, there are reasons for their despondency.

Leading journals have been writing on “global white-collar migration,” “the new job shift,” and allied topics and giving details of job losses in several areas, which are increasing in number. The companies affected include many in the Fortune 500 list.

A heated debate is going on in the U.S. among academics and politicians. Bills seeking to restrict outsourcing have been introduced in several States as also in the Senate. Against these developments, it is difficult to deal with the issue dispassionately. Unwittingly, Gregory Mankiw, Chairman of the President’s Council of Economic Advisers, was caught in the crossfire over his remarks that outsourcing is “probably a plus for the economy in the long run.” His remarks sounded so impolitic in an election year that President Bush distanced himself from him. However, Dr.Mankiw did not resile from his academic stand. In his reply to the Speaker of the House of Representatives, he admitted that “any economic change, whether arising

from trade or technology, can cause painful dislocations for some workers and their families” but added that there should be policies to help workers to prepare for the change. Alan Greenspan, Chairman of the Federal Reserve, joining the debate a few days later, said that protectionist cures might make the situation worse. He hopes that the U.S. would manage to replace lost jobs from lower wage foreign competition with jobs in advanced industries as it had done in the past. The poser is, “Can it do it?” For an answer, there is needed to go into the political economy of outsourcing.

Factors behind outsourcing

Global sourcing or outsourcing is as old as East Indian Company. Management theorists and economists have analysed the factors that promote outsourcing. The rise of the multinational corporation (MNC) would not have been possible without outsourcing. No company can hope to produce all its requirements in-house and has to procure raw materials and components from other parties. There are risks attached to contracts, especially if proprietary assets like know-how, patents and brand names have to be safeguarded.

Ronald Coase, a Nobel Laureate Economics, explained that there are “transaction costs” attached to contracts and contracts invariably fail. It becomes necessary to ‘internalise’ the assets to appropriate the

Meghalaya has 9.22 million tonne of uranium deposits.

rents in full. Branches and subsidiaries are floated abroad under common ownership subject to control and co-ordination. In such a situation, commodity flows across countries turn into intra-company flows. In one of its studies, UNCTAD assessed that nearly 70 per cent of international trade is in the nature of intra-company trade and such trends have been on the increase.

Post war developments

The post war years saw relocation of manufacturing from developed to developing countries, in areas like light engineering, shoes and apparel. Manufacturing was segmented globally and labour intensive parts were located in low wage destinations. Companies like Nike and Adidas were known for this style of operation. They had managers who provided designs for component manufacture in hundreds of locations and co-coordinated component-assembly in convenient countries. They were footloose in that they arbitrated on tax and labour regimes. These manufacturing patterns led to frictional unemployment in home countries. Those displaced could however be re-trained in other skills. In the process, within a reasonable time, they went up the food chain. The burgeoning service sector absorbed many of them.

The model described above held good even around the time the electronics revolution took over in the post war era. Electronics had its own special features and lent itself ideally to segmentation. Pioneers like Intel and Texas Instruments followed the FDI strategy of assembling chips in wholly owned subsidiaries in China, Malaysia and Hong Kong. Even as low wage locations

concentrated on low skill segments, the labour back home worked on high value hardware. Successive reductions in the price of hardware generated continuing demand and sustained higher levels of growth and production. Wages rose in the Silicon Valley more than proportionately. High levels of consumption sustained the economic boom.

To conclude the story; outsourcing was the driving force behind the global computer development. There was common cause between workers in East Asia and those in the Silicon Valley. It is doubtful whether similar symbiosis could be replicated, as there is no new technology in sight, which might bring about a paradigm shift as in the electronic years. Computer technology has plateaued except for incremental additions in the manufacture of new chips with higher capacity and in bandwidths. Moreover, the convergence of information and communication technologies (ICT) distorts the structure and patterns of production when combined with the current economic recession.

For economists like Mankiw and Greenspan the hope is that the American capitalist model that fosters flexibility and entrepreneurship, innovation can meet the challenge this time also. This is more a matter of faith. The trends in ICT seem to work against any hope of economic revival in the near future.

The driving force behind outsourcing in the ICT sector is for global labour arbitrage. As Stephen Roach put it, it is “—a by-product of IT-enabled globalization that is now acting as a powerful structural depressant on traditional sources of job creation in high-

Handicraft exports from our country are slated to touch Rs.32,700 crore by 2009-10

wage developed countries such as the U.S.” It is overlaid on the earlier jobless recovery contributed, again, by ICT.

U.S. companies under financial stress began their cost cutting pilgrimages and took to digitization as the road to Mecca. If in earlier years, they segmented production chains and shifted labour intensive parts to low wage locations, now they would digitize them and access services from abroad through wires. They would get the service at 20 per cent of U.S. wages. The revolution is that digitization converts labour or service, which was considered non-tradable from the days of Adam Smith, into tradable units. For many services, physical presence is no longer necessary and the service personnel may be located anywhere in the world.

For those in developing countries, it started in a big way in the late 1990s when the Y2K fever gripped the world. Thousands of professionals entered the U.S. By 2000, the fever was over. It also coincided with the dotcom collapse. There began a backlash against foreign professionals. The U.S. responded by denying visas to professionals. Unfortunately, it coincided with the bursting of the stock bubble and the financial bankruptcy of many established firms. Those on survivor kits had to undertake fierce cost cutting programmes and digitization provided a way out. They decided to jump the visa walls and export the jobs to cost effective locations like India.

Initially, the services were restricted to back office functions like call centres, help desks and customer support coming under the category of BPO. From BPO to other IT enabled services such as engineering design, architecture and radiography it was a short hop. The most exciting developments are in research

programmes where companies like GM and Siemens locate global centres.

The demand dimensions are mind-boggling. Earnings for companies like Infosys and Wipro have been increasing at unprecedented rates and volumes. The UNCTAD’s Report (E-Commerce and Development Report 2003) provided very optimistic estimates of earnings drawn on the assessment of U.S. consulting firms. It predicted a market of \$300 billion by 2004.

The National Association of Software and Services Companies, the industry association in India, predicts in its ‘Strategic Review 2004’ an earnings of Rs.33,010 crores, up by 24.4 per cent from 2003. In the same way the estimates of job losses create panic in the U.S. the employment and earning estimates cause euphoria in India. These lamps light a good part of ‘India shining!’ However, there is need for caution.

It is also a hot issue for the Indian public and politicians. For them, the stakes are high. The earnings, even if they get reduced over time, are valuable additions to the Indian economy. The country reaps the benefits of its past investment in higher education. It mitigates the problem of educated unemployment. However, prudence would suggest that it is not a remedy for all its ills. It is only peripherally linked with the mainstream economy. There is fear that it creates ‘islands of affluence’ amid a sea of poverty in the country.

There is a moral to this account. Erstwhile ‘free traders’ in the US may turn to protectionism. Vintage **statists** like Indians should not turn to crypto-free trade, as they have to safeguard their interests in more critical areas than ITes in the larger context on WTO negotiations.

(The Hindu)

ADB TO INCREASE INDIA LENDING, ISSUE MORE BONDS

The Asian Development Bank (ADB) plans to come up with its second rupee bonds issue and hike loan assistance for India to \$2 billion annually during 2004-07.

“We are planning to give a higher \$2 billion assistance to India annually in the next three years,” ADB has sanctioned close to \$1.5 billion in the last fiscal, (2003-2004) which would be stepped up from this fiscal.

Some of the companies which are stated to get ADB loans are NTPC, NHPC and Power grid. ADB is also planning to extend assistance to relatively poorer states like Madhya Pradesh, Assam and other North East States for overcoming fiscal problems and carrying out reforms.

Admitting that India has never been an ‘aid-dependent’ country, ADB Country Director, Jonghe, said “our assistance can help states to leverage reforms, implement best practices, fiscal consolidation and capacity building, which would in turn remove the regional disparity.” (**The New Indian Express**)



BRITISH MEDIA COVERAGE OF INDIA MORE POSITIVE NOW: ROMEN SEN

Hassan Suroor

Romen Sen, outgoing Indian High Commissioner to the United Kingdom, has called for the British media coverage of India to reflect the “totality” of the country’s reality.

Alluding to a recent channel 4 programme on the human rights situation in Jammu and Kashmir, Mr.Sen said he was not against criticism. In fact, some of the most robust criticism had come from Indians themselves. “We are not a police state,” he said. He did not believe in “knee-jerk” reactions. What was not on was “negative stereotyping.”

However, Mr.Sen pointed out that in the past two years that he had been here, he had noted an appreciable change in British perceptions of India. The media coverage of India had not only increased, but was now becoming more positive. “The process is gathering momentum.”

Mr.Sen, who retired today (30/06/04), said that Indo-British relations were at their best today and the Indian potential in a whole range of areas was being increasingly recognized. In the past two years, there had been a quantum jump both in British investment in India and the Indian investment in Britain. “Indian investment in Britain now equals the British Investment in India,” he said, pointing out that British exports to India had gone up by 30 per cent.

‘SMART-SHORING’ IS THE NEW BUZZWORD

With a nice round number like \$3.6 billion ringing in every one’s ears, the annual strategy summit of the Information Technology-Enabled Services and Business Process Outsourcing (ITES-BPO) sector, organized by the National Association of Software and Service Companies (Nasscom), got off to an upbeat start here today (9-6-04). That’s the total size of India’s ITES-BPO exports in 2003-04 – up 46 per cent over the previous fiscal, and almost a third of all IT software and services earnings abroad.

But industry panelists warned that the performance was still peanuts—when stacked against the total global volume of the outsourcing business. \$250 billion. And how long can India encash its edge: low cost of human resources and the ability to speak English? Dan Sandhu, Chief Executive of the India operation of U.K. outsourcing leader, Vertex, aired the Summit’s first new buzzword: ‘smart shoring’ – a canny mix of inshoring and offshoring was the smart way to go, he suggested, for the developed nations.

And India was well poised to ‘pluck the low hanging fruit’ to use the neat phrase of James Hale, Managing Partner of the U.S.-based venture capital company, FTV Management. Even that would be a good chunk of the 250,000 jobs that are up for offshoring in the West, he suggested. **(The Hindu)**

‘PROMOTION OF MEDICAL TOURISM WILL BOOST FOREIGN EXCHANGE EARNINGS’

The Federation of Hospital Administrators will approach the Centre for formation of a consortium of health care providers to devise ways for promoting ‘medical tourism’ and earn foreign exchange. In this context, FHA representatives have proposed to meet the Union Ministers of Finance, Health and Tourism in New Delhi to impress upon them the need for such a consortium in making India the ‘Paradise of health care’. The FHA is a body of administrators of various hospitals in the country.

Government must first form a committee to look into the vast potential for getting patients from abroad.

“The waiting time for surgeries in countries such as the U.S. and the U.K, and the cost-effective nature of Indian hospitals, along with the tourist potential, should be to our advantage.” The income from ‘medical tourism’ could be more than the total health budget if the situation was capitalized to full potential. The Centre was called upon to recognize health sector as an infrastructure industry to enable it get more concessions.



(The Hindu)

GOLDMAN SACHS SAYS INDIA IS BIGGER GROWTH STORY THAN CHINA

The global merchant banking firm Goldman Sachs today said India has the potential to raise growth rates over the next five years from an average of 6.1 percent to 8.1 percent; it can match China in the quality of its Infrastructure and education. Describing India as a potentially a “bigger growth story than China over the long run,” it says fundamental changes in the economy and its governance support the country’s ability to meet these projections.

Releasing its latest report on India, Goldman Sachs says India’s service led growth strategy is benefiting from domestic and global demand. Besides, globally competitive firms are emerging from the country’s “historically protected private sector” while broad based reform is fostering infrastructure development and greater openness.

The report considers infrastructure and education to be two crucial structural conditions to keep India on a steady growth path, giving the country’s till towards services sector activities. Making a comparison of the four fast growing economies of Brazil, Russia, India and

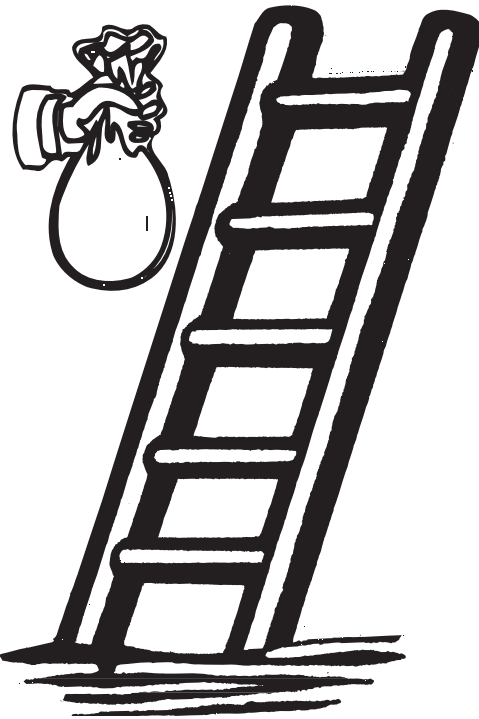
China (BRICs), it says of these four, China and India are likely to become the world’s first and third largest economics respectively roughly 2040. “One highlight of our findings was the remarkable and largely underappreciated growth potential for India,” it observes while remarking that investors and corporations have focused intensively on China.

Noting that economic growth in China is slated to taper off from 8per cent annually during 2000-05 to 2.9 per cent in 2050, Goldman Sachs projects that India will sustain an over 5.2 per cent growth over the same period. At the same time, it warns that

India lags behind the other BRIC economies in levels of openness, basic education and infrastructure. “If the country can strengthen these conditions, India may well realize its potential as the sleeper success story of the BRICs,” it predicts.

The report says India’s gross domestic product was slated to grow by 6.1 per cent during 2005-10, and then come down to 5.9 per cent in 2010-15.

(The Hindu)



India produced 12,000,000 tonne of mangoes as against the total world production of 23,455,000 tonne last year.

IT'S GOLD SHINING IN INDIA

The saying goes that “all that glitters is not gold.” But here in India, it sure is gold glittering. According to the World Gold Council, consumer demand for the yellow metal has improved dramatically over the last year in India.

Total consumer demand in the country for gold (jewellery and net retail investment) was up by 25 percent in tonnage terms and by 37 percent in rupee terms in the first quarter of 2004, compared to the somewhat depressed levels of a year earlier.

Sanjeev Agarwal, managing director, World Gold Council, Indian Subcontinent adds, “In India too, we have witnessed a surge in consumer and investor confidence in gold which is reflected in the 21 percent growth in demand for gold jewellery and a whopping

47 percent increase in investment in gold in the form of bars and coins. In spite of the increase in gold prices, the Indian consumers continue to be attracted towards gold jewellery, from an investment point of view, demand for gold bars and coins have increased because of its values of providing stability and security to the overall investments and has ensured that the shine is back in the Indian gold market.”

“Though the trends are positively inclined for the future, other political and economic factors will be crucial for the industry. We expect the new government to take some positive steps to channelise part of the Rs.5,000 crore of annual savings being invested in physical bars and coins to be routed through the banking sector in the form of a more efficient savings vehicle,” Sanjeev further stated. **(The Hindu)**



INDIAN IMMIGRANTS LIVE LONG IN CALIFORNIA

Indian immigrants have the highest life expectancy among California residents, exceeding the state average by almost six years, according to a recently-released study. The study, titled “The Demographics of Mortality in California” and conducted by the Public Policy Institute of California (PPIC), revealed that immigrants in general outlive the US born residents. Life expectancy for immigrants in California was 81.5 years, compared to 77.4 years for US natives. Almost all of the Asian subgroups, except Laotians and Cambodians, have life expectancies exceeding the state average according to the report, which was based on data from the 2000 US census and the California Department of Health Services.

The study concluded that among the 19 ethnic groups studied, which included White, Black, Mexicans, Cubans, Japanese, Chinese, Filipino and Vietnamese groups, Asian Indians had the highest life expectancy of 84.3 years. **(P.T.I)**

The actual direct tax collections of the Centre during 2003-04 stood at Rs.1,04,678 crore.

NASSCOM PROJECTS SOFTWARE SERVICES REVENUE AT \$20 B

The Indian software and services industry is projected to cross the \$20 billion mark in 2004-05, with exports from this sector growing at 30-32 per cent to reach revenues of over \$16.3 billion, according to the National Association of Software and Services Companies (Nasscom), a chamber of commerce of IT software and services industry in India.

Speaking to newsmen, the Nasscom Chairman, Jerry Rao, said, "Despite the challenges of slow growth of IT spending globally, jobless recovery in major markets, and appreciation of the rupee, the Indian software and services industry has been able to maintain its growth momentum and consolidate its partnership with overseas customers, adding to their competitiveness". An encouraging trend during the previous fiscal was the healthy growth of the IT services sector, which has gone up from \$7.1 billion in 2002-03 to \$8.9 billion in 2003-04, registering a growth of 25 percent. The

year also witnessed increased maturity of the Indian ITES-BPO sector, which grew by 46 percent, adding about 70,000 jobs.

"The need of the hour for the industry is to alleviate service excellence which includes knowledge capital, information security and service delivery to further strengthen India's position as leading software and services destination," added Mr.Rao. It helps that the industry has expanded its radar to new service lines such as package software implementation, systems integration, and R&D engineering and network management as new horizon for robust growth.

The Nasscom President, Kiran Karnik, pointed out that the Indian IT industry is among the top ten industries in India.

The industry is witnessing a transition phase and evolving in terms of delivery models, service offerings, industry composition and market reach.

U.K. DEPARTMENTS WANT OUTSOURCING IN INDIA: REPORT

Apart from multi-national financial institutions, British government departments now plan to outsource in India as part of their cost-cutting and efficiency drive.

"Departments should seek to match the savings achieved by private-sector firms through so-called off-shoring," Sir Peter Gershon, former chief executive of the Office of Government Commerce, recommended in his final confidential report for the Treasury last month. The Sunday Times reported today (16/05/04) —PTI.

India is the second largest producer after China in fruits and vegetables with a production of about 146 million tonne.

MANUFACTURING SECTOR UPBEAT: SURVEY

The latest ASCON survey reports that the Indian manufacturing sector is continuing with its bullish trend thanks to strong fundamentals of the country's economy and a pick-up in overall demand in many sectors, which were earlier registering moderate and negative growth.

According to the survey, carried out by the Associations Council of the Confederation of Indian Industry (CII), the manufacturing sector is upbeat and the trend, which started last year (2003), is expected to gain ground, leading to an increase in overall production, sales and exports. Out of the total of 129 sectors reporting production, 26 sectors recorded an excellent growth rate of more than 20 percent. Thirty-five sectors recorded a high growth rate of 10-20 percent, 49 sectors registered moderate growth rate of 0-10 per cent while 19 sectors reported negative growth. The performance this year (2004) was far better compared to the corresponding period last year.

Similarly, out of the 62 sectors reporting sales as compared to 76 last year, 13 sectors registered excellent growth, 19 high growth,

and 22 sectors reported moderate growth while 8 sectors recorded low or negative growth.

During the corresponding period last year, 7 sectors reported excellent sales growth, 20 recorded high growth rate, and 43 recorded moderate growth rate while 6 sectors had registered negative growth. Cast iron spun pipe, cold rolled steel, and sugar machinery recorded negative sales growth. Indian manufacturing is not only charting a success story in the domestic front, but is also doing well globally, conquering many markets. The latest survey covers 47 sectors compared to 57 last year, of which 21 sectors have shown excellent growth compared to 22 last year, witnessing more than 20 per cent increase in exports.

The figures for 11 sectors are in the high growth category, defined as an increase in exports between 10-20 per cent and 9 sectors recorded moderate growth, defined as 0-10 per cent growth. In the low growth category, which is defined as an increase in exports of less than 10 per cent, only 6 sectors registered a fall in exports. **(The Hindu)**



There are 5 national parks, 12 wildlife and three bird sanctuaries in Assam.

SARAS: A SWADESHI SLAP ON THE ALIENATED INDIAN

S.Gurumurthy

Saras. Many would not have heard of it. This is a civilian aircraft made by National Aeronautics Limited, NAL for short. SARAS is a 14-seater aircraft. An Indian make. The story of SARAS is very instructive. The Indian newspapers would not tell the SARAS story. So hear what Shri Srinivas Bhogle, a scientist who was in the NAL team to build the SARAS, has to say about SARAS.

SARAS is very economical in design, a fraction of the cost the West incurs for developing a new design. The SARAS work started over 15 years ago. But until 1998 no government would look at it. Dr.Murali Manohar Joshi as the Minister of Science and Technology fought and got for the project Rs.135 crore.

The NAL team began its work really only in September 1999. But, by then, NAL was already under US technology sanctions as it was supporting the government's missile programme. Shri Srinivas says all its purchases were blocked, it couldn't even smuggle stuff in by subterfuge. But NAL worked and struggled resolutely.

The SARAS programme became that wonderful binding force between aerodynamics, structures, materials, flight mechanics, propulsion, composites and controls. He says "a third of NAL's employees worked voluntarily every Saturday with a compensation package of only rava idlis and bisi bele bath. This went

on for five years." The chief designer's tablet intake crossed 20 a day, says Shri Srinivas. Yes, 20 tablets a day. The speed trials commenced in March 2004. SARAS reached a speed of 90 knots, that is 198 km per hour. It would need 105 knots for its nose to lift and take off. At this stage, suddenly, the Air Chief of Staff announced that SARAS would fly on May 28. Everyone was shocked. The first flight is generally a hush-hush one. Every one was nervous. With monsoon advancing, the weather was bad. The stage was finally set for a take-off on May-29, instead of May 28.

On May 28, Shri Srinivas walked into the Pilot's final briefing. Sqn Ldr Venugopal laid out the plan, discussed every contingency, including the failure of the mission technically known 'a/c becomes u/s', (meaning aircraft becomes unserviceable) and Shri Venugopal dying! On May 29, at the airport there was palpable tension. Venugopal and his copilot Shri R.S.Makkar, a Sardar, got into the aircraft. The weather was windy, so risky.

Two 'chase' aircrafts took off first. Then SARAS began taxiing. At 8.10 am its engines began roaring as it started to gather speed. Its nose lifted, everyone clapped. Said a proud Srinivas. "As SARAS climbed higher and higher our clapping attained a new crescendo; this was the sound of a new, proud and shining India. We built our plane and, look, we're bloody flying it."

At 8.45 am SARAS touched down, a Tricolour appeared from nowhere. Venugopal came out and saluted his boss who hugged him. He said they had ‘a great flying machine’. Everyone was euphoric, shouting, cheering, and hugging, says Srinivas. Shri Venugopal’s wife brought their two-year-old child to Venu. Srinivas said, “SARAS is not going to separate the child from Venu any more.” Indeed, a moving tribute.

But how did the Indian elite respond to SARAS. Says Srinivas, many people run down such Indian efforts by saying rather cruel things like; “It is assembled” or the Russians built such a plane 25 years ago, the Brazilians did it 10 years ago. He calls them dumb statements. He says they do not know how technology evolves. It is assimilated incrementally.

He says “start with US LRUs (line replacement units) today. Convert to India LRUs tomorrow.” Future wars, Srinivas says, will not be for fair maidens, or a piece of land, but for technology, technological strength.

SARRAS made the NAL people to work together. Srinivas says the team also ‘endured snide remarks’ from the media. The SARAS success was small news for most newspapers. Not a word about how the NAL struggled. Not a word about how it overcame the US tech sanctions. Not a word about how Brazil is selling these planes an executive jets at \$21 million a piece.

Only snide remarks. The Indica and Indigo cars of Tatas put us among the auto-makers of the world. The cryogenic engine devised by ISRO puts us among the space powers of the world. Likewise, the SARAS put us among the aircraft makers of the world. It is significant for India. But not a word in the media as to what it means for India.

Imagine the scenario if the SARAS test-flight had failed and Venugopal had died! The media would have gone to town as to why we should be reinventing the wheel: when aircraft are available on the shelf why make them. Yes they will be on the lookout only for the failures of India. SARAS is indeed a sound slap, Swadeshi slap, on the elite, the alienated Indians.

(The New Indian Express)

REVERSE COLONIALISM

K.G.Kumar

Guess which erstwhile Commonwealth country has the distinction of being the eighth largest investor in the UK? Why, apna Bharat, of course, the last post of British Raj. According to latest figures published by the UK Trade and Investment agency, the UK attracted 811 investment and expansion projects by overseas companies, creating more than 25,000 jobs. India has 28 projects in the UK creating 646 jobs, ahead of China, which has 23 projects, creating 324 jobs.

And among the sectors topping the list of investments are the good old ones—software (with 76 projects), Internet and e-commerce (73) and electronics (68), followed by pharmaceuticals and biotechnology (58). (The New Indian Express)

An estimated 4.5 lakh used cars were sold in our country last year as against 8,44,000 new ones.

BIOTECHNOLOGY: INDIA EMERGING AS A PARTNER OF CHOICE

K.T.Jagannathan

India is among the five emerging biotech leaders in the Asia-Pacific region, according to the regional edition of the Global Biotech Report titled "On The Threshold" released by Ernst and Young, a well-known professional services company.

The report has selected India as one of the five emerging biotech leaders in Asia Pacific. The others are Singapore, Taiwan, Japan, Korea and Mainland China. India is currently ranked third in the region based on the number of biotech companies (96), trailing behind Australia (228) and China, including Hong Kong, (136).

The report said that the events of the past year "clearly indicate that Indian biotech companies are getting their fundamentals firmly in place. Business models are maturing and product commercialization capabilities are improving." While noting several policy changes and fresh sources of capital, the report pointed out that "India's position as a biotech player in Asia-Pacific is assuming greater eminence as it continues to build critical mass in terms of skills and capabilities".

The report said "the biotechnology has now the potential to replace information

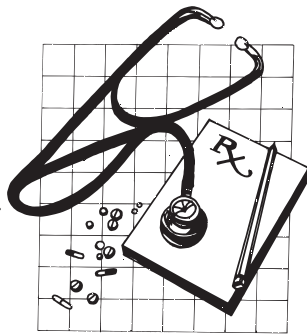
technology as the engine of economic development in the 21st century." In this context, it pointed to the success of Biocon India's public offering.

With its abundant high quality, low cost technical manpower, India was emerging as a partner of choice. Though intellectual property protection in the country continued to be a bugbear, several Indian companies had managed to cross IPR hurdles to work with international partners through confidentiality and non-disclosure agreements, the report said.

Partnering, it said, was equally an imperative for Indian companies as they were increasingly pursuing a resource-intensive, product-driven model for sustainable growth in the wake of the new IPR regime. Indian biotech companies had initially emulated the information technology sector's service based model to earn early revenues, "India's

major biopharmaceutical companies are now accelerating efforts to get bio-equivalent versions of patented, well-characterized recombinant proteins onto the market before the window closes in 2005. The small biotech companies are focusing on innovative research, and are picking niches where there is little competition," the report said.

(The Hindu)



It is estimated that there are about 180 million households in India, of which a little over 10 million have invested in mutual funds.

PRIVATE REMITTANCES TO THE FORE

Private remittances from non-resident Indians have touched record levels recently. In 2003 inflows under private transfers (forming part of the larger category of “Invisibles” in the current account) aggregated to \$18 billion, 30 per cent higher than the previous year’s figure. To understand its true significance, a comparison with the software sector, India’s most promising exchange earner among the services, will help. The latest Reserve Bank of India (RBI) figures show that during the last financial year earnings from software were \$8.63 billion. Private remittances during the same period were over \$14.8 billion. In percentage terms software earnings were 20.37 per cent of the total inflow under “Invisibles” while private remittances accounted for 34.14 per cent. Of course India’s emergence as a software major has already caused a surge in remittances into the country. It holds immense potential as more and more computer professionals move abroad to pursue their vacation. Even during the 1990s as the RBI study shows, Indian software exports demonstrated a significant comparative advantage over the more traditional service exports such as transportation and travel services. That in turn is a reflection of the higher skills of Indian workers going abroad with its obvious implications for enhanced remittances flow into the country.



In fact, there has been a growing recognition of the importance of workers’ remittances not only in India but also in many other developing countries. Remittances have financed the entire merchandise trade deficit for India last year and kept current account deficits in check in many previous years. An RBI study points out that Bangladesh,

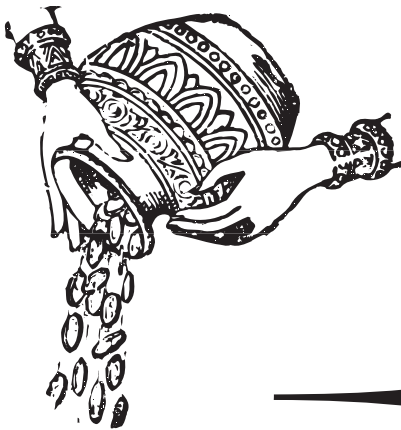
Pakistan and Sri Lanka have benefited similarly from workers’ remittances. There is a strong case for a more comprehensive policy framework to aid the current account flows besides enhancing their effectiveness. A dynamic policy should take account of the shift in the sources of remittances coming into India. With the oil boom in West Asia subsidising the contribution of the region to providing opportunities for unskilled and semi-skilled labour has come down significantly between 1997-98 and 2002-03. However, higher inflows to India from the United States and Europe have offset the loss. Also, the motivation for expatriates sending money to India ought to be better analysed. While even in the recent past, non-resident Indians looked to the higher returns the country was offering (through bank deposits and special schemes such as the Resurgent India Bonds), the motivations seem more complex today. Faced with a huge accumulation of external reserves, the Government has been scaling down the level

India consumed 6,798 million tonne oil products in April 2003.

of incentives to non-resident Indians. Last week the interest rates on non-resident bank deposits in India were aligned with yields offered elsewhere. Yet if past cuts are an indication, there will be no significant reduction in the fund flows. Unlike private capital flows, private remittances do not seem to be unduly influenced by interest rate differentials.

Stability of remittances in relation to capital flows and other current receipts is a great virtue, especially in a context where a surge in remittance during the last three decades of the twentieth century made India the highest remittance receiving country in the world. Accounting for almost three per cent of the country's GDP, expatriate workers' remittances have provided splendid support to the balance of payments. India's demonstrated ability to attract and retain remittances has, on the face of it, more than made up for its relative lack of success in wooing other forms of inflows, especially through foreign direct investment. Yet it would be prudent to emphasize that each type of inflow has its distinctive characteristics and role in the big picture.

(An Editorial in the Hindu)



Rs.4,901.84 crore was the value of marine products exports from India between April 2003 and January 2004.

'DEMOGRAPHIC ISSUES MAKE OUTSOURCING INEVITABLE'

N.Venugopal

Surprising as it may seem, but two experts who have been into hi-tech contract research and development outsourcing for considerable time feel that outsourcing will be driven more by demographic reasons than on cost advantage. Mukesh Gandhi and Dave Zischke, former professors at Michigan State University, who left the academic field to launch Quantech Global Services, a 14-year old automotive design, analysis and engineering services company, point out that cost might be an important factor right now but ten years down the line, it would be pure demographic reasons for the US to depend on offshoring.

In an informal chat with the pressmen, concerning several professional and business issues, Gandhi said, "for some time now it has been cost that drove outsourcing. But in the long run it won't be cost. There are other issues like quality and talent pool. A related, but most important issue is a broad demographic one. The US society doesn't have enough young, employable people. It's becoming a society of old people. In ten years they are going to have a shortage of 1.5 million professionals. Japanese society is also like that. In that scenario, outsourcing will be inevitable."

(The New Indian Express)

CONGNIZANT TO RECRUIT IN THE US AND TRAIN IN INDIA

IT major Cognizant Technology Solutions has embarked on a new initiative of recruiting management graduates from Ivy League B-Schools in the US such as Stanford, MIT, Carnegie Mellon and Columbia and bringing them to India for six months to a year for training and orientation.

According to Cognizant president & CEO Lakshmi Narayanan, "15 management graduates would be hired from the top schools in the United States. These professionals would be then deployed in customer-centric and consulting roles such as relationship managers and account managers." He further added that by taking this kind of approach, the company would be able to offer greater value to its customers.

The training in India would cover the different aspects of the onsite-offshore model including Cognizant's pioneering 4th Generation offshore model, he said. Process and quality management, programme management, strategy and consulting, domain-specific solutions, financial modeling etc. would be some of the focus areas for this training.

Speaking at a conference call after announcing the company's earnings. Lakshmi Narayanan said, "Cognizant has been the most active among the leading IT services players in India in recruiting from premier B-Schools in India. Cognizant recruits only from the top seven B-Schools in India".



TAX COLLECTIONS CROSS TARGET AFTER NINE YEARS

Buoyant revenue collections for the last fiscal, 2003-04, will provide a good cushion for the next Government when it finally presents the budget for this year. Tax inflows have risen by 18 percent, according to provisional data, ensuring that the budget target has been crossed for the first time after nine years. This has also pushed up to the tax-GDP ratio to over 9 per cent after five years.

Disclosing this here today, (April 20, 2004) the Finance Secretary, said direct tax collections rose by a steep 27 per cent while indirect taxes increased by 12.3 per cent.

The total revenue collections are estimated at Rs.252,162 crores as against the budget estimates of Rs.249,315 crores. Direct tax revenues crossed the one lakh crore marks for the first time touch Rs.104,678 crores while indirect taxes are estimated at Rs.147,484 crores in 2003-04. **(The Hindu)**

85.34 lakh tonne of groundnut would be produced by India during the current season (2003-2004).

INDIAN LEATHER - COVERING NEW FRONTIERS

Indian leather industry is marching ahead by being in tune with customer preferences and exploring new export markets. If the industry is able to keep pace with the requirements of the global market and caters to an expanding domestic market, it is largely due to the efforts of 2.5 million people directly employed by it.

Employment generation and foreign exchange earning capability are aspects that make the Indian leather industry a significant contributor to the economy.

Riding piggyback on the abundance of livestock, the industry has almost consistently been improving its performance. India's export of leather and leather products in 2000-01 touched an all time high of \$1963.55 million, which was nearly 23 percent more over the previous years' \$1604.35 million.

Tamil Nadu has a dominant presence in leather and leather-based industries, accounting for around 70 percent of the total installed tanning capacity of about 225 million pieces of hide and skins a year. The state accounts for over 45 percent of the country's export of leather and leather-related products such as shoe uppers, shoes, garments, and so on. The good news for the industry is the signs of loosening of the Chinese grip on the market.

Indian leather footwear makers are upbeat about the future because Europeans are

looking to source from smaller Indian companies after the Chinese industry had proved too inflexible in handling small orders. Added to this, the improvement in the quality of Indian footwear has helped the country emerge as an alternative to China. Footwear is the most promising segment. Leather footwear exports are expected to grow to \$2.5 billion by 2010, a four-fold increase over the current level.

“India”, “will emerge as a leader in the manufacture of finished leather goods. Already, the country ranks high amongst nations that convert hides and skins into finished leather goods. The significance of the industry has not missed the attention of the Centre and modernization of the leather sector is high on our priorities. There are many exciting packages under consideration for the leather sector.”

OUR STRENGTHS

- Employs 2.5 million persons.
- A large part (nearly 60-65 percent) of the production is in the small/cottage sector.
- Annual export value poised to touch about US\$2 billion.
- Among top 8 export earners for India.
- Endowed with 10 percent of the world raw material, export constitutes about 2 percent of the world trade.
- Has enormous potential for future growth.
- Very high value addition with the country.

US is India's second largest shrimp buyer after Japan accounting for purchases of \$1 billion.

ENGINE OF GROWTH

The auto industry is one of the key sectors of the Indian economy. The industry comprises of automobile and the auto component sectors and encompasses commercial vehicles, multi-utility vehicles, passenger cars, two-wheelers, three-wheelers, tractors and related auto components. The industry has been growing since the opening up of the sector to foreign direct investment (FDI) in 1993. It has deep forward and backward linkages with the rest of the economy, and hence, has a strong multiplier effect.

This results in the auto industry being the driver of economic growth and India is keen to use it as a lever of accelerated growth in the country.

The component industry is undergoing vertical integration resulting in the emergence of systems and assembly suppliers rather than individual components suppliers. Thus, while most component suppliers are integrating into tier 2 and tier 3 suppliers, larger manufacturers and multinational

corporations (MNCs) are being transformed into tier 1 companies.

The auto component industry in the country has made rapid strides.

The number of key players is estimated at 416 as on 2002-2003, employing around 250,000 people. Turnover has almost doubled in the last five-year period from \$1.9 billion in 1995-96 to \$5.1 billion in 2002-03. The auto component industry in India is now equipped with significant advancement in its technological capabilities, due to its alignment with major vehicle manufacturers in the country and abroad. Therefore it has high export potential. Since the late 1990s, exports of auto-components have grown by a CAGR of about 20 percent. Currently, the share of exports out of the total production of auto-components is 10 percent. During the last 5 years, the exports of auto components increased from \$215 million in 1996-97 to \$800 million in 2002-03, which is more than 15 percent of the total output.

(The New Indian Express)

EXPORTS: NEED FOR CORRECTIVE ACTION

That Indian products and services are able to meet the most demanding international standards of quality and price has been rising notwithstanding competition. In fact, the 12 percent growth target set by the Government in the last two years has proved too modest. In fiscal 2002-03, exports grew by 20 per cent while last year the growth was 17 per cent, despite a continuous appreciation of the rupee against the U.S.dollar.

Handicraft exports of our country between April 2003 and February 2004 was Rs.8,832.11 crore.

SURVEY FORESEES HIGHER GROWTH IN CORE SECTORS

A survey of core sector industries undertaken by the Federation of Indian Chambers of Commerce and Industry (FICCI) foresees a higher growth for these vital sectors in the first two quarters of 2004-05.

It also pinpoints the basic issues and problems being faced by individual sectors. These have been compiled on the basis of the feedback received during interaction with a number of companies and industry associations.

It confirms that the core sectors can attain projected growth rates and can even reach higher growth figures beyond projection provided some of the basic problems pertaining to each sector are resolved.

Though the task of calculating the impact of the current issues pertaining to the individual sectors on their total individual production and the respective gain in terms

of addition to capacity is difficult in view so many criteria involved, the survey underlines the need for redress of some basic common issues and some sectoral issues affecting the current pace of growth.

Some of the issues relate to inverted duty structure, anomalous import tariff, rising prices of basic raw materials with inadequate availability. The survey focuses on slow pace of implementation or non-implementation of sectoral packages for a number of items and the need for improving the financial health of the State Electricity Boards besides measures aimed at increased investment, higher allocation and improving infrastructural facilities.

The survey highlights the need for pro-active government action to help industry achieve lower cost, improved quality and better performance in the competitive environment. It also lists the specific issues of concern to the individual sectors.

‘INDIA BECOMING GLOBAL PLAYER IN HEALTHCARE’

India’s success in healthcare has just begun and the day is not far off when it will go to the rescue of the West, the chairman of the Apollo Hospitals Group, Pratap C.Reddy, said.

He was delivering an address through a ‘tele-medicine’ facility from Chennai, at an annual symposium on ‘accident and emergency’, organized by the Apollo Speciality Hospitals. Other nations had started realizing the potential of India as a healthcare expert. However, a little augmentation was required in the country to build more facilities before acquiring the full-scale global status.

WHY AGARBATHI INDUSTRY GETS INCENSED

Maheswara Reddy

Agarbathis. This is one industry of which the erstwhile Maharaja of Mysore was a great patron. Little wonder, Karnataka's name and fame fanned across the seven seas through the fragrance of the incense sticks.

Agarbathi industry provides employment to lakhs of people across the country. It is a great help for small farmers to generate additional income during the lean period. Women rolling agarbathi sticks to eke out their livelihood is a common feature in most of metropolitan slums.

Simple efforts and minimum investment requirements to start an agarbathi unit have



attracted lakhs of people to venture into this industry. Though 600 manufacturers of agarbathis have registered with All India Agarbathi Manufactures Association, thousands of agarbathi manufactures are form the unorganized sector. A few years ago even some of big companies like Hindustan Lever Ltd, Reckit & Colman, Nirma, etc. marketed agarbathis on different brands in attractive packs and utilized their distribution network but in vain.

With Gaya and its surrounding districts where 20,000 tonne of unperfumed agarbathis were made per year, Karnataka has lost its share in agarbathi manufacturing volume-wise but has remained as the source of premium agarbathis.

Agarbathi industry has Rs.1,000 crore potential in the country with Rs.200 crore worth of agarbathis being exported”,

INDIAN FIRMS' REVENUE UP 29 P.C.

While India-based IT service vendors represented a small segment of the worldwide market, with 1.4 per cent of total revenues, collectively their revenues increased 29 per cent in 2003 compared with only 4 per cent growth among U.S. based vendors, according to preliminary results released by Gartner Inc. Further, the report says that India-based vendors depended almost entirely on exports with 92 per cent of their revenues coming from customers outside India and only 8 per cent within India.

The average IT spending by a large enterprise in India during 2003-04 stood at Rs.12 crore.

NICHOLAS UNCORKS THE POWER OF 'SINGLE HERBS'

Thanuja BM

The Rs.3,000 crore Indian herbal drug market has recently seen the entry of another big pharma players Nicholas Piramal India Ltd (NPIL). But unlike the usual "recipe polyherbals" sold in the market, the company says it would be focusing on "single herbs."

"We plan to sell herbal drugs which have an ayurvedic origin-these will usually be single herbs, biostandardised and fingerprinted rather than the recipepolyherbals sold in the market. We would also look at exporting these drugs," says Swati Piramal, director (strategic alliance and communication), NPIL.

The company is currently working on various ayurvedic formulations like bulk producing laxative with peristalsis stimulant action, custom designed cough syrups, anti-rheumatics (oral and topical dosage forms), hepato-tropics, herbo-mineral antacid suspension and capsules, hypoglycemic oral formula, anti-obesity, stretch care formula for women and anti wrinkle formula for skin.

NPIL is also developing a botanical active based Nutra and cosmoceutical range for management of hypercholesterolemia, menopausal osteoporosis, PMS, diabetes and BPH.



India exported engineering goods worth \$10 billion in 2002-03.



MEDICAL TRANSCRIPTION INDUSTRY STAGING A COMEBACK

P.Vikram Reddy

Just when everyone thought medical transcription was down and out, it is staging a recovery and is all set to grow exponentially in India. C bay Systems, incorporated in the U.S as early as 1998, in the thick of the last round of IT euphoria, has emerged as the fourth largest medical transcription company in the U.S and has started implementing its gigantic expansion plans based on its model of 95 percent outsourcing from India. And it seems quite unfazed by the ongoing BPO controversy in the U.S.

With 33 franchisers and five of its own centres in India, C bay now employees about 1,200 people (which it has trained) and recorded revenues of \$33 million and a 70 per cent growth rate. Its expansion plans are a mind-boggling 10,000 people working to generate revenues of about \$100 million by 2005.

(The Hindu)

VOTING SPECIAL

Consider these facts: 670 million registered voters. Around 7,25,000 electronic voters machines (EVMs). Over 4,000 candidates and 700 parties competing for 543 parliament seats and places in four state assemblies. And three weeks of voting.

Mind-boggling? “The world’s largest democracy doesn’t do anything small.” The general election makes India, already the world’s largest democracy, also the world’s largest user of computerized voting machines. Other countries, including Brazil the United States and the Netherlands, also use electronic voting machines, but in smaller numbers.

EVMs manufactured in 1989-90 were first experimented with in 16 Assembly

Constituencies in the States of Madhya Pradesh, Rajasthan and NCT of Delhi at the General Elections to the respective Legislative Assemblies in November 1998.

And the EVMs seem to have come of age, unlike in some other more developed nations. Last month, *Associated Press* reported how frozen screens and malfunctioning computers plagued some Super Tuesday voters who tried to cast electronic ballots. In California’s San Diego Country, touch screens failed to respond, causing delays of up to two hours and forcing some voters to other polling stations—where they cast their ballots the old-fashioned way—on paper.

Now that’s something India will save. One estimate says over 8,000 tonnes of paper, made from approximately 16 million trees were used to print ballots for past general elections. **(The New Indian Express)**



GOING BANANAS

And while you wait in the queue to cast your vote, snack away at a banana or a mango. You’ll be in world-class company. India has become the world’s largest producer of mangoes and bananas, having produced 12 million tones of mangoes in 2002-03, as against the world’s total production of 23.5 million tones. This is according to S.Dave, director of Agricultural and Processed Food Products Export Development Authority.

Making a presentation to leading British importers at the India House, Dave said the country also topped in the production of bananas with 10.2 million tones, compared to the world production of 58.6 million tones. India ranks 13th in production of grapes and the country is implementing measures to ensure that pesticide residual limits in grapes meet prescribed standards, following an alert issued by the European Community last year.

Only Brazil produces more fruits than India. And in vegetables, India grows more cauliflower than any other country. Some Indian fruit with your aloo-gobi, sir?

(The New Indian Express)



WHY INDIAN SCIENCE SCORES

Shashi Tharoor

Working, as I have been for the last couple of years, on a short biography of Jawaharlal Nehru, I became conscious of the extent to which we have taken for granted one vital legacy of his: the creation of an infrastructure for excellence in science and technology, which has become a source of great self-confidence and competitive advantage for the country today. Nehru was always fascinated by science and scientists. He made it a point to attend the annual Indian Science Congress every year, and he gave free rein (and taxpayers' money) to scientists in whom he had confidence to build high-quality institutions. Men like Homi Bhabha and Vikram Sarabhai constructed the platform for Indian accomplishments in the fields and atomic energy and space research; they and their successors have given the country a scientific establishment without peer in the developing world. Jawaharlal's establishment of the Indian Institutes of Technology (and the spur they provided to other lesser institutions) have produced many of the finest minds in America's Silicon Valley. Today, an IIT degree is held in the same reverence in the U.S as one from MIT or Caltech, and India's extraordinary leadership in the software industry is the direct result of Jawaharlal Nehru's faith in scientific education. Nehru left India with the world's second-largest pool of trained scientists and engineers, integrated into the global intellectual system, to a degree without parallel outside the developed West.

And yet the roots of Indian science and technology go far deeper than Nehru. I was reminded of this yet again by a remarkable new book, **Lost Discoveries**, by the American writer Dick Teresi. Teresi's book studies the ancient non-Western foundations of modern science, and while he ranges from the Babylonians and Mayans to Egyptians and other Africans, it is his references to India that caught my eye. And how astonishing those are! The Rig Veda asserted that gravitation held the universe together 24 centuries before the apple fell on Newton's head. The Vedic civilization subscribed to the idea of a spherical earth at a time when everyone else, even the Greeks, assumed the earth was flat. By the Fifth Century A.D. Indians had calculated that the age of the earth was 4.3 billion years; as the 19th Century, English scientists believed the earth was a hundred million years old, and it is only in the late 20th Century that Western scientists have come to estimate the earth to be about 4.6 billion years old.

If I were to focus on just one field in this column, it would be that of mathematics. India invented modern numerals (known to the world as "Arabic" numerals because the West got them from the Arabs, who learned them from us!). It was an Indian who first conceived of the Zero, *Shunya*; the concept of nothingness, *Shunyata*, integral to Hindu and Buddhist thinking, simply did not exist in the West. ("In the history of culture," wrote Tobias Dantzig in 1930, "the invention of zero will always stand out as one of the greatest single achievements of the human

race.”) The concept of infinite sets of rational numbers, was understood by Jain thinkers in the Sixth Century B.C. Our forefathers can take credit for geometry, trigonometry, and calculus; the “Bakshali manuscript”, 70 leaves of bark dating back to the early centuries of the Christian era, reveals fractions, simultaneous equations, quadratic equations, geometric progressions and even calculations of profit and loss, with interest.

Indian mathematicians invented negative numbers: the British mathematician Lancelot Hogben, grudgingly acknowledging this, suggested ungraciously that “perhaps because the Hindus were indebt more often than not, it occurred to them that it would also be useful to have a number which represent the amount of money one owes”. (That theory would no doubt also explain why Indians were the first to understand how to add, multiply and subtract from zero—because zero was all, in Western eyes, we ever had.)

The Sulba Sustras, composed between 800 and 500 B.C., demonstrate that India and Pythagoras’ theorem before the great Greek was born, and a way of getting the square root of 2 correct to five decimal places. (Vedic Indians solved square roots in order to build sacrificial altars of the proper size.) The Kerala mathematician Nilakantha wrote sophisticated explanations of the irrationality of “pi” before the West had heard of the concept. The Vedanga Jyotisha, written around 500 B.C., declares: “Like the crest of a peacock, like the gem on the head of a snake, so is mathematics at the head of all knowledge.” Our mathematicians were poets too! But one could go back even earlier, to the Harappan civilization, for evidence of a

highly sophisticated system of weights and measures in use around 3000 B.C.

Archaeologists also found a “ruler” made with lines drawn precisely 6.7 millimeters apart with an astonishing level of accuracy. The “Indus inch” was a measure in consistent use throughout the area. The Harappans also invented kiln-fired bricks, less permeable to rain and floodwater than the mud bricks used by other civilizations of the time. The bricks contained no straw or other binding material and so turned out to be usable 5,000 years later when a British contractor dug them up to construct a railway line between Multan and Lahore. And while they were made in 15 different sizes, the Harappan bricks were amazingly consistent: their length, width and thickness were invariably in the ratio of 4:2:1.

“Indian mathematical innovations,” writes Teresi, “had a profound effect on neighbouring cultures.” The greatest impact was on Islamic culture, which borrowed heavily from Indian numerals, trigonometry and analemma. Indian numbers probably arrived in the Arab world in 773 A.D. with the diplomatic mission sent by the Hindu ruler of Sind to the court of the Caliph al-Mansur. This gave rise to the famous arithmetical text of al-Khwarizmi, written around 820 A.D, which contains a detailed exposition of Indian mathematics, in particular the usefulness of the zero. With Islamic civilisation’s rise and spread, knowledge of Indian mathematics reached as far an field as Central Asia, North Africa and Spain. “In serving as a conduit for incoming ideas and a catalyst for influencing others,” Teresi adds, “India played a pivotal role.” Research is a rich lode. **(The Hindu)**



‘A MAGNET OF SERVICES’

India, one of the fastest growing economies in the world, has become ‘a magnet of services,’ according to the 2004 World Competitiveness Yearbook released by the Swiss business school, IMD, today (4.5.04).

India is placed at 34 in the annual rankings of national business and economic efficiency with the 2004 report putting it among the fastest rising areas along with China’s Zhejiang region, ranked 19th. India has become a ‘magnet of services’ by not only by attracting outsourced administrative services, but also by developing the competitiveness of its software, entertainment and financial services, IMD said.

It estimated that two million jobs in financial services would be relocated to India from industrialized countries within the next four years.

India has shot up the rankings by 19 places by tapping into offshore investment from traditional western economic pillars seeking lower costs.

That competitiveness is partly fuelled by western money, with Asia attracting 60 percent of U.S. private sector investment in developing countries, the report indicated.

“For every dollar invested in the U.S., \$4 are invested by American enterprises abroad.” Said the report’s editor, IMD economist, Stephanie Garelli. —AFP.

G-8 CONSIDERING INVITING INDIA, CHINA

Leaders from the Group of Eight industrialized nations are considering inviting China and India into their elite club, Italian Prime Minister, Silvio Berlusconi, said on 10-6-04.

“It doesn’t make much sense for us to talk about the economy of the future without two countries that are protagonists on the world stage,” Mr. Berlusconi told reporters after a first morning of talks at the annual G-8 summit of world powers.



The G-8 comprises the United States, Japan, Germany, France, Britain, Italy, Canada and Russia.

Mr. Berlusconi said the leaders discussed the strength of the Chinese economy and the fact that it was not constrained by the sort of labour laws that exist in the West.

“But we said that we shouldn’t be afraid of China because it is a huge consumer market and the ideas was put forward to call China and India to join the G-8, making it the G-9 or G-10,” Mr. Berlusconi said.

He did not say if any decision had been taken.—Reuters.

India is set to attract about \$1 billion fresh foreign investment this year.

‘INDIA THE FIRST COUNTRY TO CONSIDER WHEN SENDING WORK ABROAD’

Pragya Singh

Debates on the backlash against outsourcing are hotter than ever, but a new book what’s this India Business argues that India is an asset to the global economy, an ideal offshore destination and a completely livable business environment. Its author, *Paul Davies, ex-managing director of Unisys*, explains his perspective on outsourcing and India in an interview.

Q. What’s this India Business gives the impression you are absolutely sold on the idea of off shoring, and India. Do many in the west agree with you?

A. I am convinced the value proposition of off shoring is so significant that every Western company has to make a decision about it. It may be perfectly right for some enterprises not to go offshore-but it has to be a decision taken in the light of all the information. India, for almost all areas of ITES and BPO, is the right place – and certainly the first country to consider.

Q. Did you have a particular target audience in mind when writing?

A. My initial target audience was western business people who had either never been to India, or who hadn’t come to grips with the ways of doing business here. It was aimed at the Chief Executive, Chief Financial, Chief Operating the Chief Information Officers-the so-called CXO market-but it was broadened so that project directors and managers,

strategic development managers, and even Human Resources or Procurement, could find real advantage from it.

My second audience was Indian business people. By exploring how Indian companies present themselves and showing western responses, I was addressing an important area for the success of India Inc.

Q. A section is dedicated to Indian culture and people. How important are these aspects for business today?

A. In most business discussions with western companies and CXOs, these aspects of India are rarely mentioned. Yet when I broach the subject of the charm and allure of India, there’s always a real enthusiasm for going to India to understand more. Americans are more circumspect as a group. But even there, ‘there is an understanding of the intellectual heritage of India and an appreciation that India has more to offer because it is not a clone of western business.

Q. You argue that off shoring could free productive workforce to do what couldn’t be done before. Are firms following this model today?

A. A subsidiary of Unisys is looking at this-but much of this is commercially sensitive. This is a complex subject-and has opportunities both in India and the west. The World Bank has already suggested areas where this applies.

‘PROMOTE INDIA AS I.T. RESEARCH HUB’

Industry should work to establish the country as a global hub of research and development in information technology, S.Ramakrishnan, executive director, Centre for Development of Advanced Computing, Ministry of Communications and Information Technology, said on Monday (17-05-04) at Coimbatore.



and globally competitive telecommunication infrastructure, he said.

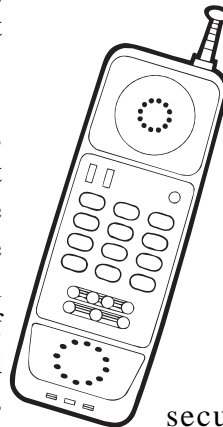
Indian companies had expanded their services and multinationals had invested in development centres.

“Much ahead of, and even more than our cricket team, Indian IT became a brand ambassador for the nation, wherever one traveled.”

Skilled workers, engineers and other professionals had been going abroad for over three decades, but a ‘reverse migration’ began now.

Indian business, industry, academia and the Government have joined hands to use telecommunications and the Internet to break into the global market. The Department of Electronics had established software technology parks as “one-stop shops” to offer efficient service

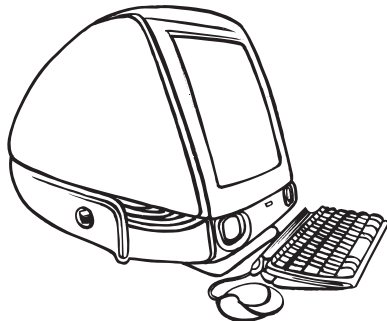
To find the best way of succeeding in research and development, a global research agency compared India with Israel, Taiwan, China and Ireland. It found that there was ‘tremendous promise’ for India in information technology, telecommunications and electronics.



Some of the specific areas the study identified were computer graphics, multimedia, encryption, network security, software engineering, mobile communication services, wireless sensors, semiconductors and photonics technology.

By 2010, the opportunities for the outsourcing markets in research and technology were \$9.1 billion for information technology, \$4.1 billion for telecom and \$2.7 billion for electronics.

This would create a large number of jobs.



India produced 1,200,000 tonne of grapes during 2002-03 while global production was 57,397,000 tonne.

MALDA MANGOES FOR LONDON

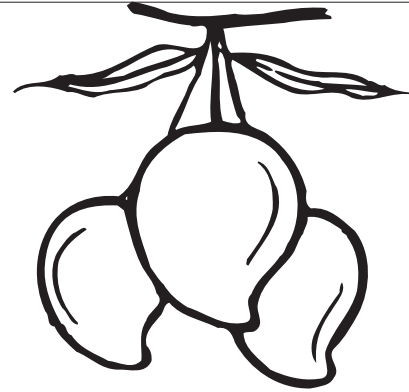
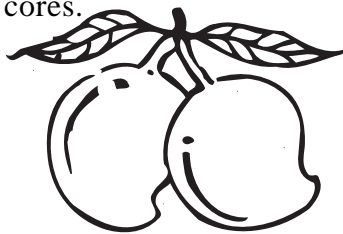
Marcus Dam

For the first time ever, a West Bengal Government agency—the Food Processing and Horticulture Development Corporation—is exporting mangoes to London. The first consignment of the delectable “Himsagar” variety of the fruit grown in Malda district left Kolkata this morning (11.06.04).

‘Gerberas,’ which resemble daisies with multiple hues, and tuberoses are also being exported to new York where there is huge demand for the flowers, entrepreneurs from London were impressed with the Himsagar mangoes they tasted and recently finalized a deal for weekly export of the fruit to the United Kingdom.

In the United States, there is a growing demand for the ‘gerbera’, which is issued for interior decoration. The flowers which grow in the hills of Kalimpong in north Bengal are also now being cultivated in poly-houses at a temperature of about 26° Celsius in the North 24 Parganas and Hooghly districts.

Mr.Hazra said. To boost mango exports, a multi-purpose pack-house cooling chamber unit has been set up in Malda district at a cost of Rs.1.74 cores.



INDIAN PHARMA COMPANIES ON A TAKE OVER SPREE

Ramnath Subba

Indian pharmaceutical companies have been moving aggressively to acquire companies over seas in the recent past. That should not come as a surprise because over the last few years, they have not only gained critical mass in terms of balance sheet size and streamlined operations, but also have access to cheaper funds.

All available indicators show that global generics market is growing. It is very competitive there and provides funds for R&D. drugs prices outside India are far more remunerative than here and that generates investible surplus,” said D.G.Shah, secretary general, Indian Pharmaceutical Alliance (IPA). “This is no doubt an entry strategy and move to accelerate growth,” he added.

4,40,177 tonne of raw cashew nuts was imported by our country between April 2003 and February 2004.

INDIA ROARS

They say it is boom time in India now. And rightly so, for the country is poised on the brink of becoming a roaring tiger, much like the South East Asian nations of the 70 and 80s. So strong is the bullishness of India that not a day passes without a mention of India in the foreign press. And lately, the country's IT prowess has also come under watch with 'outsourcing' campaigns becoming the order of the day.



That has not stopped economic pundits from the country as well as those from abroad make grandiose projections about the economy, GDP etc. Securities and brokerage firm Geojit Securities has said in its latest Economic Outlook that Indian economy is expected to grow at a blazing 8.2 percent this fiscal. "India is Asia's fastest growing economy with GDP etc. Securities and brokerage firm Geojit Securities has said in its latest Economic Outlook that Indian economy is expected to grow at a blazing 8.2 percent this fiscal. "India is Asia's fastest growing economy with GDP registering a 10.4 percent year-on-year growth in Q3 of FY04 compared to 22 percent in Q3FY03. This is more than China's 9.9 percent and Argentina's 9.8 percent for Q3," the report says.

It goes on to add that since the economic reforms in 1991, the country has maintained

an average GDP growth rate of over 6 percent. The current account deficit has turned into a surplus over the last four years, achieved through non-debt creating flows. Among emerging markets, India's ratio of foreign exchange reserves to GDP stands at 14.5 percent as against a high of 94.3 percent for Singapore and low of 7.9 percent for Mexico. "This is in the backdrop of the country's forex reserves having crossed \$110 billion." It said.

The report also says that although the tax-GDP ratio continues at low levels, the high fiscal deficit has not been binding on the private sector due to the growing saving-investment surplus. In FY02 and FY03 private sector surplus has spilled over to the external sector and has financed public sector deficit. The robust secondary market and strong macro economic fundamentals have

Rs.2,200 crore is the size of the bread industry in our country.

added to the strong business confidence and capital flows are expected to continue.

India is a production base and an export hub for goods ranging from agricultural products to automobile components to high-end services. Not only that Indian firms are new part of global production chains and the country is increasingly getting integrated with the world economy.

The robust performance of the manufacturing sector has kept industrial growth buoyant. The Index of Industrial Production (IIP) growth rate for April '03-Jan '04 is up at 6.5 percent. The cumulative growth for the industry as a whole during this period was 6.5 percent. The manufacturing sector grew by 7.1 percent, mining by 4.5 percent and electricity by 3.7 percent. Capital goods production (which are indicators of investment levels) for this period grew to 10.3 percent over the corresponding period last year.

The growth has largely been fuelled by agriculture which has expanded by 16.9 percent during the same quarter of the preceding fiscal. The good news is that economic growth is reasonably broad-based and not just confined to the farm sector.

TOP 10 TRADED COMMODITIES

(Financial Year '04)

<u>Rank</u>	<u>Commodity</u>	<u>Turnover Qty (MT)</u>	<u>Gross Value (\$mn)</u>
1	Soy Oil	10,30,038	1071
2	Sunflower Seed	6,34,672	299
3	Cotton Oil	6,08,954	633
4	Safflower Seed	5,89,534	266
5	Cotton Seed	5,85,260	154
6	Sunflower Oil	5,78,592	813
7	Sunflower Oil	5,58,228	839
8	Lead	5,34,282	128
9	Crude Palm Oil	4,94,962	401
10	Sunflower Cake	4,58,950	55

Back office processing segment industry in India is expected to be worth \$6,102 million by 2006.

THE GLOBAL INDIAN TAKEOVER

Swaminathan S.Ankelsaria Aiyar

Ladies and gentlemen, please take your seats. You are about to witness one of the greatest shows on earth: the gradual Indian takeover of global companies. As the process unfolds, every worthwhile Indian company will become a multinational corporation (MNC) that not only starts business abroad but also swallows up existing foreign multinationals.

When Indian began globalizing in 1991, the Indian left howled that this would mean the wholesale takeover of Indian companies by foreign multinational companies (MNCs). When liberalizers like me suggested that globalization would equally mean the take over of foreign companies by Indian multinationals, we were viewed with amusement as some sort of creatures from outer space. So entrenched was the notion of Indian inferiority and foreign superiority that the very thought of Indian companies taking over global ones was regarded as science fiction.

Today, it has become a reality. The trend began haltingly a few years ago. In 2000, Tata Tea took over a global company, twice its size, Tetley Tea, the second biggest tea company in the world. This was a leveraged buyout. That is the financiers provided the funds to enable an Indian minnow to take over a global whale. Far from being a force of neocolonialism, global finance is now helping smaller Indian companies to acquire much larger global ones.

Next, Essel Packaging, owned by Subhash Chandra, took over Propack of Switzerland

to form Essel Propack. The merger created the biggest producer in the world of laminated tubes, and an Indian MNC became a global number one.

But these takeovers remained exceptional events till 2003. Only in that year did the pace of Indian takeovers accelerate so much as to constitute a new trend, one that the world must sit up and take notice of. According to one source, more than 40 foreign companies were taken over by Indians last year (2003). Just consider main examples:

- Tata Motors is all set to acquire the truck factories of Daewoo in South Korea for a reported for 118 million dollars.
- The Ambanis have a bid for, and look very likely to takeover Flag International, a major international telecom network, for perhaps 211 million dollars.
- Ranbaxy, our biggest pharmaceutical company, has just acquired RGP Aventis, the French generic wing of the multinational Aventis. Here again, an Indian minnow has acquired a part of a global whale.
- Wockhardt, owned by the Khokariwalas, acquired CP Pharmaceuticals of UK. The Khokariwalas had already made minor acquisition, of Wallis Laboratories, in 1998.

- Hindalco, the flagship company of Kumar Birla group, acquired two Copper mines in Australia – Mount Gordon and Nifty.
- Sterlite, the successful bidder for the privatization of Bharat Aluminium and Hindusthan Zinc, has become a true multinational by acquiring copper mines in Australia. It has also been short-listed as the preferred bidder for buying a 51 percent stake in Konkola Copper Mines, the biggest government owned mine in Zambia.
- Readers might think that only the biggest Indian companies get into global takeover game. This is simply not so. Many middle sized companies, which readers may not even have heard of, are becoming multinationals through foreign acquisitions.
- Sundaram Fasteners, whose production line includes humble items like radiator caps, nuts and bolts, has acquired Dana Spicer Europe, the British arm of a global multinational. Separately, Sundaram Fasteners is setting up a plant in China to take on the mighty Chinese.
- Amtek Auto, another auto ancillary that came up in the 1990s, has just acquired the GWK group in the UK, which is twice its size. Indian auto ancillary companies are sweeping world export markets and in the process acquiring MNC rivals that cannot complete.
- After 30 years of supplying components to UK-based SPP Pumps, Kirloskar Brothers have now acquired a majority stake in the British Company. Truly, this is a case of the Empire striking back.

I do not wish to bore the readers by making this column into a long, seemingly, endless list. Yet, the lengthy and seemingly endless nature of our global takeovers cry out for our attention.

In this column, I have listed only Indian takeovers of foreign companies, not yet the many few factories the Indians are putting up overseas. Again, I have left out of my list a large number of softwares and BPO companies that are being acquired by top Indian companies. I have concentrated on manufacturing, where Indians are supposed to be least competitive.

The left is correct in saying that globalization implies in takeover of Indian companies by MNCs, but wrong in implying that takeovers are a one-way street. The global system is no longer rigged by and for white men. It can be used by Indians no less by Americans to leverage their talent to create global corporate empires. The process has begun.

(The Times of India)



Indian banks have shed 1,25,000 workers or 12.5 percent of their workforce through voluntary retirement schemes during the last few years.

IT'S A HERBAL WORLD

A 'Green Revolution' is taking place in the fast moving consumer goods sector. A 'herbal' tag attached to a product is enough to make it sell, says Madhavi Ravikumar.

Grandma didn't go to beauty parlours, skin specialists, or cosmetologists. Yet grandma's skin glowed, her hair was lush and dark. What was grandma's magic? Simple, reply on natural home remedies for a variety of cosmetic and medical needs. Yes, *Brahmi, amla, reetha, henna, haldi, chandan, neem, gulab, cucumber, mint, tulsi, coconut, lime...* the same herbs that are making a comeback today in sachets, tubes and bottles. The convenience of a shampoo bottle or a skin cream tube compared to the time consuming and cumbersome procedure for using these products in the good old days are making them popular once again.

When growth rates for cosmetic products showed down, marketers had to think of something new. Herbal products were always available in India, but they became a marketing man's dream products only recently. Today, there is a growing awareness of the benefits of using natural products. Whether they are cosmetics, medicines or health drinks, the *mantra* today is to keep away from chemicals.

"The future for the herbal industry will be in catering to the personal and healthcare needs of consumers across the world. And it looks bright and promising," says Ravi Prasad, managing director of the Bangalore-based Himalaya Drug Company.

Taking a cue from the changing customer preferences, companies have started digging deep into the herbal pot of gold and flooding the market with over-the-counter products.

The global markets for herbal products, including medicines, health supplements herbal beauty and toiletry products, is estimated at a mind blowing US \$ 62 billion.

The market for herbal medicine alone is estimated at US \$5 billion and is expected to grow to U S \$ 16 billion next year. In Europe, the market for licensed herbal medicines is approximately US \$ 475 million. In India, over the past couple of years, there has been a clear herbal wave, particularly in the personal care segment. The Rs.300-crore market is perceived to be the hottest and the fastest growing.

The Indian cosmetics industry, including toiletries, is estimated at Rs.3,000-crore. With growing competition even traditional *ayurvedic* companies like Dabur, Himalaya Drugs, Charak, Zandu, Sri Dhootapapeshwar and Baidyanath are sprucing their products up to face the onslaught. From expanding their range, upgrading manufacturing facilities, investing in R&D activity, strengthening distribution and marketing the players are all exploring ways to reach out to the consumer.

According to industry sources, "A herbal tag is one of the easiest ways to increase products acceptance and popularity."

Increasing acceptance of Indian-made herbal products in the international market, greater

health awareness, changing trends of self-grooming and lifestyles and even the mythological serials on television are cited as some of the factors for the boom in the herbal-products industry.

Toilet soap is one segment witnessing an intense competition between established brands like Medimix, Margo, Vrinda, Santoor, Chandrika and the repositioned Hamam and Rexona on the natural/herbal platform. Godrej Nikhar is also eyeing a slice of the market.

In toothpaste, Colgate Herbal recently joined Vicco Vajradanti, Babool, Promise, Meswak, and Neem. The growth in the entire market is going to come from this segment, industry sources say.

Foaming the herbal lather further are shampoos like Nyle, Ayur, Dabur Vatika, Herby, Meera. Godrej has also launched its latest shampoo with herbal extracts targeted only at a niche market.

In the cosmetics market, the herbal cosmetics segment is witnessing a growth rate of 60 percent and more as against the 20-25 percent growth of the total industry.

The World Health Organization has listed over 21,000 plant species used around the world for medicinal purposes. It has been estimated that India has 47,000 species of plants.

(The New Indian Express)



‘NEW-FOUND CONFIDENCE AMONG INDIAN COMPANIES’

The new-found confidence of Indian companies in meeting the challenges of globalization and the rising demand for consumer credit augur well for the banking sector, according to K.V.Kamath, Managing Director and Chief Executive Officer of ICICI Bank Limited.

He said that along with the steady growth in consumer credit disbursement, which included housing loans, there was a big revival in credit off take by corporates.

“What we see now is a completely different story compared to a couple of years ago,” he said, pointing out that Indian companies were investing on building new capacities and improving productivity and quality. Apart from deploying “organic capital” (internal accruals) more and more companies were restructuring their debt portfolio by retiring high cost loans.

A new-found confidence was visible among the corporates in the last quarter of 2003-2004..

R.Seshasayee, Managing Director, Ashok Leyland Limited, said that despite the growth achieved after liberalization, the economy had a long way ahead, particularly through the development of agriculture and improved industrial productivity.

(The Hindu)

75,000 tonne of natural rubber was exported by our country 2003-04.

THE BPO PANIC

N.Sakthivelan

The feverish election rhetoric in the US rages about BPO, (Business Process Outsourcing). A better term would be ITES (IT-enabled services). The panic is about job-drain tumbling out of the US to India in the ITES and to China, Taiwan, Thailand, Malaysia in manufacturing, making goods for American markets.

Earlier, the buzz was about China becoming a global manufacturing base for the global firms. Now it is about India becoming 'the service capital of the world'. It is even beginning to replace China as the 'most favoured economy' of the global business community with software being the flavour of the times. Our core strength is in the service sector-70% of the GDP in US!

Of the ten million computer-related jobs, two million have gone abroad. Twelve per cent of IT firms and three per cent of non-IT firms have outsourced their work (Washington Post). Hence the panic about an army of 160,000 cybercoolies, cyber-clerks, and even cyber-bullies, ranging from back-office work to bumpkins at the high end IT design, robbing the Americans of their jobs and tugging at global value-chains. And ITES business will grow four-fold in a couple of years (Gartner estimate). Already Bangalore, Hyderabad, Chennai and Gurgaon are shining on the IT map. This unpleasant dimension of globalization was not foreseen

by the advocates of globalization in the '80s in the bid to exploit developing nations. And globalization backlash has landed US in protectionism. Presidential contender J Kerry a fierce critic of outsourcing, with his new-found protectionism, would christen outsourcing firms as 'Benedict Arnolds' for their disloyalty.



What is wrong if, for instance, a software engineering job of \$80,000/- year in US can be done in Bangalore for \$20,000? The fierce profit logic of the US must choose Bangalore naturally. Their patriotism and nationalism can wait!

With the Indian BPO/ITES opportunity soaring (\$24-35 billion in 2008) there are already visions of a ministry of BPO!



Rs.1,40,000 crore is the asset size of the mutual fund industry in our country as on December 2003.

FOREIGN ACQUISITIONS

Growth of Indian MNCs is good news

The acquisition of Nat Steel, a Singapore-based steel company by TISCO is part of a new trend in India's globalization. This acquisition will give TISCO greater access to the South East Asian—including Chinese—steel markets. This is the third overseas acquisition by the Tata group. When the group bought Tetley, the world's second largest tea company, in 2000 it was for the first time an Indian brand name was seen prominently in households abroad. That deal for \$431 million represented the largest takeover of an international brand by an Indian company. The Tata group's next big takeover was the truck unit of Daewoo. Tata's competence in the domestic market lay in small trucks. The Daewoo unit's competence in the high-end of the commercial vehicle market, allowed Tata to enter a whole new area in truck production, as well as access to new markets.

In '01 and '02, foreign acquisitions by Indian companies were dominated by software firms. Most of these were small companies at prices around \$10 million. Pharma companies like Ranbaxy, Dr.Reddy's and Wockhardt followed in '03 and '04, making acquisitions of French, German and British pharmaceuticals. Others, such as the Aditya Birla group, Reliance Infocomm, ONGC Videsh and Jindal Stainless, have all

gone global. Globalization has thus acquired a new meaning in the Indian context and over the last four years there have been over 160 acquisitions of foreign companies by Indian firms. It is a kind of globalization that the Indian critics of the process may find quite acceptable!

The multinationalisation of Indian companies has become possible entirely as a result of the liberalization of the economy. The pressure on them to face up to global competition has been crucial in making them lean and competitive. They have been forced to cut costs and improve their technology



and management skills. The opening up of trade and industry has transformed them into players in the global market. Capital account convertibility has allowed them to purchase foreign firms. After all, acquisitions of foreign companies were not possible as long as Indian companies were not allowed to take money abroad. They could not, consequently, take advantage of

the scale and technology that such acquisitions offer. It is important that Indian companies are not shackled by the remaining controls on the capital account in the future. The ministry of finance and RBI should ensure that outdated rules do not hobble the increasing global competitiveness of Indian firms.

[An editorial in The New Indian Express]

Floriculture exports from our country currently stands at Rs.132 crore.

BPO MOVEMENT OUT, KNOWLEDGE PROCESS OFFSHORING IS COMING

N.Venugopal

Even as Indian BPO industry is upbeat on the expected growth opportunities, inherent difficulties like accent problems, low-tech employment and low-cost proposition, might turn the apple cart and the new hope seems to be Knowledge Process Offshoring (KPO), which is being rebranded from its current status as a segment under BPO. The US-based business research organization Evaluateserve projects the CAGR of KPO to be 46 per cent, as against 26 per cent for BPO by 2010.

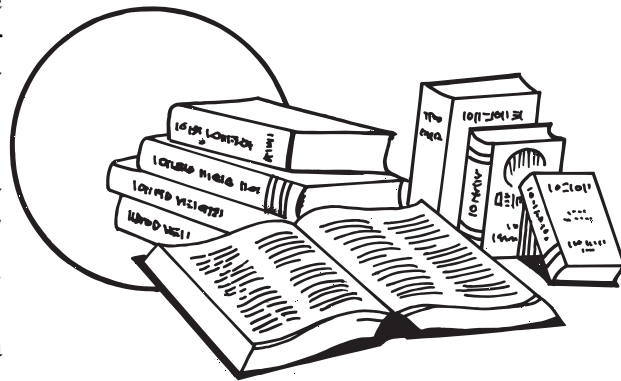
Indeed, there seems to be a lot of money in KPO-it is expected to grow to \$17 billion by 2010 from \$1.29 billion in 2003.

“Knowledge has no boundaries and India can become a knowledge delivery hub within the next 5 to 10 years. Global corporates are exploring every month what processes can be offshored. The areas that come under KPO are those that need hitech and domain expertise, as BPO is seen as call centre services only and highly commoditised. In fact, we are only scratching the surface of BPO and there are so many competitors,” said Arjun Rao, CEO of Value Labs, one of the pioneering KPO providers in the country.

KPO services consist of several critical, knowledge-driven segments including tech support, market research, clinical data management, and contract research. The

potential candidates would be MBAs, engineers, doctors, lawyers, accountants and other highly skilled professionals with advanced analytical and technical skills.

There is no denying that the fundamental driver is cost and the cost differential would be in the range of 40-60 per cent, says Arjun. “However, there are other countries which



may beat us on cost front. India has an edge in terms of competitive quality, most destinations, scalable models, besides reasonable price,” he adds.

Referring to the business opportunity, Arjun says, “contrary to popular belief, there are significant margins here. In the US a qualified high-skilled professional costs anywhere between \$200 and \$500 an hour. You can compare that with the cost of a professional here.”

Value Labs is currently engaged in high-end tech support for software engineering processes, market research for FMCG

India's trade with the world in 2003 stood at \$114.13 billion.

companies, customer support interms of categorizing and trend analysis and clinical data management.

Quoting Evalueserve's study, Arjus says, "writing patent applications in the US is expensive and typical application costs between \$10,000 and \$15,000 for drafting and filing with US Patent and Trademark Office. In KPO model, an IP specialist here

can produce a preliminary draft of a patent application, which is then reviewed and modified by a registered US patent attorney, who ultimately files it with the USPTO. This can result in huge cost savings."

Similarly, the cost differential between a Ph.D in sciences or engineering in the US and India is in the range of \$60,000-80,000. [T N I E]

VELLANKOIL FAST TURNING INTO A MURUKKU HUB

If Kancheepuram, Kumbakonam and Salem are renowned for silk sarees, betal leaves and mangoes respectively, Vellankoil village in Erode is fast turning itself into hub of murukku business.

"The spicy snack, made from rice and dhal flour, now helps over 100 families in the village, located 35 km from Erode, earn good money. The *murukku* business here is worth Rs.3 lakh every week. Further, the good marketing strategy in place ensures the product reach markets in neighbouring Coimbatore and Salem districts too. Vellankoil has today earned a reputation for its *murukku* and the product is today seen on par with the famous Manapparai *murukku*.

Some families today produce related eatables such as mixture and boondi and they are being sold in upcountry markets in Saudi Arabia and Sri Lanka also. However, so far, no major orders have been received," G.R.Ganesh, a *murukku* producer, said.

The activity has helped many women in the neighbouring villages also get a minimum of Rs.50 per day as wages. "The wages range between Rs.3.50 and Rs.10 for making various types of *murukkus* out of 1 kg of flour," Shanthi, a worker, said.

The price of *murukku* ranges between 25 paise and Re.1 Attractive packages and brand names have created permanent market for the products in many areas. "We are trying to popularize the product through a website," said another producer Maheshwari.

Usually, the entire village turns busy in the winter season, when the demand is high. "An investment of about Rs.5000 is enough to ensure a constant income to run a family. The profit could be in the 10 to 20 percent range," Munusamy, a trader, reveals.

Equally famous, if not more, are the Rasagollas of Bengal, Shaeve of Bikaner, Pethas of Agra, Pedas of Mathura and Halwa of Mumbai.

GREEN BUILDINGS MAKE CONSTRUCTION BIZ COMPETITIVE: JAMSHYD. N GODREJ

Green buildings should be an integral part of the competitive strategy of the Indian construction industry, according to Jamshyd. N Godrej, Chairman, CII-Godrej GBC.

In his presidential address at Green Building Congress 2004 in Hyderabad, he said Green Business Centre is a proof of what Indian industry can achieve to be competitive and energy-efficient.

CII-GBC will work in association with the Government of Andhra Pradesh in water and energy sectors and in developing building codes, he added.

The Chief minister Andhra Pradesh said the Government will promote the concept of green construction.

“Ecology has been tampered too much till now and it is time to concentrate on its

protection. The current paucity of rains is a consequence of insensitivity to ecology,” he said.

Stating that renewable energy is very important, the chief minister said the Government is taking all steps to promote biofuel generation.

Indian green Building Council Chairman R Parasu Raman, in his theme address, said of late there has been a transformation of the corporate perspective of construction. Green building activity can also ensure good business opportunity, he stressed.

On the occasion, Confederation of Indian Industry has signed a memorandum of understanding with the US Green Building Council for exchange of information and introduction of LEED India rating system for green buildings.

[TNIE]



Agriculture is the largest industry in the world employing 1.3 billion people and producing goods worth \$1.3 trillion.

INDIA ENJOYS ADVANTAGE OF YOUTH POWER: KASTURIRANGAN

In the comity of nations, India enjoys the advantage of a vast youth power. More than half of its population is under 25. In contrast, by 2030, about half of the adult population in Germany will be above 65 years and a similar situation is predicted in Japan, the United States of America, Europe and China, K.Kasturirangan, former Chairman of the Indian Space Research Organisation, has said.

Mr.Kasturirangan said that if the Indian youth were equipped with quality education, they could play a major role in all knowledge-based activities.

The global trend was towards knowledge societies—where the flow of knowledge, compared to money, across borders would be relatively easy. India had seen tremendous developments in different spheres of activity, and for its accomplishments in the field of



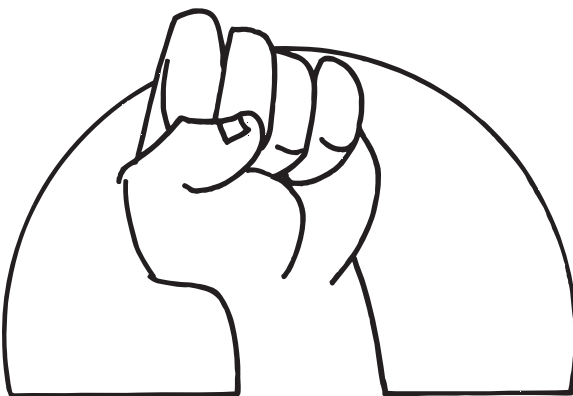
space, the world community had recognized it as a significant space-faring nation.

However, in facilitating quality of life to every citizen, it had still a significant unfinished agenda. Achieving socio-economic progress to the level of the developed nations should therefore, be the priority of the country.

It was heartening that when the bigger economies had slowed down, India was slated to sustain its economic growth at an average rate of 5 per cent for the next five decades. This implied that India would overtake the Japan's GDP (gross domestic product) by 2032, said Mr.Kasturirangan.

The space scientist said other countries were looking at India as a potential marketplace and outsourcing destination.

[The Hindu]



Private healthcare will be the largest component spending by Indians in 2012 rising to Rs.1,56,000 crore from Rs.69,000 crore presently.

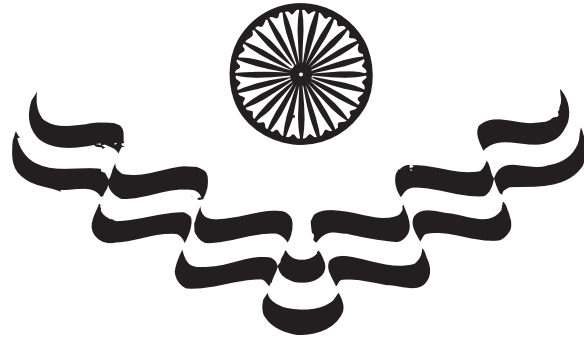
BRAND INDIA

N.R.Rajagopal

The inauguration sometime back of the biotech department at IIT, Kanpur and the announcement there that five more IITs were in the offing—both by the Prime Minister—should be greeted with the usual hurrah of development analysts of the country. Coupled with the impressive array of statistics provided by the Communications Minister, on what and how have the Indian Industries done us proud in the highly competitive and technology-driven global markets, the PM's statements may indeed lead one to savour the feel-good factor. Yet from here to a dormant state of complacency is but a short step, and one that needs to be avoided for a variety of reasons.

Outsourcing

The hue and cry in the U.S. on outsourcing of IT jobs to India (and China in that order) is at a feverish pitch. Knives are out in the Senate and before long something may happen to upset the concerned in both the countries. IT firms are resorting to cost-cutting measures by outsourcing jobs and pushing on for technological alternatives that might further bring down dependence on human (Indian or Chinese) endeavour. Already there are attempts to tag consumers by labeling goods sold them and monitoring their movement by RF signals. New ground is about to be broken in the communications sector when cell phone business transactions will be on the rise. Till recently thought as a passing fad, WI-Fi (Wireless Fidelity) technology is up and about.



Wi-Fi. refers to an over-the-air connection with a wireless client and a base station or between wireless clients. It can provide high speed internet access for a limited distance, as of now. Distance will not matter in the next 4-5 years because there is a concerted effort to get over it by Intel, Cisco, Microsoft, AT&T and IBM. Experts believe Wi-Fi nodes will soon become as widespread as cellular telephone coverage.

“My visits to India convinced me that their research labs were filled with scientists equal to or better than those in the United States—and in a lot more disciplines than software,” says Jack Welch, the then CEO of General Electric, in his book *Straight from the Gut*. No wonder we now have in Bangalore the Welch technology Centre. Outside the U.S. this is GE's largest R&D set-up with over 1600 researchers. Automobile giants Suzuki and Hyundai, firmly established in India now, are creating or working with major research centres. India's Communication's Minister, reports that over 70 MNCs, including Delphi, Eli Lilly, GE and Hewlett Packard have set up R&D facilities in India in the past five years. So far so good, but all of them will be generating technologies which will be commercialized up there (and then here partly or fully depending on the climate here) and we will obtain goods and services with brands definitely not Indian. So how

about going over the entire technology spectrum here, doing things ourselves by preparing for the future particularly in Welch's more disciplines than software.'

Consider for instance the biotech set-up in the University of California, which ranks fourth in government research funding. Describing the phenomenal growth of the department, Cliff Edwards points out (Business Week, Sept. 8) 2003 how the expansion will 'combine physical science and biology with intense computational research to study some of the most complex biological processes. The focus will be on new drug development and newer methods of prevention and management of diseases. The process began when gene pioneer Bill Rutter took over the bio-chemistry department in 1969 and created an atmosphere of meaningful collaborative research. As opposed to the traditional practice of placing them in departments based on specialization, researchers sharing common interests were grouped. Thus, chemists were enabled to work with mathematicians and biologists. This led to a surge of activities and new discoveries ending up with two Nobel awards and formation of biotech companies in the Bay area.

On the other side, dealing with emerging technologies, *Technology Review* (MIT, Sept.3) describes developments taking place in the fields of location-based information, future directions in the field of location-aware computing,

notwithstanding the problem of intrusion of privacy. Molecules, not silicon, may be the workhorse tomorrow's ultra fast, ultra powerful computers, HP, IBM, MIT, Harvard, Rice and a few more university groups are working on DNA computing molecular electronic devices, nanocells, nanotube electronic components, quantum computing, as alternatives to silicon. Yet there is even now the human angle when advanced technology comes into play in the area of air safety. The post 9/11 scenario in security screening in U.S. airports is under constant scrutiny Passengers are subjected to electronic and personal screening before being cleared. Footwear is also screened separately. The U.S. Transportation Security Administration wants to increase the use of technology to improve airline security. It will not really help, says Issack Yeffet, former head of global security of Israel's El Al airline, asserting "Technology cannot replace the human being: it can help.' Here we come.

With an established system of airport security (much before the U.S. and other developed countries were forced to adopt) and depending more on human intervention than technology (traditional intuitive skills), can we help them by training staff to rely more on mind than machine? IT or no IT, we still can do more with little and show them how to do.

Equal terms

There is an opportunity for us to move on now to a higher level of technology growth. We were at the receiving end when superior technology stared us in the face. We are now



able to talk to advanced nations on more or less equal terms, in terms of expertise, in a few areas, partnering and collaborating with them, but essentially doing their jobs here. From there to rise to the next level of dominance, though a steep climb, is necessary. Our R&D should now move on lines where they are focused. We should prepare to be there when they arrive. Then and only then can we bid for technology of the Indian brand—at least in those areas where we have perceived capability. There seems to be no impediment as far as policies are concerned. It is a matter of restructuring a few of the advanced centres and creating groups with clear-cut and well-defined objectives, with enough funding. We may also require systems staffed with suitable people to do aggressive marketing of technologies both for domestic and global

markets. Such systems cannot be expected to function efficiently if clubbed with existing bureaucratic units. In fact, it will be advisable to equip them with enough power to operate independently and on commercial lines. There must be mechanisms with such state support as may be necessary to translate our technologies into realizable, recognizable and widely available goods and services, for domestic consumption as well as export. This means we have to think of high volume, competitive and tomorrow's technologies and formulate R&D programmes with such focus. We need change here and now. As a minister while discussing disinvestment issues and public sector undertakings, put it, 'the way we look at things, our discourse, the drag of interests that are vested in the way things are—these are what we need to change.' Will this apply to India Brand Science too?

[The Hindu]

**B.P.O. FIRMS; MAJOR HEADCOUNT ADDITIONS
ANNOUNCED BETWEEN JANUARY-JUNE 2004**

Name of BPO	Headcount additions announced
Daksh	1,500
HIMT	1,500
Accenture	5,700
Dell	2,000
VCustomer	2,500
Xansa	2,000
Wipro Spectra mind	1,300
Perot	2,000
24/7	3,000
Slash Support	1,200
Hughes	1,000
Zenta	2,500
WINS	1,000
Keane	3,400

[T.N.I.E.]

BAMBOO GETS TALLER

P.K.Krishna Kumar

The wonder grass bamboo will get an elevated status in Kerala through the efforts of the ongoing State Bamboo Mission.

Till now, the government had focused on the industry front through Kerala State Bamboo Corporation but now it is planning all-round development with thrust on cultivation and diversification.

To start with, the State is importing 40,000 bamboo seeds from Tripura for distribution in 25 select panchayats. These varieties facilitate better harvesting, “We are also going to adopt Wayanad as bamboo district given the growth potential of the grass there,” says C.P.John, vice-chairman of the Bamboo Mission.

The defunct Gwalior Rayons unit in Kozhikode used to be the main consumer of bamboo from Wayanad. Around 400 tonnes used to reach the factory daily. But with the closure of the unit, a major chunk of the bamboo crop has been going waste.

The Bamboo Mission has hit upon a plan to make boards from bamboo available from Wayanad as it is found to be thicker. The NGO Uravu in Wayanad, which has lot of experience in making bamboo handicrafts, is being given training for making the boards. By focusing on Wayanad, the State can cater to the Mysore and Bangalore markets, John feels.

The Mission is also helping the bamboo workers, numbering around one lakh on rough estimate, to increase their productivity by replicating new machines, particularly for breaking bamboo. The idea is to produce more handicrafts from bamboo. The National Institute of Design will assist in developing new designs.

Several articles made from bamboo like hanger, furniture, toothpick, pen-holders with murals drawn on them sold like hot cakes in Delhi in exhibitions. The Mission has been taking several NGOs engaged in making bamboo articles to such exhibitions to market their products.

A bamboofest is being planned in Kochi in November to tap potential markets.

[TNIE]

INDIA REMAINS AN ISLAND OF FINANCIAL STABILITY: REDDY

Thanks to the economic reforms, India remained an island of financial stability amidst the ocean of turbulence during the last fifteen years, said Y.V.Reddy, governor, Reserve Bank of India.

Reddy referred to the current macro-economic situation and said “positive side is getting more positive on the domestic front while the international situation remains uncertain. Policy response is measured and careful.” [The Hindu].

OUTSOURCING HELPS GAIN CONTROL, OBSERVES SURVEY

As organizations outsourced more business processes, executives gain more control over capabilities that affected their entire organization, according to a report by Accenture, a multinational consulting firm.

In a report, 'Control: Getting it and keeping IT in business process' outsourcing,' Accenture says it found 92 per cent of executives interviewed reported that their overall level of control increased as a result of BPO. "The kind of control these executives got was more powerful than what they initially feared losing," the firm says.

Over two-thirds of those interviewed described control as "very important" or "important" obstacle during the evaluation phase of a BPO deal. These include fear of losing control of operational performance, personal influence, knowledge and customer relationships, the report says.

Those who gained better control as a result of BPO found that processes and information within their organisation became more transparent.

Over a third of the executives agreed that outsourcing allowed them to not only change business direction at a faster and more controlled rate but also supported the acceleration of business growth.

Asia Pacific executives placed high significance on the issue of trust, which is closely related to control.

Over 84 per cent of them specifically cited trust and the Asian way of doing business, built around personal relationships, as a key consideration in any outsourcing relationship. What was evident overall was the desire to find a trustworthy outsourcing partner and the challenge of having to do this without first working together, the report says.



EXPORTS: NEED FOR CORRECTIVE ACTION

That Indian products and services are able to meet the most demanding international standards of quality and price has been rising notwithstanding competition. In fact, the 12 percent growth target set by the Government in the last two years has proved too modest. In fiscal 2002-03, exports grew by 20 per cent while last year the growth was 17 per cent, despite a continuous appreciation of the rupee against the U.S.dollar.

Exports through SEZs in India during first ten months of 2003 were valued at Rs.12,000 crore.

OPHTHALMIC SURGERY TRADITIONS - T.N. CAN BOAST OF

Pushpa Narayan

Medical case sheets of ophthalmic disorders, dysfunctions along with the treatment and results dating back to nearly two centuries have been dug out from the Saraswathi Mahal library in Thanjavur by a team of doctors from Sankara Nethralaya, Chennai.

Following an invitation from the prince, S.Babaji Rajah Bhonsle, a team of ophthalmologists from the hospital, including chairman Dr.S.S.Badrinath and head of the department of Pathology Dr.J.Biswas, camped in the district for more than three days this March 2004 to trace the roots of Ophthalmic medicine.

The team discovered that doctors in the state's cultural citadel, under the rule of Rajah Sarfoji II between 1798 and 1832, took special care to treat eye ailments.

"Our experience was truly humbling. We were surprised to note that they had meticulously recorded minute details of treatment along with the results. More than anything else, it was an inspiration," Dr.Biswas said.

He presented the team's findings at an ophthalmic conference held in the Chennai city.

The case sheets and the findings of the team, he promised, would be published in reputed medical journals soon.

Prince Babaji Rajah Bhonsle, who had invited the doctors, was all smiles. "I found these documents in our library. As I am an engineer, I could not figure out what they meant. Fearing that something precious could be lost in the recesses here, I invited the doctors for research. The discoveries are indeed heartening," he said.

The doctors, along with archaeologists and librarians, traced forty-four case sheets with 18 drawings of the eyes. While at least half a dozen were written in Modi script, the remaining was in English.

The ophthalmic terminology including lid, con-junctiva, cornea, lens, capsule of lens, posterior chamber were found in the case sheets.

Presenting samples of case sheets, Dr.Biswas said the doctors had diagnosed cases of ophthalmic purulent is, ventricular cataract, capsulolenticular cataract and leucoma. The patients were treated in Dhanvantri Mahal, a multi-specialty hospital established by Rajah Sarfoji. It also served as a research institute that produced herbal medicine for humans and animals.

The name of Dr.Mc Bean, an English ophthalmologist along with Dr.Amirthalingam Pillai, figured in most case sheets. "We went round the town but could not find the hospital anywhere. But some people guess that it would have been demolished subsequently," said Dr.Biswas.

[TNIE]



INDUSTRY IN NEW GROWTH PHASE

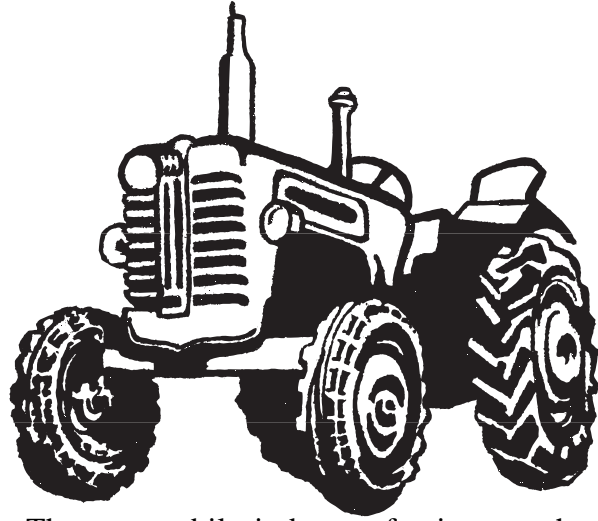
P.A.Seshan

Major industries fare well

Undoubtedly, there will have to be a step up in India's outlays in power, oil and transport sectors. While a definite view in this regard can be taken after a new government is formed at the Centre, it is gratifying to note that the performance of major industries since 1998-99 has been highly encouraging, signaling the emergence of several new forces.

An analysis of production trends of some important industries indicates, an increasing demand for all types of manufactured products, in the domestic and export markets and more effective use of capacities created in a big way in earlier years. In fact, it has become necessary for some key enterprises to plan expansion involving heavy capital expenditure.

It can be asserted that industrial growth is now on new lines and that the industrial and services sectors will be the future engines of growth, as asserted by Dr.Kelkar and others. Thus, the output of finished steel has risen by 53 per cent to 34.41 million tonnes in five years, aluminium by 50.92 per cent to 8.21 lakh tonnes and exports of cotton yarn, fabrics, manmade, readymade garments and others by 44.84 per cent to Rs.50,594 crores.



The automobile industry, for its part, has risen immensely in stature, following the heightened activities of U.S., South Korean, Japanese, Italian, German, British, and other interests. The advent of Maruti Udyog, in the mid Eighties, of course marked the beginning of a new era for the automobile industry.

Outlays on new and expansion schemes of Indian and foreign car makers in the past five years have been on an unprecedented scale and the output of cars has risen by 94 per cent to 7.59 lakh units, while that of commercial vehicles has nearly doubled to 2.68 per cent to 55.97 lakh units in the same period.

Since the multinationals have recognized that production costs in India are 30 per cent lower than in developed countries, and the sub-continent will be a good export base for cars and other four wheelers, the industry

Cashew kernel worth Rs.1,624.50 crore was exported by our country between April 2003 and February 2004.

can hope to achieve much greater heights in a short period.

The petroleum sector too is witnessing significant developments. Apart from a spectacular rise in refining capacity to 131 million tonnes in 2003-04 from 61.55 million tonnes in 1997-98, the output of crude and natural gas from indigenous sources is likely to show a more pronounced rise, following the establishment of new proved reserves of these two fossil fuels in onshore and offshore areas. As huge quantities of natural gas will



also be imported, pipeline networks are being created in a big way to cover all regions in the country, along with huge terminals at various ports.

It is needless to point out that there has been a metamorphic change in the telecommunication sector with both Indian and foreign interests creating the requisite facilities involving huge expenditure. The consumer electronics sector too has developed beyond recognition with Korean and Japanese interests entering the fray with a bang.

It will, thus, be agreed that the developments in the industrial sector have taken place in an unprecedented manner and the industrial base has got considerably broadened and strengthened. The power and transport sectors will be witnessing similar developments in the near future.

Buoyant services sector

The exemplary performance of the services sector will be aiding faster growth to GDP, as software exports alone have risen to \$10.3 billion in 2003-04 from only \$2.6 billion in 4-5 years. As invisible receipts from foreign tourist traffic, remittances from expatriates and other sources have also been rising impressively, surpluses on current account have emerged since 2001-02. Even in 2003-04, the surplus may be more than \$4 billion, in spite of a more than doubling of the trade deficit to around \$16 billion on the basis of the data provided by the Directorate General of Commercial Intelligence and Statistics.

Abundant forex and rupee resources

With forex reserves crossing the \$110 billion mark and foreign exchange assets the \$106 billion mark and the compulsion on the part of the Government to offer market stabilization bonds for absorbing excess liquidity in the money market, there can be no dearth of forex or rupee resources, with the secondary and primary markets already witnessing buoyant conditions and new boom conditions being witnessed after the elections if a stable government can be formed at the Centre. **[The Hindu]**

Pickle exports from our country during 2002-03 were 56,384 tonne valued at Rs.154.16 crore.

OVER ONE LAKH BPO JOBS HEADING TO INDIA!

Business process outsourcing and call centre jobs are increasingly being sent to low-wage nations by American firms, but the nation to register highest growth in BPO jobs will be India, says *Datamonitor*, a London-based research firm.

The firm says that of the 110,000 jobs outsourced from one country to another, at the end of last year, 63,000 of those jobs came to India.

The research firm says that the total number of call centre jobs to be outsourced by 2007 is likely to increase to 241,000. Of these about 1,21,000 jobs will come to India.

Although American call centres are not in danger of being wiped out, *Datamonitor* says that the expansion of the industry would have hit a dead end. Once flourishing, call centres now are dwindling, a trend that is already threatening thousands of jobs.

Currently, there are about 50,600 American call centres employing about 2.9 million people. *Datamonitor* expects the number of US call centres to fall to 47,500 by 2008, with 2.7 million employees.

Because of lower wages overseas, technological advances and tough regulations, call centre jobs are exiting the United States.



Most of the jobs are moving to countries like India, the Philippines, Mexico, Russia and Canada, where the wages are lower. An American call centre worker is paid about \$10 an hour, while for the same job a worker in India is paid \$1.20 an hour. This results in huge savings for companies engaged in outsourcing. Jobs in IT, financial services, insurance, legal support, human resources and medical transcription work have also been moved to India. Aviva made headlines being one of the first groups to set up call centres in India in 2002. Prudential followed, launching a call centre in Mumbai and moved one third of its 3,000 UK-based customer service jobs.

Soon thereafter, HSBC sent 4,000 British jobs to India. Barclays, National Rail Enquires and many US-based Fortune 500 companies too have joined the bandwagon. Giants like Microsoft, Oracle, AOL, Amex already route customer service calls to India Agencies. **[TNIE]**

Per capita consumption of milk in our country is 225 gram per day.

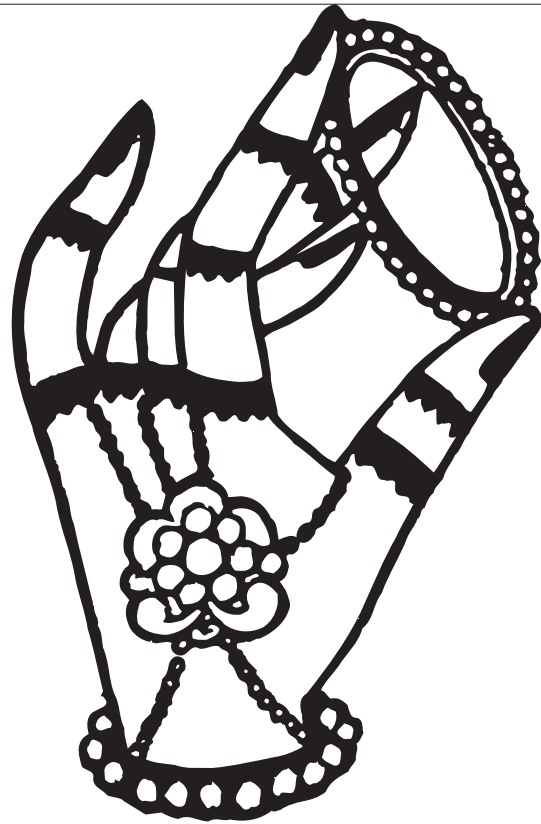
OUTSOURCING: A HARDELL IN THE U.S.

Globalisation is having a bad year. Unions do not like it. Politicians on the campaign trail rail against it. As each monthly employment report confirms the anemic pace of job creation—05/03/04 report was especially grim—more members of the Congress talk about obstructing it. Now, even some practitioners are speaking out against business globalization, too.

“I really hate it,” said Al Lubrano, President of Technical Materials Inc., a Lincoln, R.I., manufacturer of specialty metal parts for computers, telecommunications equipment and other applications. “I think we’re really selling out our manufacturing community down the river.” But like many other American business executives, Lubrano has had to join the trend: Next year, to better serve its customers, Technical Materials plans to open its first operation in China.

The gap between the stated ideal and the business reality is also evident with Angelo R.Mozilo, Chairman of Countrywide Financial, one of the largest mortgage lenders, who was quoted in October in the trade publication *National Mortgage News* as saying, “I feel it is Countrywide’s responsibility to create jobs in the U.S., not outside the U.S”.

By this year, however, Mr.Mozilo was describing how countrywide had leased 40,000 sq.ft. of office space in Bombay and planned to create 250 customer service and support jobs there over the next two years.



The business community’s dissonant attitudes toward global outsourcing—hiring out work overseas—are evident in the results of a survey released on 05/03/04 by the business consultant McKinsey & Co.

But when the executives were asked about the effects of outsourcing on their own businesses, the executive consensus broke down. In Europe, 70 percent of executives said outsourcing was good for their business. So did 86 percent of Chinese executives and 97 percent of those in India.

Yet in the U.S. headquarters to many of the most aggressive and successful globalizing companies in the world, the fraction of executives that said outsourcing was either very positive or somewhat positive for their company dropped to 58 percent.

Some of this ambivalence may reflect the growing political hostility in America against outsourcing, which has come to a boil in the face of lackluster job creation despite robust economic growth.

On the presidential campaign stump, Sen. John Kerry, D-Mass, regularly condemns the 'Benedict Arnold' companies that send jobs overseas. Senate Democrats are backing a bill that would require executives to provide at least 90 days' notice if they plan to lay off more than 14 workers to move their

functions overseas. On Thursday 04/03/04, the Senate passed by a large margin a measure that would put new restrictions on government contractors' shifting jobs overseas.

Foreign direct investment by American corporations has averaged about \$125 billion annually over the last ten years. Though much of this was devoted to serve foreign markets, a growing portion has sought to reap the benefits of cheap labour and resources to make products and services for sale back home. —New York Times.

DELHI FIRST CHOICE OF INVESTORS

According to a comparative study of States, carried out by the Confederation of Indian Industry (CII), Delhi has emerged a clear number one, both in overall terms and investment rankings.

“Among the key factors contributing to Delhi's high standing were: its level of affluence, the purchasing power of the consumer, the performance of its social sector and its financial sector”, said a CII statement.

To rank States according to the attractiveness of investments, the economists analysed per capita State income in 1998, the annual average growth of State domestic product in the 1990s, changes in commercial bank credit between 1991 and 1997, population in the 15-39 working age

group, and the inverse incidence of strikes”.

Delhi is followed by Gujarat, Maharashtra and Goa. Andhra Pradesh, which has aggressively courted foreign investors, had a surprisingly low rank of eighth, just one notch above communist-ruled West Bengal.

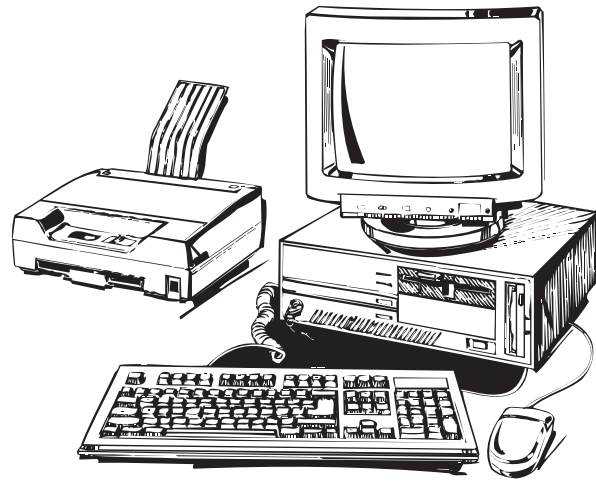
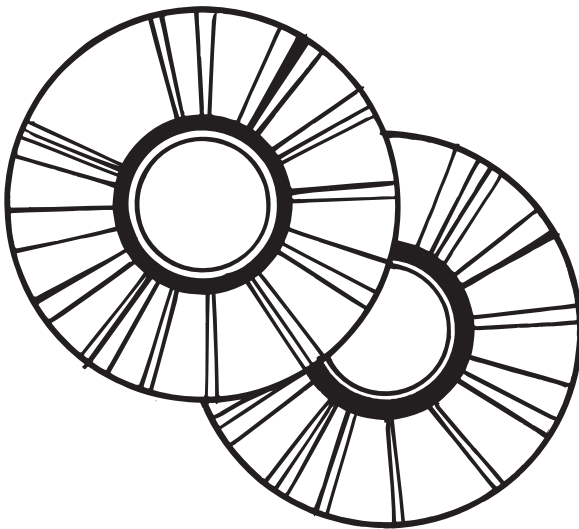
The 14 parameters used to assess were: general achievement of the State, investment climate, infrastructure penetration, efficiency of infrastructure, finance, consumer purchases of goods and durables, personal finance, expenditure on employment, education and health, labour, social sector indicators, environmental indicators, law order and justice, indicators of affluence and mass media penetration. Within these 14 categories, 83 variables were also used for the analysis.

Linseed output in Indian during the current season is estimated at 1.8 lakh tonne.

THE RISE OF INDIAN MULTINATIONALS

The Indian software industry is the number one exporter today, overtaking the gems and jewellery and textile industries, according to Kiran Karnik, President, National Association of Software and Service Companies (Nasscom), Mr.Karnik was speaking at the Stanford Asia Technology Initiative (ATI) global entrepreneurship conference on 'The rise of the Indian multinational: Global business trends'.

Mr.Karnik said of the total merchandise exports of \$60 billion, software exports accounted for \$13 billion. The industry grew at 30 per cent last year despite slowdown in U.S. economy and the projected growth this year has been pegged at 32 per cent. He attributed the performance to India's excellent brand value and the PQRS factor—productivity, quality, rate and skills where the last factor referred not just to numbers but to scalability of skill sets as well.



Nevertheless, there were certain issues that needed to be addressed for India to emerge as an IT superpower. In order to ensure adequate security and privacy of large data, the Nasscom was working on a frame-work on which legislation and enforcement go hand in hand. On the issue of human resource development, the Nasscom was working with State government schools to introduce the English language and computer education, at the primary level itself, besides ensuring regular updation of knowledge dissemination practices from the secondary level upwards. Mr.Karnik was also optimistic about the improvement of infrastructure particularly in the telecom sector.

Earlier, in his keynote address on knowledge based business practices, Ajay Piramal Chairman, Nichola Piramal group, said India's share was only \$6.5 billion of the \$470 billion global pharmaceutical industry. However, in terms of volume, the country was the fourth largest consumer and manufacturer. India was also among the top five manufacturers of bulk drugs and growing at 30 per cent. Another interesting

feature was that of the top ten companies in India in terms of market capitalization, only one was a multinational and others were Indian.

Mr. Piramal added that India had several opportunities in the pharma sector. These included development of drugs for tropical diseases which had great potential with more than 12 percent of the demand coming from this segment, but only 15 drugs had been developed over the past 25 years.

Second, the country enjoyed a great cost advantage in terms of developing a new

product—\$30-35 million against \$1.2 billion that it would cost in the U.S.A. third factor in India's favour was the availability of skilled R&D personnel that was compounded by the fact that there had been a reverse brain drain of sorts with research fellows coming back to the country after receiving high quality training abroad.

N.K. Singh, former member of the Planning Commission and Secretary to the Prime Minister's main Economic Advisor stressed the need for a sustained 7-8 per cent growth in GDP over the next five years in order to acquire a competitive edge in international markets. **[The Hindu]**



TREES MAY REWARD INDIA FOR AGES OF WORSHIP

India could well emerge as one of the largest beneficiaries of carbon credit trading, an emerging global commodity market that analysts estimate could be worth upto \$150 billion by 2012.

The country's dominance in carbon credit trading is expected to be driven, no so much by domestic industry, but by its huge tracts of plantation land.

The 1997 Kyoto Protocol has set firm targets for national level emissions and has also identified key elements in how countries could achieve those targets. This includes an agreement on trading in emission credits and the use of planted forests as a means to meet prescribed levels.

Trading carbon credits is an emerging market designed to allow firms that fail to meet emission standards to buy credits

from other firms that undercut their targets. The Kyoto protocol envisages carbon credit trade between countries with 'carbon sinks' (planted forests) and others that produce higher levels of pollution than they are allowed to.

At 15 million hectares, India has the largest plantation area in the tropics, much larger than even Australia, which aims to be a major player in emissions trading by adding two million hectares of plantation by the year 2020.

Countries like the US, Germany, Japan and China are likely to be the biggest buyers of carbon credits. However, it needs to be remembered that the US has not yet accepted the terms of the Kyoto protocol. The US puts out about a quarter of all greenhouse gas emissions that cause global warming.

BOOMING BPO

Thanuja B.M

Big BPO marriages

- Wipro buyout of Spectramind (Rs.470-crore or \$113 million)
- Transworks acquisition by Aditya Birla Group
- BM takeover of third party BPO Daksh (\$129 million)

Business process outsourcing (BPO) as everyone knows has become the 'in' sector in India. Though the ITES-BPO industry in India is a relatively young and nascent sector, barely over five years old, it has shown an amazing growth and future potential. According to NASSCOM, participants in the ITES-BPO segment number in the hundreds and the figures keep growing every year.

Check this out—during 2003-04, the ITES-BPO exports accounted for US\$3.6 billion in revenues, up from US\$2.5 billion in 2002-03. By the year 2008, it is expected to employ over 1.2 million people and reach revenues of \$24-25 billion.

As Akshaya Bhargava of Infosys' Progeon says, "what we see right now is just the beginning of a very large global trend. As we go forward, BPO industry will move from being a mere call centre to doing full end-to-end work for broader markets, resulting in high value deal sizes." Pankaj Vaish, India BPO Lead, Accenture adds that India has a right mix of people, skills and capabilities to provide cost-effective, high quality solutions and services and continues to be one of the

preferred destinations for BPO related work because, ultimately, it is superior quality work that counts. All this positives apart, the Indian BPO sector does have some important issues to deal with. From the service providers side, it is very ironic that there are 'no 20 Wipro, Spectra minds' in India quips, Raman Roy, CEO of Wipro Spectramind "There are around 500 companies registered with Nassocm for BPO. Less than 100 of them have 1,000 people employed with them, less than 5 companies have more than 5,000 people and only one company has more than 10,000 employees which is Spectra mind. We need to have more consolidation. There are a number of companies looking at assets and entry strategy but we need 2-3 companies merging to form big companies," he adds.

The outsourcing backlash

Amidst the mounting furore against outsourcing, there have been fears that it could affect the Indian BPO industry. But industry people say that the sector has actually got more publicity out of this issue, which has resulted in more customers. Says Raman, "there seems to be a positive to all the negative publicity India has been getting in that even companies which didn't know about India's prowess in outsourcing are now coming to us".

Manpower challenges

While India, with its vast base of English-speaking people, is geared up in terms of

manpower for the ITES-BPO industry, much more needs to be done. According to Raman, “our educational system does not cater to the requirements, aspirations and needs to this industry. For example, Nasscom-McKinsey numbers say that \$45 billion is the size of accounting services. But there is not a single college or institution in the country which teaches US GAAP. We need fundamental changes in our system to enable the industry to have ready professionals.” Or as Nasscom puts it, resources produced may have a strong conceptual/theoretical background but often lack communication and vocation-specific skills and the creative drive or specific regulatory certifications required by clients in foreign countries.

Data Privacy

This is another big issue facing the industry today so much so that Nasscom is preparing a security audit for its 860-member companies in a bid to allay rising fears in the US and UK about customer privacy and data protection in India.

Currently, India does not have a Data Protection Act (DPA). However, Indian companies primarily comply with BS 7799—a global standard that covers all domains of security. While the industry body and many IT people have been saying that the DPA should be put into effect soon, the Wipro Spectramind chief begs to differ. “We are complying with DPAs of the home countries of customers, so a specific act in India is not absolutely necessary, provided you comply with global standards. In fact, DPAs in other

nations cover aspects like tax records, bank accounts, preferential information etc. I don’t think India is mature enough to have all these areas covered” he explains.

Attrition

Reports claim that attrition rates vary by 20-40 percent in some firms, while the top ones average 15 percent. Trained employees are leaving one company for another after being lured by higher salaries. “While service rates for voice-based call centre work are coming down, the numbers of seats are growing and HR costs have reached an all times high of 50-60 percent. The high costs are a result of the high demand for quality manpower. This in turn results in wafer thin margins,” says J.A.S.Diaz, Executive Director of Mainstary Teleservices pvt.Ltd.

Competition

India lacks of long-term strategy and could lose 45 percent of its market share soon to South-East Asia and Central Europe, according to Gartner, BPO earned India US\$2.3 billion last year, representing more than 80 percent share of the global market. “But India would stand to lose 45 percent of that 80 percent share by 2007,” its research director Sujoy Chohan recently said. This was because the government and the industry suffered from “the erroneous belief” that the sector could match the booming growth of the IT industry without devising a long-term road map to do so.

(With inputs from Sangeetha Chengappa T.N.I.E.)



B.P.O. FUTURE OUTLOOK

Tanuja B.M.

The ITES-BPO market is segmented along the lines of customer care, finance, HR, payment services, administration and content development with companies offering customers a range of outsourced services including customer care, Web sales/marketing, billing services, database marketing, accounting, transaction document management, transcription, telesales/telemarketing, tax processing. HR hiring and biotech research.

Now, in a bid to do more high-end work, most BPO are moving from voice based services to high value services like teleradiology, data mining, patent processing, risk analysis etc.

Growth areas in BPO

The industry verticals that are expected to experience the highest amount of ITES-BPO activity in the next few years:

- Financial Services: A large number of Indian ITES-BPO companies are focused on providing services like accounting, billing

and payment services, transaction processing, and equity research support for this sector, which continues to create the largest opportunities. Over the last couple of years, they have also started to offer higher value services to customers in the areas of insurance claims processing and equity research support.

- Telecom: Another segment which is attracting ITES-BPO companies is the telecom industry which is using offshore outsourcing for functions such as customer support, technical support, offshore development of products.

- Retailing: Last couple of years, large global retail chains have been offshoring processes such as transaction processing billing, telemarketing and inventory management to India.

- Automotive: The automotive segment has been outsourcing its engineering, finance and accounting activities. While engineering activities include computer-aided product and tool design, simulation and product and process documentation the finance and accounting processes include claims processing and general legal activities.

INDIANS ARE SECOND TO NONE IN THE WORLD

The Indian Prime Minister Dr. Manmohan Singh has said, "Given fair opportunities Indians are second to none in the world. Among the migrants to U.S., no nation has done so much as Indians have done in America within a time-span of a single generation. Scientists, doctors, engineers, industrialists and traders and educationists, in fact every professional has done well.

He sought the NRIS's help for rebuilding India. President Bush has remarked that India's share in business with America is continuously growing. Until 1980, the home-sick Indians (settled in America) spent a big share of their income on telephoning to India. This prompted Sibir Bhatia, an Indian settled in America, to discover hot mail, e-mail technologies – the Prime Minister said. (Translated from Dinamalar)

ITES-BPO GROWTH BY SERVICE LINES

Service lines	2002-03		2003-04E	
	Employment	Revenue	Employment	Revenue
Customer Care	65,000	810	95,000	1,200
Finance	24,000	510	40,000	820
HR	2,100	45	3,500	70
Payment services	11,000	210	21,000	430
Administration	25,000	310	40,000	540
Content development	44,000	465	4600	520
Total	171,100	2,350	245,500	3,580

Note: All figures are tentative estimates, most players offer multiple processes in different shifts and so do not provide processing revenues or employees. [T.N.I.E.]

EUROPE'S CAPITAL FLIGHT

A Geneva based report says that half of Europe's Industrial giants have shifted their production-base to other (read-mostly developing) countries. They were driven to this decision by mounting production costs in Europe. The change-over may result in the saving of as much as one third of the production costs.

The European council for Trade and Development and the Industrial consultants Rolland Berger have collaborated in a survey which revealed these facts.

One hundred European Industrial giants have taken away 39% of their production work to other localities. 44 other Industrial concerns have decided to follow suit.

61% of British establishments and 15% of German Industries, have decided to leave their original bases. 37% of them want to relocate their factories in Asia.

European Industrialists prefer Indian sites for relocating their factories, because of the availability of good communication skills, English language-educated personnel, good managers, technocrats etc.

80% of the relocated industries have saved about 30% in costs. German, French, Austrian and Swiss factories have reported full satisfaction in the post-shift-scenario. The survey is silent on loss of jobs to Europeans because of their capital flight.

(Dinamani)

WINDS OF OPPORTUNITY BLOWING IN THE JOB MARKET

G.Naga Sridhar

Following the proverbial lull before the storm, winds of change are set to sweep the job market, thanks to the spurt and diversification in business process outsourcing.

Interestingly, it is not only the core ITES professionals who are at the gaining end but also graduates with non-IT background.

According to Kavitha Reddy, assistant vice-president, Team Lease, there could be a multiplication in the job opportunities in the days to come.

“There is considerable interest being expressed by the European countries, Germany for example, in hiring or outsourcing Indian professionals. This is in addition to the opportunities in the US and MNCs in India,” Kavitha Reddy says.

Another trend is the growing number of non-voice jobs. According to one estimate, voice-jobs in call centres had about 90 percent share earlier.

Now, non-voice jobs are occupying more than 35 percent.

“This can be a niche area for non-IT graduates. For they can handle maintenance and scripting work effortlessly,” adds Kavitha. The chance of a lucrative package is high if a person has

the knowledge of major European languages. According to sources, current opportunities are more in German and French.

While the banking and insurance expansion is likely to benefit graduates in economics and insurance professionals with experiences in PSUs, analysts are predicting a windfall in favour of pharmacy graduates.

Similarly, openings for commerce graduates are also going up.

“In the US, banking insurance and pharmacy job market is growing and shortly the same thing can be seen in India too,” says Javed Mirza, President, Taj Software System, which also takes up placements.

But the core IT sector is now open to only those who are from pure IT background. “Earlier, even a humanities graduate who had done courses in mainframe or oracle could find a placement in the US. But now, it is not the case,” explains Javed.

Another trend is ‘hire & fire’ employment nicknamed in the business as ‘temping’. Many MNCs are preferring to take the aid of consultants for this, “because this saves them administrative costs and the liability of firing them,” says Kavitha, whose Team Lease has a headcount of 8,500, all of its associates put together.

[T.N.I.E.]

26,83,675 tonne of soybean meal were exported from India between April 2003 and March 2004.

BHARAT VARSA

S. Wajed Ali

Once twenty-five years ago I visited Calcutta. I must have been ten or eleven years old. Near our house stood a grocery run by an old man. The way to our house ran his shop. Seated on a mattress and chanting like a snake-charmer, he used to read from a thick volume. At the base of his head was a fringe of brilliant white hair, otherwise he was completely bald; perched on his nose was a pair of big silver-framed spectacles; his clean-shaven face was grave. He was the very image of a wise man. Every now and then a middle-aged man came out and sat by him to listen to what he read, getting up to attend to customers as they arrived. A boy of my age, bare-bodied, continued to sit with the old man. Next to him sat two young girls. All of them listened attentively to the old man's reading. They seemed to enjoy the subject greatly.

I became very curious to know what the old man was reading. Leaving my residence I stopped at the grocery to listen. It was the story of how with the help of an army of monkeys Ramachandra built a bridge across the sea and reached the island of Lanka. Hearing of that strange adventure the children's eager faces glowed with delight and excitement. I used to get so engrossed listening to that story that I would have to be summoned back home. I

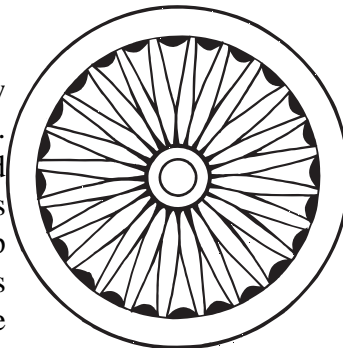
SAMARTHA BHARATA

only learnt that the bridge was being built. I did not have the chance to know what happened next—whether Ramchandra ever crossed the sea by that bridge and if so, what he did thereafter.

After a few days I went back to my village. Since then I have been to so many places that I have lost count of them. Many changes swept over my life like the flow of an ever-



changing river. The picture of the peaceful and innocent life of that old man and his brood was lost in some hidden chamber of my mind. I forgot their very existence. We forget so many such things every day.

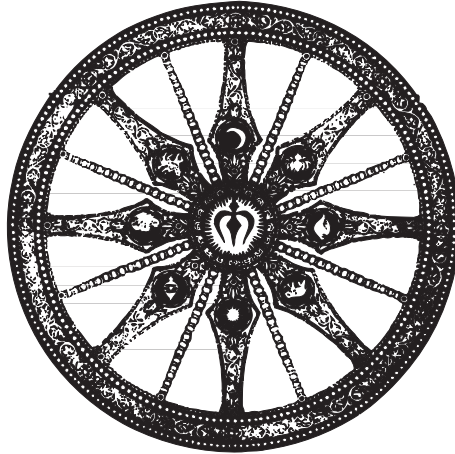


Only the other day, by sheer accident in the course of my wanderings, I found myself once again passing by that same road. All the buildings and houses had changed. Large mansions have now come up where earlier small houses stood. Previously only a few rickshaws or horse-drawn carriages plied along that road; now big motorcars raced about all day. Where gas lamps used to flicker, now electric lights made night as bright as day. As I stood thinking about the inexorable changes of time I glimpsed that old grocery. It had not

changed at all. Things were arranged exactly as before. From the roof hung a kerosene lamp, perhaps the self-same lamp that I had seen twenty-five years ago.

But what astounded me was the scene I saw within. An old man, very much like the one I had seen twenty-five years ago, was seated on a mattress and was reading from a thick volume, intoning like a snake-charmer. A middle-aged man, like the one twenty-five years ago, was now and again coming up to him to listen to the recitation and going back to attend to his customers. A boy similar to the one of those days gone by, bare-bodied, sat gazing at the old man's face. Seated beside him were two girls, similar to those I'd seen all those years ago.

What magic had brought back those days long gone by? Spell-bound, I began to listen. The old man was reading the same story of Ramachandra's building of the bridge—which I had heard twenty-five years ago. I couldn't wait any more. Straightway I went to the old man and asked, "Sir, please excuse me. Twenty-five years ago I saw you reading this book to these children. During these long years haven't they changed? Has there not been any change in you either? Is Ramachandra still building that bridge?"



The old man raised his eyes and looked at me. Taking off his spectacles he cleaned them with the corner of his dhoti and replaced them on his nose. Slowly and gravely his glance scanned me head to toe; then he asked me in amazement, "Did you pass by this place twenty-five years ago?" I replied, "Yes sir." The old man said, "In that case you saw my late father reading this Ramayan. My children used to sit with him, listening. You see that boy has now grown up. He must be your age. My daughters are married. By the grace of God they are now managing their own houses with their husbands and children. This boy is my grandson and these two girls are my granddaughters—they are the children of my son you see there." Pointing to the book in the old man's hand I asked, "How old is this book?"

A sweet gentle smile lit up his face, "This is the Ramayan of Krittibas. My grandfather had bought it from the bat-tala bazaar. It was long time ago, before I was born." Saluting the old man I left the grocery. It seemed to me that I had been gifted with a supernatural insight. An immaculate picture of the real Bharatvarsa revealed itself before my eyes—the same tradition continues uninterrupted; nowhere has it changed. (Original story in Bengali by S.Wajed Ali (1890-1951); translated by Kumud Biswas; edited by Mini Krishnan –The Hindu)

20.17 lakh metric tonne of major fertilizers were produced in the country during February

DIAMONDS ARE FOREVER... AND SO IS JEWELLERY

T.Bhanu

Gem and jewellery sector is unquestionably one of India's leading foreign exchange earners. From US\$28 million in exports achieved in 1966-67, the sector has registered a spectacular growth over the years to \$9.1 billion last year. But the lion's share of this, or \$7.11 billion, is accounted for by exports of cut and polished diamonds as India continues to lead from the front in this segment globally. Diamonds account for 80 percent of the total export basket of the industry, with gold jewellery contributing 16 percent and coloured gemstones and other contributing 2 percent each.

Did we say gold jewellery? Yes, it is gold jewellery that is slated to drive the growth from now on even as the industry's position from the stand point of diamonds shall remain unchallenged for years to come. Cutting and polishing of diamonds calls for special skills and these are available here in good measure. Notwithstanding assumed threats from China and some neighbouring countries, the skills and scope available in India make it almost untouchable for others to come anywhere near and snatch the title. But there are limitations. We are largely known for cutting and polishing small, and what are called, cheap goods. Working on stones of bigger size and higher value is not exactly our forte, though attempts continue to be done on that behalf. In short, the 'cheap goods' make up for the industry's bread and butter.

Indian diamond merchants are well aware of the inherent dangers of putting all their eggs in one basket. Which is why they are constantly on the lookout for diversification. The search has taken them to the jewellery sector—both plain and studded—and over the last ten years the jewellery sub-sector has made rapid strides. India has now emerged as the fastest growing jewellery exporter in the world, averaging a growth of nearly 40 percent each year between 1991-92 and now. Thus exports of gold jewellery in 2002-03 touched US\$1.5 billion from just \$304 million in 1991-92.

According to the Gem & Jewellery Export Promotion Council India's export jewellery industry has made rapid strides in terms of machinery and design development. Its quality, designs and management are on par with world standards. Indeed the announcement sometime ago of grant of duty-free imports into the US under the GSP to certain categories of jewellery has increased India's competitiveness vis-à-vis other countries and boosted jewellery exports. But the significant point to note is that jewellery export per se on a big scale is a relatively new experience, compared to cut and polished diamonds whose Indian connection dates back to the fifties. And since the focus was mainly on diamonds, the jewellery sector perhaps did not get the attention it deserved. That must partly explain why there is such a big divide

Gold use for jewellery in India during 2003 was 2,547 metric tonne.

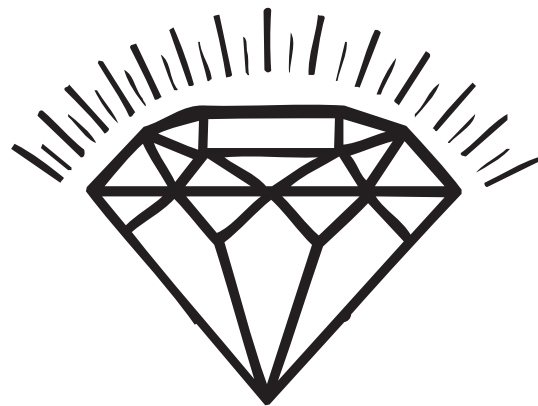
between the diamond and jewellery exports. And, in the case of diamonds there is yet another factor which weighed heavily in its favour.

In the initial stages, bureaucrats more or less treated diamonds like the present-day information technology (IT) industry. They hardly had any clue about the diamonds and about their cuts and caratage or even about the 'sights' to source the roughs. By the time they came to terms with diamonds, the industry had already grown to a formidable size. Yet bureaucratic hurdles, that border on foolishness, were imposed from time to time, but these were overcome thanks to some of the stalwarts in the industry who could put across their case cogently and get the government to see reason. By its peculiar nature, gem and jewellery industry is not something where one can get into and flourish at will. If money were the only criterion, then the Tatas and Birlas would have been the leaders in the industry which, alas, is not the case. You need to have a hawk's eye and a sixth sense to remain intact in this industry which is a body of closely knit units. It is against this background the Indian diamond merchants are doing their business.

We talked about diamonds, sourcing of which was and is relatively simple. But that was not the case for jewellery. For making jewellery, you need gold and with our archaic Gold Control Act and other physical restrictions, gold was hard to come by. Thankfully, over a decade ago, the Act was repealed but several controls were still in place making it virtually difficult to import free gold. The government has recently

removed all restrictions on import of gold and that should stand the jewellery sector in good stead.

If, in an era of all kinds of restrictions and controls, the jewellery sector could flourish and register a year-on-year growth of 40 percent, one can well imagine where the sector is headed. According to a leading diamond and jewellery exporter, this is one sector which is worth watching in the years to come. Today, eleven out of 12 diamonds set in jewellery worldwide come from India. Tomorrow, India will boast of that kind of presence in the global jewellery market with perhaps 70 or 80 percent share!



Claims the Gem & Jewellery Export Promotion Council: "India is the only centre which offers a truly mind-boggling variety of gems and plain, diamond studded and coloured stone studded jewellery suited for every market in the world." The stage seems to have already been set. There is bound to be forward integration into manufacturing of plain and studded precious metal jewellery and the industry will spawn many joint ventures, partnerships and mergers. The gem and jewellery industry has grown by leaps and bounds. According to Vision 2007, a

The processed food sector in the country creates 1.8 jobs for every lakh of rupee invested.

document drawn up by the Council, plans are to achieve diamond exports of \$16 billion three years from now and raise the share of world jewellery market estimated at \$93 billion, of which India's share at present is a minuscule \$1.5 billion. Making India a one stop shop for jewellery offering all designs and varieties and transforming the country from the largest diamond manufacturing centre to the largest trading centre of the world are the other two mission statements of Vision 2007. For an industry which employs over a million people with a marketing network of some 2,500 offices across the globe, this does not appear to be a tall order.

However, as Sanjay Kothari, chairman of the Council points out... "We need support from banks to counter basic troubles faced by the Indian gem and jewellery sector like easy availability of dollar credit, project finance interest rates to be at par with the external credit rates, encouragement of diamond and jewellery dollar account, finance of deemed exports that need to be put across to government agencies and the banking fraternity. Furthermore, we would require proposals to be cleared in a defined time and encouragement of small and medium enterprises."

[The New Indian Express]

OBJECT FRONTIER TARGETS TOP 20 IT FIRMS

Object Frontier Software Pvt. Ltd, a Chennai-based provider of persistence frameworks for J2EE, JDO and J2SE platforms with relational databases, is entering services and aiming at top 20 IT firms in the country.

The company's flagship product Frontier Suite, an O-R mapping tool, has earned the Sun Tone certification from Sun Microsystems Inc, said A James Walter, CEO, Object Frontier.

"This is the first Indian product of its kind, and only third in the world, to earn this prestigious certification. The certification confirms that the product meets stringent scalability, availability, reliability and performance standards necessary for quality deployment of web-based services," he said.

INDIA TO ASSIST BHUTAN IN ANIMAL HUSBANDRY

India will send two expert delegations to Bhutan for the preparation of draft proposals to extend technical and other assistance in animal husbandry and dairying and agriculture marketing. The delegations from the Department of animal Husbandry and Dairying and the National Institute of Agricultural marketing will visit Bhutan in September.

Rural postal life insurance business in the country grew to Rs.6,000 crore in 2003 from Rs.550 crore in 1999.

THE LONG ROUTE

Traditionally, India has always excelled in the field of diamond and gem cutting, polishing and in the craft of gold smithy. India's diamond tradition goes back thousands of years and is the oldest in the world. In fact, diamonds were discovered in India around 8,000 BC.

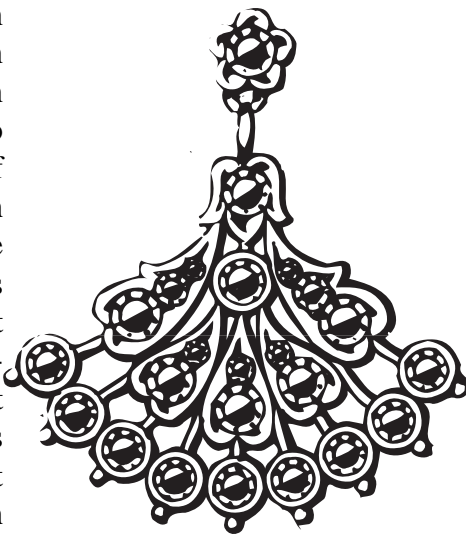
For 1,000 years, starting 4th Century BC, India was the only source of diamonds in the world. In about 600 AD, diamonds were found in Kalamantian, Borneo and are still mined there. Except for a minor supply of diamonds from Borneo, India was the world's only source until the 1730s. Important sources of diamonds discovered in Brazil in 1725, and in South Africa in 1867 marked a dramatic increase in the world diamond supply.

India's maximum production, around 100,000 carats annually in the 16th century, is small by modern standards (120 million carats during 2002). Indian craftsmen were the first to unlock the secrets of diamond cutting, although the cutting did not include faceting and polishing as is common today. Most Indian diamonds were flat-cuts. They were also almost all very large stones because the mines at Golconda, Andhra Pradesh were hand-dug. The Golconda mines were exhausted in the 19th century, just about the time alluvial diamonds were found in Brazil.



By the end of the 19th century, the great Indian diamond era had passed into history. However, the beginning from the 1960s, another industry took roots, viz. the Indian diamond-processing industry. This was largely created when the world demand and prices of industrial diamonds had declined during the 1960s, because of the advances of synthetic industrial materials. It was then

discovered that some industrial diamonds could be processed using cheap labour, and the resultant polished diamonds be applied to jewellery. Thus the term 'near-gem' or 'Indian goods' was invented.



As compared with the traditional diamond cutting and polishing centres of Belgium, India, with its low labour cost, opened up new possibilities for the world diamond industry. This was because, inexpensive stones, in which the cost of processing would be a

significant component of the selling price, could now be processed. As a result, diamonds could be made affordable for new, less affluent buyers. India captured an increased proportion of this market, and at present, is the world's leading diamond cutting and polishing centre. In recent times, India has increasingly held a dominant position in the world in the cutting and polishing of diamonds. At present, India is the world's leading diamond cutting and polishing centre, accounting for 53 percent share of the global polished diamond market in terms of value, 80 percent share in terms of caratage, and 95 percent share in terms of pieces in the global production of cut and polished diamonds.

With negligible domestic production of gold, diamonds, and other gemstones, the Indian GJ depends entirely on imported raw materials. During FY2003, imports of pearls, precious and semi-precious stones aggregated Rs.292.99 billion (US\$6.05 billion), accounting for 16.3 percent of India's non-bulk imports, and 9.9 percent of total imports. Nearly 82 percent of India's G.J. imports during FY 2003 were of rough diamonds (which are then cut & polished for re-export), followed by polished diamonds (8.5 percent), and gold bars (8.2 percent).

(Excerpts from an ICRA report on the gem & jewellery industry)



U.K. DEPARTMENTS WANT OUTSOURCING IN INDIA: REPORT

Apart from multi-national financial institutions, British government departments now plan to outsource in India as part of their cost-cutting and efficiency drive. "Departments should seek to match the savings achieved by private-sector firms through so-called off-shoring," Sir Peter Gershon, former chief executive of the Office of Government Commerce, recommended in his final confidential report for the Treasury last month. The Sunday Times reported today (16/05/04) —PTI.



Ad spends on television in our country are currently estimated at Rs.4,220 crore compared to Rs.250 crore in 1992-93.

BIOTECHNOLOGY: THE REVOLUTION BEGINS

Kiran Mazumdar-Shaw-CMD-BIOCON

The Indian biotechnology industry is gaining momentum. With revenues of over \$700 million (Rs.3,265 crores) in 2003-04, the fledgling industry, despite all hurdles, is well on its way to cross the psychological barrier of \$1 billion in the current year (2004). It is poised to leverage its scientific skills and technical expertise to make a global impact from a strong innovation led platform.

There are 40 National Research laboratories in the country employing 15,000 scientists. There are more than 300 college level educational and training institutes offering degrees and diplomas in biotechnology, bio-informatics and the biological sciences, producing nearly five lakh students annually.

There are over 100 medical colleges churning out 17,000 medical practitioners a year. Given this skilled resource pool, India is in a good position to create a sustainable biotechnology business. The sector is gradually building critical mass both in terms of infrastructure and markets.

There have been many significant developments in this sector over the last few years. The year 2004 is proving to be a watershed year for Indian biotechnology; it witnessed the sector's first IPO being oversubscribed over 30 times indicating over-whelming investor interest in this new segment. The year will see three mega biotech events; Bio Asia, Bangalore Bio and

CII's India Biotech, apart from summits addressing global partnering drug discovery, biogenerics, genomics and other biotech areas. ABLE, the Association of Biotechnology Led Enterprises, and Biospectrum have been raising the profile of the Indian Biotech sector through various collaborative programmes with national and international bodies including WIPO (world International Patents Organization) and PhRMA (Pharmaceutical Research & Manufacturers of America).

Other important statistics include: the vaccine producers from India (Serum Institute, Bharat Biotech, Shantha Biotechnics, Panacea Biotech, Wockhardt, Bharat Immunologicals and a few others) command a global leadership position which was been well recognised by international organisations such as the World Health Organisation, The Gates Foundation and others. Biogenerics is another area where Indian companies are rapidly gaining a global vantage position. Biocon and Wockhardt, between them, can address Asia's insulin requirements. In agri-biotech, India has the potential to be a leading supplier of genetically modified (GM) seeds to the world. India's chemical engineering skills offer a real potential to be world leaders in biotech equipment. The potential is endless but the opportunities are real.

Given this impressive back-drop, biotechnology is certainly the next big frontier

for the Indian economy. The current market size is estimated at Rs.6,500 crores (\$1.5 billion) encompassing agri, pharma and industrial biotechnology.

Competitive advantages

Leadership position possible India's efforts to attain a leadership position in biotechnology look achievable given the human biodiversity that exists here. This offers unique human gene pools as powerful as those of Iceland, for exclusive genomic and pharmaco-genomic studies, Indian companies have a golden opportunity to unravel high value IPR by way of disease-linked genes and the diagnostic and therapeutic products emanating thereof.

For example, thalassaemia is a genetic disease prevalent in many inbred Indian societies. Given the proper approach, India can convert the disadvantage of a diseased population into a strong research advantage, which can translate into therapies and cures

for thousands in India and other across the globe.

India's plant and microbial biodiversities also provide a treasure-trove for drug discovery. Many of the international pharma majors have collaborative HTS (high-throughput screening) programmes with universities worldwide and are now entering into similar prospecting partnerships with several Indian companies. Added to this is India's inherent knowledge base of ayurvedic and unani medicine, which offer a unique mining opportunity for new drug molecules.

India's vast and diverse disease and patient population also provides an enormous clinical development opportunity. The cost of drug development is largely attributed to the cost of conducting clinical trials. Indian CROs (Clinical Research Organisations) have an opportunity to access the \$10 billion global market for clinical trials. The presence of a large talent pool of medical and paramedical professionals is conducive to

STATUS OF AYURVEDA IN INDIA

The Indian government and non-government organizations have been collecting statistics on the Ayurvedic system in India and these data about the manpower and institutional aspects of *Ayurveda* have emerged:

- Registered medical practitioners: 366, 812
- Hospitals: 2,189
- Teaching Institutions (undergraduate): 187
- Specialities in Postgraduate Medical Training: 16
- Pharmacies Manufacturing *Ayurvedic* Medicines: 8,400
- Dispensaries: 22,100
- Hospital Beds: 33, 145
- Upgraded P.G. Depts: 51

In India, 60 percent of registered physicians are involved in non-allopathic systems of medicine. In addition to the nearly 400,000 *Ayurvedic* practitioners, there are over 170,000 homeopathic physicians; India has about 500,000 medical doctors (similar to the number in the US, but serving nearly 4 times as many people). Reliance on *Ayurvedic* medicine is heavy in certain regions of India, such as Kerala in the Southwest. Many *Ayurvedic* practitioners in small villages are not registered. (**The New Indian Express**)

building a strong clinical development infrastructure. International CROs have already recognised this opportunity and have set up operations in anticipation of policy changes that will enable clinical trials to be carried out in India on equivalent lines of those conducted elsewhere. The 'India Advantage' in clinical development is clearly the speed of patient enrolment and thereby shorter time lines for clinical trials. Apart from Phase 1-4 clinical trials, Indian companies have a large commercial opportunity in pre-clinical trials, Indian companies have a large commercial opportunity in pre-clinical and 'proof of concept' studies.

There thus exists an exciting opportunity for biotech companies in the U.S. and Europe to forward-integrate their drug development programmes at lower cost and shorter time lines in India which would provide them with a lower cost validation option over trials conducted in the more expensive research environs of the west. Alternatively, the monetary risk could be shared with an Indian partner who is keenly seeking to backward

integrate into research and discovery. Such bio-partnering opportunities need to be encouraged strongly by the venture capitalists as a de-risking strategy.

The biotechnology sector is already showcasing India's potential to attaining leadership in vaccine production, genetically modified crops and clinical development.

Global success for Indian biotechnology will largely depend on creating the lowest cost base for innovation.

It is therefore imperative to evolve fiscal and regulatory policies that support capital-intensive research and manufacturing, long gestation time for product commercialisation and investments in patenting and technology licensing.

A strong patenting regime, regulatory reforms that permit Phase I clinical trials and pragmatic fiscal support to research and development will enable India to realise its global aspirations for biotechnology.

(The Hindu)



INDIAN NURSES; NEED IN THE WEST

Before 2008, some 4.5 Indian nurses will be needed in America alone. Britain, Canada, and Australia also need nurses.

A number of nursing schools have come up in India recently. Big hospitals have started their own training institutes in India.

The shortage of nurses has been a problem in the US for the past 15 years. The new found enthusiasm among American youth for accounting and management jobs has pushed the demands for nurses up.

70 lakh tonne of groundnut was produced by Gujarat in 2003.

NILGIRIS MOUNTAIN RAILWAY

A fit case for heritage status: UNESCO consultant D.Radhakrishnan

The Nilgris Mountain Railway (NMR), which is in a remarkably original state, is a fit case for world heritage status, according to the Australian academician and United Nations Educational, Scientific and Cultural Organisation (UNESCO) consultant, Robert Lee.

A parallel could be drawn between the NMR and 'rack railway lines' in Austria and Switzerland. But unlike the NMR they were modified.

'Safety standards high'

Asked about the special features of the NMR, he said its environment was unique and it was much longer than similar lines. However, the engines "are not quite original". He said though the operations on the lines were arduous, the NMR's safety standards were high and the signalling system was much better than in Europe. For grant of heritage status, changes which were done over the years were not taken into consideration.

The NMR was a marvel of engineering skill. Rack railways were mostly low in productivity and the only way of covering

the operational cost was to increase the fares.



He could not think of anything which could be construed as negative about the NMR. Its potential for attracting foreign tourists was tremendous, there were no shortcomings.

With the world heritage status, the NMR's stock as a global tourist attraction would go up manifold. Though the UNESCO would not directly extend any financial assistance to the NMR if it was declared a heritage site, it could fund community development and educational schemes associated with the line. **(The Hindu)**

Toy industry in West Bengal is expected to earn revenues of Rs.300 crore by 2006

HERBS AND LIMBS

B.M.Thanuja

Some 80 percent of the world's population relies on traditional medicine, says the World Health Organisation (WHO). With increased concerns about rising healthcare costs, some governments are encouraging the use of indigenous forms of medicine rather than expensive imported drugs. This has been a strong driver for the resuscitation of herbal drugs.

Natural medicine seems to be the new catchword across the world and this has revitalized the herbal industry. Although herbs have been used since time immemorial, it is only now that it has become legitimized as an industry. In other words, herbal medicine and natural pharmaceuticals (neutraceuticals) are moving from the fringes of society to the mainstream, with many more people seeking herbal remedies now. But why?

“The global consumer and medical fraternity are fast realizing the limitations of the present mainstream healthcare system. Medical practitioners and consumers who earlier looked at the herbal system as an ‘alternative’, are now beginning to integrate it into mainstream healthcare system as complementary,” says Ravi Prasad, CEO of Himalaya Drug Company, adding, “Yes, the future for the herbal industry in serving the personal and healthcare needs of consumers across the world indeed looks bright and promising.”

China and India have traditionally been the two most widely known nations for herbal

medicine, but this sector was not very popular as it is generally perceived as fraudulent. But now, with increasing acceptance not just in these countries but also others, herbal industry has become big business. China uses around 5,000 plant species while India uses over 7,000 species in its traditional ‘ayurvedic’ medicine. Sales of traditional medicines in China are said to have more than doubled in the last five years, while Indian exports in this sector have tripled in the past decade, according to reports.

India's most popular form of traditional medicine is *ayurveda*. The synergy between *ayurveda* and modern medicine is now evolving-in India. Until recently, the methods of traditional medical systems were obscure, esoteric and shrouded in mysticism. But not any more. Modern science is rapidly unlocking the way these methods achieve results. This in turn has led to the arrival of a new type of medicine using ancient techniques under scientific management. The new system is broadly categorized under the nomenclature ‘Active *Ayurved*’.

The commercial potential of *Ayurveda* can also be gauged from the fact that the global market for herbal health care is estimated at \$62 billion. In India, the estimated size of herbal health and personal care market is in the range of Rs.2,500 crore to Rs.3,000 crore and it is growing at a rate of 15 to 20 percent per annum, according to Prasad.

Ayurvedic medicines are produced by scores of companies in the country, but most of

them are very small, including some neighbourhood pharmacies which make their own concoction. The industry is dominated by less than a dozen big companies like Dabur, Himalaya Drug Company, Baidyanath, Zandu which together have about 85 percent of India's domestic market.

The products of these companies are included within the broad category of FMCG which mainly involves foods, beverages, toiletries etc, as most of them provide products other than *ayurvedic* internal medicines, particularly in the areas of foods and toiletries (soap, toothpaste, shampoo, etc).

The market for *ayurvedic* internal medicines is dominated by *Chyawanprash*, a herbal honey. The leader in this field is Dabur, which had a 69 percent market share at the end of 2002; followed by Baidyanath with nearly 11 percent, Zandu and Himani (Emami Group) with about 7.5 percent each. Last year, Himalaya introduced its version of honey, which market sources say is doing very well. A variety of individual herbs, traditional formulations, and proprietary medicines for various ailments make up the rest of the health products section involving internal remedies, while the remainder of the market is taken up by toothpastes and powders, skin creams, massage oils, shampoos, and other topical preparations. Exports of *ayurvedic* medicines have reached a value of more than \$100 million a year (about 10 percent the value of the entire *ayurvedic* industry in India). About 60 percent of this is crude herbs (to be manufactured into products outside India), about 30 percent is finished product shipped abroad for direct sales to consumers and the remaining 10 percent is partially prepared

products to be finished in the foreign countries.

All this has now led the major pharma players in India to foray into this sector. A spokesperson of Nicholas Piramal Ltd said that the Mumbai-based pharmaceutical company is eyeing a foray into herbal prescription drugs. Piramal is not alone. Hordes of Indian pharmaceutical companies are either leaping into herbal drugs or planning on doing so, Cipla, Elder Pharma and RPG Life Sciences are quietly looking at entering this segment, Ranbaxy Laboratories, Lupin Labs and Alem Labs recently announced they would be entering the herbal prescription drug business. What is more, even companies that already have a minor presence in herbal drugs are planning to expand.

“Though *Ayurveda* is the oldest and purest system of medicine known to humanity, the herbal healthcare segment consists of an assortment of unorganized players. The products manufactured by the unorganized players lack quality and purity, resulting in the end consumer receiving sub-standard *ayurvedic* products. The entry of Ranbaxy, Lupin and Dr.Reddy's into the *ayurvedic* segment will only help in growing the herbal healthcare market. Organized players through their communication can help in generating awareness amongst the end consumer, resulting in an overall growth of the herbal healthcare segment/*ayurvedic* product marketing and communication will help in generating awareness amongst the end consumer, resulting in an overall growth of the herbal healthcare segment,” is Prasad's comment.

Pharmaceutical industry analysts believe that the emerging trend of self-medication and

the preference for natural products with minimal side-effects will drive the growth of the herbal drug market. The Indian herbal drug market, which is split between ethical—drugs the require a doctor’s prescription—and over the counter (OTC) drugs, is growing by over 15 percent a year against the compounded annual growth rate of around 8.0 percent reported by the Rs.20,000 crore (Rs.200 billion) allopathic drugs market.

Adding to this is the herbal and ayurvedic clinics or resorts all over the country which are becoming quite a fad. Some of these clinics have been present for some decades but majority are cropping up now. These clinics are offering remedies for various ailments, with Indian and foreigners flocking to them. An example are the Arya Vaidya Sala. Founded in 1902, by Vaidyaratnam P.S.Varier, the Kottakkal Arya Vaidya Sala

is today the largest and most trusted institution of its kind in India. It offers authentic *ayurvedic* medicines are treatments to patients from all over India and abroad. The Arya Vaidya Sala also manages an *ayurvedic* hospital at Kottakkal in Kerala and another at Delhi.

Another is the Ayurvedic Natural Health Centre, Goa, which provides *ayurvedic* health care services for tourists from around the world. All though its herbal products can be shipped anywhere, the services of *ayurveda*—epitomised by the week-long *Panchakarma* regimen—are obtained by staying at a special clinic. The US-based Ayush Herbs Pvt.Ltd which has a clinic in Kangra, Himalchal Pradesh, also plans to open more clinics offering ‘*panchakarma*’ or the traditional ayurvedic system of treatment across India.

(The New Indian Express)



ESTIMATED GLOBAL MARKET IN AYURVEDA-\$62 BILLION

Estimated size of herbal health and personal care market in India-Rs.2,500 crore to Rs.3,000 crore and it is growing at a growth rate of 15-20 percent per annum.

- India’s share—1 to 2 percent (\$551 million)
- China’s share—48 percent (\$45 billion)

The global demand for herbal products is growing at a rapid pace. A World Health Organisation (WHO) study has projected the demand to reach \$5 trillion by 2050 from the present \$62 billion. Of the estimated 400 families of flowering medicinal plants in the world, India is home to at least 315 species, according to WHO.

Exports of *Ayurvedic* medicines—\$100 million a year (about 10 percent the value of the entire *Ayurvedic* industry in India). About 60 percent of this is crude herbs (to be manufactured into products outside India), about 30 percent is finished products shipped abroad for direct sales to consumers, and the remaining 10 percent is partially prepared products to be finished in the foreign countries.

(The New Indian Express)

WHAT IT TAKES TO BE A WORLD POWER

Yashwant Sinha

Prosperity and economic clout rather than war and aggression will be the key determinants of status in the world community

The term 'Great Power' or 'Major Power' should be seen in modern 21st century setting and not in its historical context. India does not subscribe to the conventional idea of power. India approaches the notion of power with an alternative vision.

India's power capabilities are a guarantee of the freedom and security of its people who constitute one sixth of humanity. For us, power is a means of advancing the welfare of our people and a tool for preserving and consolidating the autonomy of our foreign and domestic policy. Moreover, as befits India's history and the traditions of its post-independence foreign policy, our pursuit of power is firmly anchored in an international mission aimed at eliminating the scourge of war, protecting international law, strengthening the U.N. and striving for a new deal for developing countries whose people constitute the large majority of the world.

India's recent achievements in terms of hard power are many. They include the development of a nuclear deterrent; military modernisation; rapid economic growth with a rate expected to reach over 8 per cent this year (2004) transition from a food deficit, aid receiving nation with limited foreign exchange reserves to a food exporter and

aid giving nation with the sixth largest foreign exchange reserves in the world; major advances in areas of high technology and global recognition of India's huge reservoir of young and world class human resources.

Traditionally, military might has been considered the most important of the various ingredients of power. However, the use of force in naked pursuit of national interests is no longer a viable objective for moral as well as pragmatic reasons. Power in the 21st century will flow from a well run economy. Prosperity and economic clout rather than war and aggression will be the key determinants of status in the world community.

It has been argued by some that India's decision to develop nuclear weapons was purely a political act aimed at enhancing its status in the world by breaking into the exclusive nuclear club. This is a fallacy. In a world where weapons of mass destruction are still to be eliminated, nuclear weapons sadly remain the ultimate guarantor of a nation's security. It was the imposition of an imperfect non-proliferation order, evidence of which is all around us, that compelled us to make the transition from nuclear abstinence to that of a reluctant nuclear power. India is a mature nuclear power, which takes the responsibility of possessing this awesome capability very seriously.

To turn to soft power, India's influence has spread far and wide since ancient times of the strength of our culture, religion and philosophy. As the land of Gandhi and as a nation that won its independence through a struggle unique in the annals of history, India has an international image that few others can claim. Similarly, our leadership of the Non-Aligned Movement, our contribution to virtually every major activity of the United Nations, including over 36 peace-keeping operations involving around 67,000 troops, and our consistent espousal of the cause of developing countries is well recognized by the international community.

India's track record as a democracy; the success we have achieved in welding together an extraordinarily large and diverse society into a nation, our fiercely independent judiciary and vibrant press also stand out in any international comparison. Moreover, yoga and Indian food, music, cinema, fashion, dance, writing, etc. are all riding the high tide of globalization and winning new friends for India in far corners of the world. The success of our IIT's and IT industry has spawned a novel stereotype of an Indian as a workaholic computer whiz kid. Ambitious forays into foreign lands by our trade and industry are also resulting in the slow but steady emergence of 'Brand India.'

Three important aspects deserve further elaboration. Firstly, India is a unique model of democracy plus economic growth in the developing world. The success of Indian democracy is important not only for its intrinsic worth but also because economic progress built on the foundation of popular participation and rule of law is likely to be much more sustainable. Moreover, as India's developmental efforts take deeper root and we succeed in taking education, health and infrastructure to our rural areas, we will add significant new numbers to our scientific and technical workforce and that in turn will impart further momentum to economic growth. More than any other factor, it is India's silent revolution in the field of rural development and women's empowerment, which will catapult India to world status.

Secondly, India's self-perception has shifted from that of a weak developing country to that of a great power in the making. This constitutes a huge mental leap for India. Thirdly, India's foreign policy has never been as complete and comprehensive as it is today. Throughout the Cold War, we were estranged from the West in general and the U.S. in particular. Today, we enjoy a very good relationship with not only the United States but also all major Western powers. And, this has not been at the cost of our traditional friendship and strategic partnership with Russia or any other country,

**GENERAL MOTORS CANNOT AFFORD AMERICAN COSTS;
DECIDES TO SHIFT TO INDIA**

While the controversy on BPO in America is on, General Motors, the American Automobile giant has decided to shift billions of dollars worth jobs to India. Wanting to cut costs by 25% before 2005, the General Motors has already shifted 216 crores-worth job to India and Canada. **(Dinamani)**

including our developing country partners of Africa, Latin America and Asia. Further, we are now even thinking the unthinkable. Differences with China and Pakistan, which have festered for decades, are being addressed in a straightforward and pragmatic manner as never before. There is a new dynamic in South Asia with the signing of the SAFTA. SAARC is exploring how progress can be made towards an economic union, including a common currency. And, work has already commenced on transport and energy corridors that will criss-cross Asia with India as its hub.

In any discussion on a country like India emerging as a major power, it is but legitimate that we ask the question—can India afford this? It is my firm view that the Holy Grail cannot be India's unless and until we address our domestic economic and social issues. These problems are a drag on our ambitions and must be conquered through determined national efforts.

However, pursuit of power in the international community and the need to address pressing tasks at home are not exclusive of each other. Our efforts in the international and domestic fields complement and supplement each other, especially so in a globalised world. The speed with which we address our domestic challenges will add to our influence in the international community and *vice versa*, the more we emerge as a power in the world, the more we will be able to contribute to the strengthening of our economy.

Further, unity and social harmony within the country is a *sinequa non* for India's progress in the international arena. India's biggest strength is its secular and multi-cultural

ethos. The fact that India's Muslim population is the second largest in the world and that its Christian minorities outnumber the entire population of many European countries is a badge of honour for us. To damage our heritage of tolerance and pluralism or to waver in upholding these principles is the biggest setback that can occur to our great power ambitions.

While India has sought to change existing power equations in the global order, it has essentially been a *status quo* power that does not seek to upset the existing order through violent means. India does not resort to export of terrorism or proliferation of the treaty. We do not seek to snatch territory

THE WORLD NOW RESPECTS INDIA **S.Gurumurthy**

A Headline in the Economic Times (14-5-2004) reads: Royal Dutch-Shell company India gives work worth Rs.4500 crores as information Technology outsourcing.

The Central Office Services of the Royal Dutch-Shell are to be taken to India by a group called Group IT infrastructure G.I.T.I, which is nick-named "Give it to India". In Dutch-Shell, outsourcing means outsourcing in India.

Difference in salary rates between the U.S. and India, is a major factor in such outsourcing. A job that is done at Rs.10,000 p.m. in India, will cost Rs.50,000 to 60,000 in the US. The Royal Dutch-Shell alone will be saving Rs.3825 crores a year by outsourcing to India. The profit doubles. So far India's I.T. giants TCS, WIPRO and Infosys were landing individual jobs earning upto Rs.500 crores. Now Wipro IBM's single order is worth ten times its earlier catches. The worst fears of the Western countries have become true, outsourcing has come about in a big way.

from others or re-write the history of our sub-continent. We criticize the developed world for its unfair economic policies. At the same time, we seek to engage the North in dialogue and to appeal to their reasons and wisdom. India has repeatedly drawn attention to the undemocratic character of the permanent membership of the U.N. But that has not prevented us from working with the Security Council and its members in advancing the goals of the U.N.

There is no doubt that the road ahead is long and arduous. Like all matters of international politics, the rise of India will depend not just on India's actions but also on how the rest of the world responds to this development and the objective circumstances of the coming decades. Nevertheless, India has started a confident march in the right directions and we are determined to succeed in reaching our goal.

As a major power, the values that India will seek to spread in the world and the goals that we will strive to achieve will be the same values and goals that infuse our national and civilisational experience. India will always stand for democracy within and amongst countries. It will act as a pro-active agent of peace. India will continue to strive for international equity and justice. It will be a champion of the free movement of goods, services and persons across national frontiers. Finally, by combining democracy with economic growth and by successfully managing its pluralist society through an open, transparent and participative process, India is already setting an example for the rest of the world.

(Adapted from an address delivered in New Delhi on March 12, 2004)

(The Hindu)



SAVINGS AND INVESTMENT FORM THE BASIS OF DEVELOPMENT

Professor Kaushik Basu, Professor of Economics, Cornell University has said: "The basis for the development is laid by savings by the people and investment".

India's internal production has appreciably increased in the recent years. India has to strive for greater development. Eradication of poverty and, economic development are helped by the saving habit of the people and the proper investment of the savings. We cannot afford to neglect them. Patents are very important for the developmental process. More Indians should come forward to apply for patents.

The number of persons living below poverty kind has comedown by 30%. It is an achievement. **(Dinamani)**

THE YOUNG INDIAN'S MOVEMENT

R.Gopalakrishnan

YI movement aims at evolving an action plan based on interaction with young policy makers, parliamentarians, media persons and professionals to enable the youth to play their due role in meeting the challenges facing the country.

In a recently conducted a summit devoted to the theme “unleashing the India opportunity”, International consultants MC Kinsey made a presentation on “India-opportunities unlimited.”

The YI movement is initiated by the C.I.I. YI is far from elitist. It is inclusive in reach and encompasses achievers between 18-40 years from various professions, arts and academia.

The YI believes that one of the fundamental tasks before the nation is the creation of employment, considering that as much as

74% of the population is below 45 years of age. The contemporary world presents both a challenge and our opportunity for India's youth.

The chairman of the first summit said, “we aim at inspiring dynamic and successful young Indians to give back something to India. The summit was a dialogue between youth and leaders in government, industry, arts sports etc”.

The programmes included 1. Presentation by successful young Indians, 2. A discussion as how the nation's youth should respond to geopolitical trends 3. A talk on “my vision for India” by stars from different walks of Indian society and 4. A panel discussion by the Young Parliamentarians Forum.

The YI movement had initiated YI bridge programmes for interaction with students of colleges.



WE HAVE ENOUGH RESERVES, SAYS COAL INDIA

Sakyasen Mitra

Latest estimates have it that the country has reserves of 90 billion tonne of coal, which is sufficient for domestic consumption in the next 60 to 70 years. Coal India Ltd, the largest organization in the country with employee strength of 4.82 lakh is ensuring that India's coal bandwagon moves on.

We have positive indications regarding the presence of fresh stocks of coal in two-thirds of the total area that we have probed.” However, coal prices may increase in the very near future.

INDIA IS EMERGING AS A STRONG FORCE

Singapore Trade Conference has applauded Bharat. The growing stature of India as a strong economic force in the world was the topic for discussion in the Singapore trade meet in July 2004.

“India welcomes-2004 Asian-Pacific Trade Conference” was organized by the Association of Indian Businessmen in Singapore.

Shri Chand Hinduja head of the Hinduja group said “There is good scope for investment in India’s, constructions work, also in the field of creating job opportunities abroad. Skilled man-power, cost efficient labour of world standards and a large market are India’s attractions”.

“Health, communication, media, agro-industries, automobile manufacture, pharmaceutical production, etc. have scope for large investment. The central government also helps” he added.

The Singapore minister for trade Raymond commented on Indian industrialists emerging as great competitors in the world market. “Bill-care” a pharmaceutical company from India is to start production in Singapore soon.

Indu Jain Chairman of the Times of India group said that America is trying to capture and control the world with its military might, Japan with appropriate technology and commerce, whereas India has already sent its young men (and women) to the far corners of the globe and has captured it.

(Dinamalar Translated)



TRILOGY SPEAKS

Q. The nineties had seen an outflow of Indian IT professionals to the Silicon Valley and elsewhere in the west; do you see a change in this trend, what have been the factors behind this?

A. There is a change in the trend of Indian IT professionals moving to the west and it is due to the culmination of several factors. There is an enormous growth in India’s IT industry and there are a number of MNCs either investing or setting up their offshore units in India. In fact, several of Trilogy’s [an IT company] new hires belong to this category of Indian professionals returning back to India after spending several years in the US.

Job opportunities are increasing and job profiles are similar to those available in the US. Companies that are R&D centric are already moving the core development and R&D activities to India, which in turn provides exciting job opportunities to professionals here. The degree of project complexities are viewed as a challenge and with technology that eases communication, techies in India can work in tandem with their customers situated anywhere across the world.

[T N I E]

S&P UPGRADES INDIA'S CURRENCY RATING

Standard & Poor's (S&P) has upgraded its outlook for India's long term foreign currency rating to 'positive' from 'stable' on the back of improving external liquidity and chances of India's debt burden stabilising.

"The outlook revision reflect India's improving external liquidity and better prospects for the Government's debt burden to stabilise," said Ping Chew, Director, Sovereign and International Public Finance Rating Group of S&P.

"In addition, India's robust foreign exchange reserves, which exceed 2000 per cent of short-term debt, mitigate the risk of volatility in external confidence."

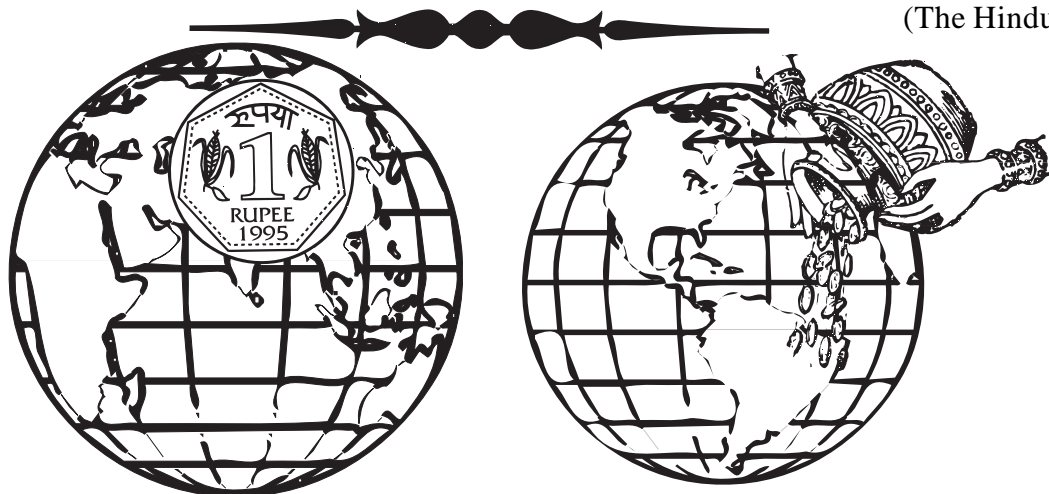
S&P also revised its outlook on the Export-Import Bank of India's long-term foreign currency rating to positive from stable. At the same time, S&P revised the outlook on

the long-term local currency rating to 'stable' from 'negative'.

The sovereign rating on India are supported by the country's good economic prospects, with GDP growth likely to trend over 6 per cent over the medium term. The service sector is dynamic, while the industrial sector is benefiting from gradual deregulation, trade liberalisation and modest improvements in infrastructure. "Good economic growth could contain the pressure on India's already weak public finances, provided tax reform continues," said Mr.Chew.

India's external debt and debt service burden is expected to fall due to strong export growth and non-debt foreign capital inflows, which should help offset the impact of rising imports given the surge in oil prices. India's total external debt is likely to fall below 100 per cent of current account receipt for the current fiscal year ending march 31, 2005 compared with over 200 per cent in fiscal 1993.

(The Hindu)



BIOINFORMATICS ON A STEADY PATH OF GROWTH

G.Naga Sridhar

With the biotech sector poised for rapid growth in the country, a major spin-off sector is bioinformatics, an area which is seeing a vertical growth because of the growing synergy between the information technology (IT) and biotechnology (BT).

Indian companies can garner a 5 percent global market share by 2005, which translates into a \$3 billion opportunity.

A few companies in Hyderabad, Bangalore, Chennai and Delhi among others, are striving hard to make a niche for themselves in this regard. According to Vijay Chandru of Strand Genomics, Bangalore, bioinformatics holds the key for drug-discovery and large

investments in the sector can bring down gestation period in drug-making. "The huge data mining option will facilitate diagnostics-based drug-discovery, which is cheaper by about 40 percent than the normal procedure," he feels. There can be an aggressive growth in IT spending by biotech companies beyond 2005, as many of the organisations are already making special efforts to develop enterprise applications including management, and storage as priorities.

IDC expects IT spending in biosciences in India will cross \$138 million n by 2005, mainly in the areas of system clusters, storage, application software, and services. (TNIE)



RETAIL SECTOR GAINING MOMENTUM

Ramnath Subbu

The Indian retail sector is on the threshold of something big. With the total retail trade estimated at \$200 billion and the organised segment accounting for a mere 2 per cent of this, almost all the organised players have in place aggressive expansion plans.

The annual retail consumption in the country is around Rs.900,000 crores but with value addition could be scaled up to Rs.1,200,000 crores. In fact, the association is confident that modern retail would have a beneficial trickle-down effect on sectors such as steel, cement and glass, bring larger revenues for the State governments and boost sectors such as tourism and hotels. The development of modern retail in India could enable enhanced productivity, employment and economic growth.

Gold reserves of our country stand at \$4,198 million as on April 2004.

INDIA INC ON A ROLL

Hiring perks up like it never did

Rajesh Menon

This is the new face of Generation Next in India. Over 50,000 professionals work in Bangalore's call-centres and BPO firms alone. And this is just the tip of the iceberg.

But it is not just the call-centres and business process outsourcing firms that have boosted the job market in the country. After a lull, the country's economy would seem to be on an upward trajectory. There has been an overall improvement in the sentiments, and after a slack 2002, hiring is getting back on India Inc's agenda.

There have been many favourable factors contributing towards this. A better than before financial results of many companies, rupee getting stronger against the dollar, India emerging as the number one outsourcing destination, good monsoon and agriculture sector picking up have all contributed to the new emerging India.

The Confederation of Indian Industry (CII) Business Outlook Survey covering 215 member companies across a spectrum of industry groups-both in public and private sectors-for the October 2003-March 2004 period exhibited a result of 64.9 points, in improvement of 3.3 points over the previous period (April-September 2003).

Let us look at the flavour of the season-information technology. It has now been accepted that off shoring has become mainstream and the IT sector is reviving

itself. What more proof do you need than the recent hiring spree by the IT firms, so much so that they have already started recruiting for the next year. In addition to it, the multinational firms have all set up shops or are scouting the Indian shores for picking the best brains and starting their own outfits.

By 2015, analysts predict that more than 3 million white-collar jobs in the US will be farmed out to other countries, up from about 3,00,000 today. "Simple, base-level back-office payroll and data entry will go to rock-bottom-wage countries like Vietnam and Uruguay over time, and countries like India will move up the food chain and take on more complex software and product development services," says analyst John McCarthy of Forrester Research.

Recruitment trend analysis clearly shows a positive trend in the overall industry scenario in India and this likely to continue till this year-end," it says. Insurance, IT software, IT-enabled services, auto, manufacturing, heavy industry and chemical and allied industries are some of the sectors that have shown tremendous potential in hiring professionals. Incidentally, banking and financial services along with insurance are now the hot areas where hiring is happening in the lower and middle-management levels.

Interestingly, among the management graduates, consulting is the in-thing, followed by banking and financial services,

fast moving consumer goods (FMCG), IT and investment banking. A study by Bangalore-based brand consulting, advertising and public relations firm brand-comm shows that Indian Institute of management (IIM) students aspire to become consultants. “The much-hyped sectors like telecom, biotech, pharma and healthcare, insurance, BPO, fashion and retail do not seem to be attractive enough for these young managers in the making,” the study says.

But for the graduates, it is the ITES segment that seems to be holding a special charm. For all the talk of China, the Philippines and Malaysia giving a stiff competition to India in ITES, the figures put out by global consultancy firm McKinsey paint a completely different picture. The reason: India is low on cost but high on quality with abundant supply of skilled workforce.

A rough look at the empirical data gives a clear picture. If it costs \$2.50 per hour to employ a person in a call centre in Shanghai, it costs just \$1.50 in Mumbai. If the number

of qualified workers available in Shanghai for customer call centre is between 6,000 and 7,000 per year, in Mumbai it is between 35,000 and 45,000. Not to forget that we haven’t even got into Bangalore, Chennai, Hyderabad, Kochi, Delhi, Noida and gurgaon.

It is not just the call centre jobs where India has an edge. Be it in back office functions of finance and accounting or electronic document conversion, India is way ahead than its competitors. From availability of qualified workforce to costs, India leads the way with China a distant fourth.

If back office work for finance and accounting costs \$1.35 per hour in Mumbai, it is \$2.03 per hour in Shanghai. And as for the qualified workers available per year: 14,000-17,000 in Mumbai compared with 12,000-15,000 in Shanghai.

“When you can get the same job done for a fraction of cost, it makes sense to export jobs,” says a top official of a multinational firm in Bangalore.



THE IT EDGE

Labour Pool: India has many prestigious technical universities, but the Indian Institute of Technology stands apart as one of the world’s best. India produces 75,000 IT graduates and 2 million English-speaking graduates annually.

Expertise: Application development, maintenance, call centres, financial processing. Experts see India becoming a hotbed for more critical analytical jobs.

CONVENIENCE FOODS

N.Venugopal

- a. **I**ndia's food processing sector has entered a promising market. It covers fruit and vegetables, meat and poultry, milk and milk products, alcoholic beverages, fisheries, plantation, grain processing and other consumer product groups like confectionery, chocolates and cocoa products, soya-based products, mineral water, high protein foods etc.
- b. The biggest bottleneck in expanding the food processing sector, in terms of both investment and exports, is lack of adequate infrastructure. Without a strong and dependable cold chain, food processing industry, based mostly on perishable products cannot survive and grow. Even at current level of production, farm produce valued at Rs.7,000 crore is being wasted every year only because there is no adequate storage, transportation, cold chain facilities and other infrastructure supports. Cold chain facilities are miserably inadequate to meet the increasing production of various
- c. The Government of India, realising the potential of the sector, has set up a separate Ministry of Food Processing Industries in July 1988. The ministry, the central agency responsible for developing a strong and vibrant food processing sector with a view to creating increased job opportunities in rural areas, enables the farmers to reap benefit from modern technology, create surplus for exports and stimulating demand for processed food.

Thanks to the efforts of the government and other regulatory bodies, the food processing industry has really taken the growth path. "The food processing sector of India is on a new mode of growth. There is a hitherto unfound dynamism emerging from the sector with the government announcing food processing as one of the thrust sectors in its modernisation process," says Amit Mitra, secretary general, Confederation of Indian Food Trade & Industry.

(T.N.I.E)

AMERICAN CONTROVERSY CONTRIBUTES TO INDIA'S KITTY

The Recent controversy across the US over outsourcing Business Processes to India has resulted in excellent media publicity for India.

The economic aspects and the functional efficiency of exporting BPO jobs to India have been studied well and published.

A Wall Street Journalist has said that the controversy and the resulting media exposure have benefited India to the tune of millions of dollars in free publicity.

The Japanese, Chinese and Swiss companies encourage their young people to learn to speak English in a bid to compete with India for jobs. (Dinamani)

GROWTH OF FOOD PROCESSING IN INDIA

The food processing industry in the country is one of the largest in terms of production, consumption, export and growth prospects. The government has been providing a number of fiscal reliefs and incentives, to encourage commercialisation and value addition to agricultural produce, for minimising pre/post harvest wastage, generating employment and export growth. Fruit and vegetable processing, fish-processing, milk processing, meat and poultry processing, packaged/convenience foods, alcoholic beverages and soft drinks and grain processing are the sub-sectors that come under food processing sector. Between August 1991 and March 2003, the food processing industry has witnessed fast growth and the turnover of the total food market is estimated at Rs.2,50,000 crore (\$69.4 billion) out of which value-added food products comprise Rs.80,000 crore (\$22.2 billion).

Between August 1991 and February 2000, India received proposals for projects of over Rs.53,800 crore (\$13.4 billion) in various segments of the food and agro-processing industry. Government also approved proposals for joint ventures, foreign collaboration, industrial licenses and 100 percent export oriented units envisaging an investment of Rs.19,100 crore (\$4.80 billion) during the same period. Out of this, foreign investment is over Rs.9,100 crore (\$18.2 billion).

Processed food exports were at over Rs.13,500 crore (\$3.2 billion) in 1998-99. Out of these exports, rice accounted for 46 percent, whereas marine products accounted for over 34 percent.

Primary food processing is a major industry with lakhs of rice-mills. There are several thousands of bakeries, traditional food units and fruit/vegetable/spice processing units in the unorganised sector.

In the organised sector, there are over 820 flour mills, 418 fish processing units, 5,198 fruit/vegetable processing units, and 171 meat processing units. India is the world's second largest producer of fruits and vegetables, but hardly 2 percent of the produce is processed. India is the land of spices producing all varieties worth over Rs.3,500 crore (\$900 million) amounting to 25-30 percent of world production, which is processed for value-addition and export. India grows 22 million tonne of oilseeds covering most of the varieties. Other important plantation products include tea, coffee, cocoa and cashew. India has large marine product and processing potential with varied fish resources along the 8,041-km long coastline, 28,000 km of rivers and millions of hectares of reservoirs and brackish water. India's livestock population is largest in the world with 50 percent of world's buffaloes and 20 percent of cattle, but only about 1 percent of total meat production is converted to value-added products.

India is the largest milk producer in the world and about 15 percent of the total milk production is processed through the organised sector. Size of the semi-processed and ready to eat packaged food industry is over Rs.4,000 crore (\$1 billion) and is growing at over 20 percent.

(Source: Ministry of Food Processing Industry Annual Report 2003)



SECTION - 6 DEFENDING INDIA

This is the ancient land where wisdom made its home before it went into any other country, the same India whose influx of spirituality is represented, as it were, on the material plane, by rolling rivers like oceans, where the eternal Himalayas, rising tier above tier with their snowcaps, looks as it were into the very mysteries of heaven. Here is the same India whose soil has been trodden by the feet of the greatest sages that ever lived. Here first sprang up inquiries into the nature of man and into the internal world. Here first arose the doctrines of the immortality of the soul, the existence of a supervising God, an immanent God in nature and in man, and here the highest ideals of religion and philosophy have attained their culminating points.

-Swami Vivekananda





Thus spake Swami Vivekananda

This is the land from whence, like tidal waves, spirituality and philosophy have again and again rushed out and deluged the world, and this is the land from whence once more such tides must proceed in order to bring life and vigour into the decaying races of mankind. It is the same India which has withstood the shocks of centuries, of hundreds of foreign invasions, of hundreds of upheavals of manners and customs. It is the same land which stands firmer than any rock in the world, with its undying vigour, indestructible life. Its life is of the same nature as the soul, without beginning and without end, immortal; and we are the children of such a country.

ISRO DEVELOPING ADVANCED VERSION OF GSLV

K.Kasturirangan

The Indian Space Research Organisation (ISRO) is currently developing an advanced version of the geo-synchronous satellite launch vehicle GSLV-MK III.

“The GSLV-MK III is currently in its initial stage-it is expected to be developed by 2007. This will have the capability to launch four-tonne satellites into geo-synchronous transfer orbit (GTO).

“When ready, it will be the most cost-effective and reliable launch vehicle,” the GSLV-MK III was only the first in a series of ambitious projects which formed the country’s space vision.

“From the year 2,000 ISRO has entered the expansion phase-this phase will witness consolidation, innovative missions and a host of newer services being offered through satellites.

“The space vision includes carrying out manned lunar mission, planetary missions and building reusable launch vehicles.”

‘Chandrayan-1 mission’ (Indian lunar mission) was step in this direction, more so, since it also marked the nation’s first foray into space study beyond the Moon.

The space programme would be relevant only if it could contribute towards enhancing the quality of life and act as a catalyst to drive economic growth.

“Our space mission must be a tool for social upliftment and it is important that social relevance continues to drive the mission. The immediate future will see ISRO launch a series of Edusats, besides launching an Astrosat and a Healthsat.”

“The Edusat, the ‘teacher in the sky,’ which is under development, will seek to bring about school, university, knowledge connectivity. We are working with Anna University and IITs to address challenges with the ground systems.

“The Healthsat can bring health kiosks, mobile kiosks and medical advice centres and experts under one roof thus ushering in a health revolution,”

The societal vision must lead to the development of several intelligent and smart thematic satellites, which can be integrated to the terrestrial network. “These can be a tool to address issues such a health, education, natural resources management, disaster mitigation, pollution control, civil services, home security and aerial surveying.”



THE 'LAHAT' MISSILE

Indian defence scientists claim to have achieved a breakthrough by developing a beyond-visual-range missile 'Lahat' for the country's indigenous Main Battle Tank Arjun.

The laser anti-homing Lahat missile is capable of being fired from the 120 mm rifle gun of the tank, which now gets a capability matching the just-acquired T-90 tanks, which sport a BVR missile of over 5 to 8 kms engagement capability.

Lahat is a semi-active laser homing missile, which could be fired from the main gun of the tank similar to conventional rounds.

"This would significantly enhance the fighting capability of the MBT Arjun since its maximum effective range is 6 kms as compared to the 2.5 kms of conventional ammunition," The missile could be fired either in a lofted trajectory against armored

fighting vehicles and in flat trajectory against helicopters.

"The fire control system of the tank would include laser designator to project a coded-laser beam on the target. Target designation can also be done by another tank or ground laser designator.

Some of the newly-developed Lahat missiles had recently been test-fired from the main gun of the MBT Arjun in field trials to confirm the missile launch parameters such as sabot separation.

The penetration capability of the missile warhead was tested and 'the results conform to the requirements'.

The missile has been developed by Combat Vehicles Research and Development Establishment (CVRDE) Avadi in collaboration with a private firm.

(The New Indian Express)

AGNI-2 TEST-FIRED

On January 18, 2001, India took a decisive step towards its goal of deploying a credible nuclear deterrent. India successfully conducted the second flying test of its 2500 km range Agni-II Intermediate Range Ballistic Missile (IRBM) from a mobile launcher at the Interim Test Range in Chandipur-on-sea in Orissa. Although it was the second Agni-II test, it was for the first time that this missile was test-fired "in its final operational configuration."

Most observers say that the Agni is being designed as a deterrent against China. If that is the case, India has some way to go, since with its current range, the Agni-II can at best cover Chinese territory till the western cities of Chengdu and Kunming, if based in the central plateau of Bihar. Even if based in Assam, a some-what improbable scenario, the missile would not be able to reach either Shanghai or Beijing. For this purpose, India is developing the Agni-III, a longer range missile capable of reaching targets upto 3500 km.

ISRO'S SPECTACULAR LEAP IN 25 YEARS

T.S.Subramanian

On August 10, 1979, India's first Satellite Launch Vehicle – SLV-3 – roared skyward from Sriharikotta in Andhra Pradesh, carrying a small payload called Rohini Technology Payload (RTP). The mission failed. The rocket and RTP fell into the Bay of Bengal. The rocket weighed 17 tonnes and the payload about 35 kg.

Satish Dhawan, who was Chairman, Indian Space Research Organisation (ISRO), came out of the SHAR station and told a few waiting newsmen that the mission was “a partial success.” “We stumbled a little but did not fall flat on our face,” he said and walked back. The project director then was A.P.J.Abdul Kalam, now the President. A jammed valve in the control system of the second stage of the launch vehicle led to the failure.

Eleven months later, on July 18, 1980, another SLV-3 rose into the sky from Sriharikota and orbited a satellite called Rohini. The SLV-3 weighed 17 tonnes and it was 22 metres tall. The Rohini weighed 40 kg. That success propelled India into the exclusive space club of the United States, the then U.S.S.R., the United Kingdom, France, Japan and China. The project director of the successful flight was Mr.Kalam.

Reason for failure

Some days prior to the successful mission, Vasant Gowariker, then Director, Vikram Sarabhai Space Centre (VSSC),

Thiruvananthapuram, explained why the first SLV-3 flight failed.

“The nitric acid in the solenoid valve leaked. A rocket trying to go up without the nitric acid is like your trying to drive a car without petrol,” he said.

The ISRO has not thought it fit to commemorate the silver jubilee of the launch of the first SLV-3. at a function at the VSSC on November 21,2003, Prof.P.D.Bhavsar, one of the pioneers of ISRO, commented with anguish in a different context, “ISRO has no sense of history.”

At last, a bust of Vikram Sarabhai, the architect of the country's space programme, was unveiled on the campus of the ISRO's headquarters in Bangalore this August 12, his 85th birthday-several of those associated with that August 10,1979 launch are no longer alive. Satish Dhawan, then ISRO Chairman, S.Srinivasan, who was VSSC Director, and M.R.Kurup, former SHAR Director, are no more. In 25 years, ISRO has made a spectacular leap. From a SLV-3 that weighed 17 tonnes and an RTP of 35 kg weight, it is all set to launch an aerial leviathan called the Geo-Synchronous Launch Vehicle (GSLV) in September, which would orbit EDUSAT. The GSLV weighs 414 tonnes and it is 49 metres tall. The EDUSAT weighs about 1,900 kg. Today, India can build its own launch vehicles and its own satellites. It can put any type of satellite into any orbit.

The genesis

India's space programme had its genesis when a Nike-Apache rocket imported from the U.S. took off from the fishing village of Thumba, near Thiruvananthapuram, on November 21, 1963. It weighed 715 kg and reached an altitude of 208 km. It was an international effort under the auspices of the United Nations.

Its sodium-vapour payload was from France; the range clearance was given by M1-4 helicopter from the Soviet Union; and the rocket and payload engineers were Indians. The two-stage rocket was assembled in the nearby St. Mary Magdalene church, which now houses a space museum. The adjacent Bishop's House served as the Control Centre. But there were contretemps. The French payload would not marry up with the American rocket. Welding could cause fire because sodium was volatile. So Sarabhai asked Bhavsar, "How can we fit the payload?" Mr. Kalam and another colleague scraped the payload with a small hand tool until it mated with the rocket. The launch was a success. The orange trail from the

sodium vapour that lit up the twilight sky caused excitement in Kerala. The State Assembly, which was in session then, adjourned for a few minutes for its members to enjoy the spectacle.

Big plans

India's truly indigenous programme began in 1969 when a "pencil rocket" that weighed 10 kg sped a few km into the atmosphere from Thumba. The rocket was assembled in the St. Mary Magdalene church.

ISRO has big plans. It has already started working on sending a probe, called Chandrayaan, to the moon in 2008; on building reusable launchers; and on recovering satellites after they fall into the sea. Work is under way on GSLV-MK III. It will weigh 630 tonnes and measure 43 metres in height. It will put a satellite weighing four tonnes at a height of 36,000 km. A second launch pad has been built at Sriharikota at a cost of Rs.350 crores. It will be blooded when a PSLV takes off from it before this year is out. **[The Hindu]**



MARS EXTENDS GLOBAL REACH OF INDIAN AIR FORCE

Defying logistic barriers, the Indian Air Force has made operational in record time its just-acquired force multipliers, the IL-78 mid-air refuellers, (MARS) making India the only power in Asia after China to deploy such a capability.

INDIAN ARMY

Introduction : Looking back from the 1990s, when the Indian Army projects power and sinew, it becomes difficult to remember the kind of fledgeling it was in 1947.

Grit and experience affect the growth of an institution. Fighting four major wars, insurgency and other low intensity wars has indeed made it an eminently and efficient battle trained, war machine.

Changing times bring changing needs. Battle training must tell also on the structuring of the army, for it is this function that extracts the most from the assets available, both men and material. A look at the command and structuring of the Indian Army shows how finely these have been tuned to meet India's threat perceptions, based on the experience of the major wars that it has fought and the present-day geo-political context.

Command and Control

The 1947-48 Kashmir War was fought with an evolving Indian higher command set-up. The *ad hoc* Delhi and East Punjab command, created to control the widespread communal disturbances and tackle the refugee migration problem, soon gave way to a resurrected Headquarters Western Command.

The short 1962 Border War with China dictated that no matter what the state of electronic communications, higher directive control should be exercised from geographical proximity.

The static Areas, Sub Areas, or Independent Sub Areas span the length and breadth of the country. These look after infrastructural (and lines of communications) assets, relieving field formations from the tedium of administering a multiplicity of support installations located in an area. Area boundaries conform to state (or a group of states) administrative boundaries. All Headquarters are tasked also to maintain full civil-military liaison. Static Areas (or even field formations in some cases) set up Station Headquarters whose area of responsibility usually coincides with a district or a group of districts. Field formations located in Areas are always contingently tasked to assist the civil administration through these static Headquarters. Strangely enough, this system works.

The Basic Materials

The largest standing *volunteer* Army in the world has never had to scour the populace for draft or conscription. There are always more men eager to don olive green than the demand at any one time. But this does not reflect a situation where a large unemployed workforce would get into uniform to keep body and soul together. More to the point is the basic *attitude* of our people to the call of arms, discovered also by the British, some three centuries before. There are very many who join up for long service tenures under the colours, by inclination and choice - also

familial habit and honour. If a young man, sound of body and mind, and of Indian origin, is inclined to spend most of his useful working years in the kind of desolation that the country's Field areas' adjoining the borders provide, can he be refused?

For the purpose of recruitment, the country is divided into recruiting zones.

The Leaders

The officer corps strength versus commanded strength averages 7 to 8 per cent. After independence there was only one period (1963-65) when a need arose to offer short-term emergency commissions. That was when a pre-1962 planned expansion was compressed in terms of time leading to this call. The main brunt of the fighting in 1965 and 1971 at junior command levels was taken up by this group. Just as in the Second World War, they, along with their regular counterparts, responded with traditional *elan*. Over the years, a number of Commission streams had merged together. The last of the Royal Military Academy, Sandhurst, graduates retired in 1969. The Indian Military Academy (IMA), Dehra Dun, graduates, as well as the Short Service/Emergency Commissioned Officers of the Second World War formed the overwhelming bulk filling the fighting command slots in 1947-49; the King's Commission Indian Officers taking over the higher command appointments.

In 1949 a unique experiment was launched - that of cadet-level training for all the three Services together for three years and thereafter moving on to Service academies for pre-Commission training. This was the Joint Services Wing (Dehra Dun), which in

later years became the National Defence Academy (NDA) Khadakvasla.

At present, the Army officer intake is from four distinct streams, namely the NDA; the graduate direct entry stream (IMA); cadets chosen from the ranks and initially trained at the Army Cadet College - an adjunct of the IMA; and a five-year Short Service

Commission stream from the Officers Training Academy, Madras. A few selected Junior Commissioned Officers (a grade existing only in the



Indian and Pakistan Armies) are offered Regimental Commissions. The Short Service stream is offered Regular Commissions by choice and reassessment. Officers of the NDA have now reached three-star rank in all three Services. A common indicator of the *type* of leadership extant in the Army are casualty ratios. In all our wars, officer casualties have been high. This is an internal assessment criterion. Management experts point out that high casualties bespeak of poor command. The point, however, is that Officers of the combat arms *lead* from the front and do not *manage* from the rear.

The sacrificial content of the leadership ethos built up over decades has served the country well. But far more important, the ranks know for certain that there will be no directive commands by electronics or remote control. The training of the Indian army officer is meant to subsume his persona under a very demanding but explicit code.

The Ethos

The greatest binding force in the Indian Army remains unit cohesion and tradition. Truly

heady is this mixture of Unit identification and traditions of sacrificial valour, handed down through centuries. At one point, victory or defeat becomes irrelevant. What matters is - *Has the unit measured up?*

Among the warriors, this all-embracing ethos works like a comforting blanket. When all seems (or is) lost, the last string that refuses to snap is, 'I must not let my unit's name be sullied'. An example here, is the living tradition of an old battalion of the Sikh Regiment.

Almost a century ago, a handful held off a horde of tribesmen at a bleak spot in the NWFP - to the last man. The place was called Saragarhi. Much later, in 1962, the same battalion, taking fearful losses was told by their Commanding Officer - 'We have not even started touching the levels established by our ancestors' (mentioning that stand); The battalion died where it stood at Walong. Phoenix-like it rose again, to smash Burki in 1965.

The elite para-commandos and parachute battalions -India's 'Red Devils' as they are affectionately called have an unsurpassed ethos and *elan* of their own. 2 Para Battalion executed a superb airborne assault operation at Tangail in East Pakistan on 11 December 1971, the first of its kind on the subcontinent. The Armoured Corps retains the Cavalry Slouch, and an infuriatingly languid air of not being seen as perturbed in public.

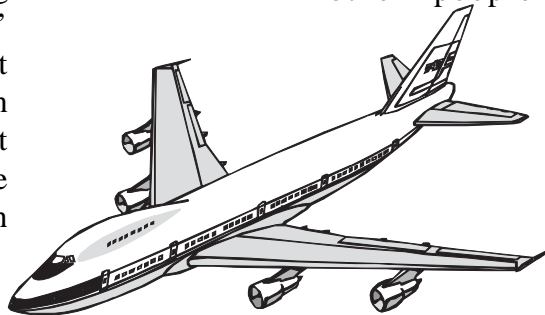
The Gunners are a breed apart. A phlegmatic bunch of men, they are not given to why, where as, or where fores.

The 'literati' in the sword arms are the gentlemen of the Engineers and Signals. The Engineers share a motto with the Gunners - *Sarvatra* (*Ubique* in Latin, or 'Everywhere' in common parlance).

The most ungentlemanly lot are the Signal Corps. The moment a world-renowned statesman wrinkled his nose to utter those famous words, 'Gentlemen do not read others' mail', they got about doing exactly that without a twinge of conscience. Their ability to pick out gibberish from an overused electromagnetic spectrum and get to understand it, is legendary. They listen to other people's *tete-a-tetes* without permission and have been doing so ever since modern conveniences came into being. The fifth dimension of war (space being the sixth), is given over entirely to them for their use -Electronic Warfare.

They have long passed the stage when they would worry about providing efficient communications only. That is commonplace for them even if the equipment looked as if it had been exhumed from JC Bose's first laboratory. Today of course-it is a different matter.

We can keep increasing this list and never finish. The Indian Army, as often the foreign media sometimes churlishly say, is 'mammoth. But we are barely managing our affairs.



Dr.RAJA RAMANNA' A DOYEN AMONG SCIENTISTS

1. He was a most approachable to trainee scientists-youngsters who would become nuclear scientists.
2. He was erudite and delightful to listen. He could cut the pretentious to size, compliment the deserving and point out areas for further study.
3. He hated the slide-rule engineering and craved for originality and creativity.
4. He took steps to set up the Atomic Energy Regulation Board, and gave priority to enforce radiation protection provisions among medical and industrial uses of radiation. He strove to make medical x-ray installations safe.
5. He was intensely patriotic. He spurned greener pastures and responded to the call of Dr.Bhabha and made laudable contributions to the growth of S & T in the country.
6. He was the mentor of India's first nuclear blast at Pokhran in 1974
7. Dr.Ramanna was a pioneer in the growth of physics in India. He put the country on the world nuclear map within a short time after his great theory of Nuclear Fission was established between 1965 and 1968. He was head of the Bhabha Atomic Research Centre, the member and chairman of the Atomic Energy Commission, Secretary of the Dept. of Atomic energy, Scientific advisor to the Defence minister and M.O.S. for Defence (1990). He was the founder



- of National Institute of Advanced studies in Bangalore.
8. Dr.Raja Ramanna is being described as a great humanist devoted to the welfare of mankind through application of science. He has inspired 1000's of our young men and woman to take up science as their vocation. He is one of the makers of modern India. He was an outstanding scientist and a man of thought and of wide literary and philosophical interests and social sympathies.
 9. He synthesised Western thought and Technology with Indian Philosophy, society and developmental needs. He was keen on indigenous development of science and technology and the resultant applications. He had the ability to look at problems rationally, scientific, technical and managerial.
 10. In the 50s, the challenge of doing high quality science and developing advanced nuclear technologies was daunting, given the poverty of the

- country and lack of expertise. But Dr. Ramanna was never intimidated by this challenge. He believed in choosing the right people, encouraging and supporting them to perform, and cutting down bureaucratic delays and unnecessary rules and regulations in administering science. His science policies were directed towards encouraging creativity in order to make advances in technology at the most sophisticated level. To develop the skilled manpower required for this task, he, with Homi Bhabha, started the BARC Training School, in which every year 200 scientists and engineers were recruited, tutored for a year, and then absorbed into the laboratories and in projects. This was started in 1957, and is still continuing, and much of the strength of the Department derives from this seed that Dr. Ramanna planted.
11. Proud legacy
Out of the uncertain beginnings in the 1950s, if we have today achieved the status of a “developed country” in nuclear science and technology, it is in large measure a consequence of Dr. Ramanna’s ideals, policies and efforts. He certainly leaves behind the proud legacy of a magnificent edifice of scientific and technological achievements and attainments particularly towards the country’s energy and national security. But perhaps the even more important legacy is his uncompromising belief in intellectual clarity and rational thinking to every facet of life.
 12. He was a great soul who always thought of the country, how to revive this ancient civilization, make it economically viable and scientifically and technologically self-generating.
 13. Dr. Ramanna made the Reactor Group work on the 500 MW high-flux research indigenous effort in three years.
 14. Dr. Ramanna was convinced that India’s geo-strategic interest could be secured only by India becoming a nuclear weapon power. The threatened economic sanctions by the West and the collusion of Pakistan with China in producing atomic weapons were complicating the issue.
 15. By the end of the 1980’s became evident that Pakistan had a few nuclear weapons in its basement. India’s response was to continue the policy of ambivalence but with a high degree of preparedness. When Dr. Ramanna retired from the AEC in early 1987, he had made sure that his principal associates had moved ahead substantially on the weaponisation programme.
 16. India had to respond beyond routinely telling the country that its security would be ensured under all circumstances. By the middle 1990’s the then P.M. reportedly gave clearance to carry out a weapon test and preparations began. However the U.S. pressure on the then PM resulted in his countermanding the earlier approval.
- The PM who came later took the firm decision to go ahead with Pokhran II test in May 1998. The Indian economy had in the mean time grown robust enough to withstand the economic sanction that the US and its allies imposed on India.

Contrary to the fears in some sections of Indian opinion, relations with the US actually improved after India became overtly nuclear. India with a nuclear arsenal is better able to support universal nuclear disarmament, which continues to be India's goal.

17. The legacy of Dr.Raja Ramanna is that over half-a century of his association with the Atomic energy programme, he helped build up a large pool of scientists and technologists who could take on new and challenging problems in nuclear science and technology to

address the country's needs of energy and National security.

18. Dr.Raja Ramanna was a mentor, guide and teacher to persons of Dr.A.P.J.Abdul Kalam's calibre. He was a towering and multi-faceted personality. He was always keen to contribute to the National Development with a sense of mission. To the S&T community Dr.Raja Ramanna was always a source of inspiration and a guide.

(Culled from tributes by Dr.H.N.Sethna, Dr.P.K.Iyengar and Dr.M.R.Srinivasan all former Chairmen of A.E.C., Dr.A.P.J.Abdul Kalam and Dr.G.Parthasarathy, Senior Atomic Scientist).



INDIA TO LAUNCH SEVEN SATELLITES

WITH the Department Of Space (DoS) planning to launch seven satellites under the new INSAT-4 series by 2007, Indian communication satellite system is expected to get a major boost in the coming years.

The DoS report for 2001-02 says the satellites in the new configuration will help in increasing the INSAT transponders in various bands to 251. the Indian National Satellite System (INSAT) is one of the largest domestic communication satellite systems in the Asia-Pacific region, with five satellites—INSAT-2C, INSAT-2DT, INSAT-

2E, INSAT-3B and INSAT-3C—in operation.

As for other space projects, GSAT-2, which would be launched by the second developmental test flight of the Geo-Synchronous Satellite Launch Vehicle, has undergone completion of assembly of the flight structure.

GSAT-3 and GSAT-4 are also under planning. One of these satellites is proposed to carry Ka-band regenerative transponders and a large unfurlable antenna, besides other new technologies.



Divya Astra exercise was held of Mahajan Ranges near Surtgarh in Rajasthan to demonstrate the Indian Army's fire power.

INDIGENOUS CRYOGENIC ENGINE TO POWER NEXT FLIGHT OF GSLV

An indigenously crafted cryogenic engine will power the next flight of the Geo-synchronous Satellite Launch Vehicle (GSLV), scheduled for February or March next year (2005), the Chairman of the Indian Space Research Organisation (ISRO), G.Madhavn Nair, said.

The cryogenic engine, to be used for the third stage of the GSLV, has been tested for 6000 seconds of operation and is fully qualified. The launch would take place possibly from the new launch-pad being built at Sriharikota, the chairman told a 'Meet the press programme'.

Rocket parts

Mr.Nair said the relaxation of import restrictions on rocket parts and other space technology items by the United States would help India get quality parts at cheaper rates. The country is importing about \$200 millions worth of items from the US and about \$100 million worth of items from Europe. Now, the imports from the US could go up by \$100 millions.

He said that the ISRO's immediate projects included the launching of INSAT 4A and INSAT 4B satellites. The 3.7 tonne INSAT

4A would be launched shortly from Kourou in French Guiana. Other plans included launching of CARTOSAT in the Indian Remote Sensing Satellite series from Sriharikota. This satellite would be able to take stereoscopic pictures needed for mapping of the terrain. As the telemedicine projects has been successful, launching of thematic satellite dedicated to medical purposes would also have to be considered.

Virtual classrooms

He said that the EDUSAT would become operational in four weeks. About 1000 terminal stations would be set up throughout India shortly to receive signals from the satellite in interactive mode. This would facilitate virtual classrooms that enable students to interact with the teachers. The number of terminals would be increased to 10,000 later. Mr.Nair said that the Rs.350 crore Chandrayan project was not a costly one. The amount came to only 0.5 per cent of the ISRO's budge.

The technologically challenging project would enable the ISRO to do mapping of the lunar surface and undertake several scientific quests.

(The Hindu)



India has emerged as the third largest producer of arms among developing nations, according to a recent report presented to the US Congress. China and the United Arab Emirates were the top two producers of arms over the last four years.

SKY IS THE LIMIT

India will be launching a GSLV with indigenously designed cryogenic engine, next year (2005), according to N.Vedachalam, director of the Liquid Propulsion Planning Centre of ISRO.

India had, by launching Edu-sat September 2004, proved its major role in the development of science and technology.

India had so far launched 11 satellites and 10 of them had succeeded totally. The recent Edusat satellite had been placed in an elliptical orbit, 36,000 km above earth, with meticulous precision.

He said that the directions of winds, 20 km above the earth, vary and this may lead to some hazards while launching satellites. The ISRO launching centre at Sriharikota had been working on this problem for the past 40 years and it had recorded data about the velocity of winds, their direction and other factors. It was because of this data that the Edusat was launched successfully.

The satellites launched earlier were capable of transmitting images only during the day.

Now it has been planned to send a satellite fitted with radars which could send perfect photographs even at night. Research was now on to produce the radar, camera, films and other equipment needed for this purpose at the Ahmedabad and Bangalore space research centres and at Vikram Sarabai Centre in Thiruvananthapuram, he said.

Satellites fitted with these equipment would be launched within the next two years. As regards the indigenous cryogenic engine, he said the planning process is on at the space research centres in Thiruvananthapuram and Mahendragiri.

Vedachalam said that UTMS liquid is used as propellant for rocket engines. This is highly combustible and therefore, it has been decided to develop a fuel comprising kerosene and liquid oxygen. (TNIE)



“Avatar”

India unveils space plane—Avatar: Indian scientists have designed a reusable space plane—Avatar—which can launch satellites of a minimal cost and take tourists on a ride to space.

It was unveiled on July 11, 2001 in the US by former chairman of Bharat Dynamics Limited, retired Air Commodore Raghavan Gopalaswami, the brain behind the low-key project funded by the Defence Research Development Organisation.

Avatar’s design—which can be launched 100 times and produces its own fuel in flight—has been patented in India.

A space trip on board Avatar would cost a fraction of the 20 million dollar that a US businessman Denis Tito paid for a visit to the international space station in May 2001.

DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION- ACHIEVEMENTS

The Place – An emerging ‘developed nation’ – India

The Vision – To make India self reliant in Defence Technologies

The Path – The Defence Research and Development Organisation (DRDO)

The Genesis – Set up in 1948, originally as the Defence Science Organisation, with a few basic science laboratories, DRDO came into its present form on 01, Jan. 1958.

The Expertise.... – DRDO is actively engaged in design and development work in state-of-the-art technologies in the frontier



SAMARTHA BHARATA

areas of Aeronautics and Avionics, Armament, Combat Vehicles and Engineering, Electronics Communication and Computer Systems, Missiles, Naval Systems and Materials and Life Sciences.

The Achievements : A few of the feathers in the cap

Successfully developed state-of-the-art systems: Light Combat Aircraft-Tejas; Missiles-Agni, Prithvi, Nag, Brah Mos; Main battle Tank – Arjun; Multi barrel Rocket launcher – Pinaka; Multi – Hop Bridging Sytem – Sarvatra; Radars – Indira, Rajendra and BFSR; Pilotless Target Aircraft-Lakshya; Sonars – Humsa and Mihir; Torpedoes and Naval Mines; Wargames – Shatranj, Manthan.

Success stores also in: Robotics and Artificial Intelligence; materials; Metallurgy; Food Preservation; High Altitude Agriculture; Avalanche Prediction and Control; Camouflage; Physiology and Psychology.

I COMBAT VEHICLES

MBT Arjun : A state-of-the-art battle tank with a high performance engine developing 1500 hp and flexible hydro-pneumatic suspension. It's fast and accurate target acquisition ensures excellent first-hit probability. Indigenously developed 'KANCHAN' composite armour provides enhanced protection.

II COMBAT ENGINEERING

1. Sarvatra - A world class multi-hop bridging system to overcome obstacles of varied nature upto a width of 100m. This state-of-the-art trestle-cum-span bridge of class MLC-70 can be launched and recovered from either side of the obstacle.
2. Armament - Multi-Barrel Rocket System Pinaka - Area weapon system to augment the existing artillery beyond 30 km range. A battery of 6 launchers can neutralise a target area of 700 x 500 m.

5.56 mm Indian Small Arms System

(INSAS)

The INSAS family consists of 5.56 mm Rifle and LMG in fixed and foldable butt versions, both firing the same ammunition. Salient features are its light weight, low recoil energy and commonality of components and such assemblies.

III LIFE SCIENCES

Rations for Services - Developed to meet nutritional needs of troops operating in far flung inhospitable terrain under hostile weather conditions.

Compo Pack Ration

Easy to prepare high energy packed meals for soldiers deployed in operational situations, Designed to meet short sustenance needs.

Meals-ready-to-eat(MRE) and Convenient Food Mixes

Pre-cooked wholesome processed foods for quick preparation.

NBC Clothing and Equipment

To provide protection in Nuclear (fallout), chemical or biological contamination created by the adversary. Consists of a number of

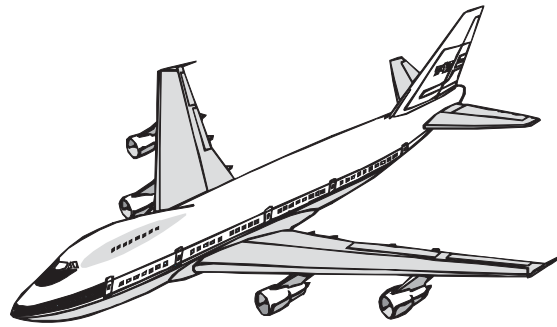
items for detection, protection and decontamination. A few items on display are;

- Radiac Personal Locket Dosimeter : Wrist dosimeter for measuring gamma and neutron cumulative dose.
- Permeable Suit with NBC Mask : -Provides protection against toxic vapours, aerosol and droplets – 3 layered suit.
- Respirator : Provides protection against toxic gases and vapour, smoke, radioactive dust and bacteria.
- Extreme Cold Weather / Glacier Clothing : DRDO has developed special clothing for troops operating in extreme cold, high altitudes and glacial areas. These are made of multi layers of carefully chosen material and are modular in design
- Following items have been developed for use in extreme cold weather conditions:
 - Under Vest and Under pant
 - Jacket and Trouser ECW
 - Socks Lycra, Gloves ECW, Cap Glacier
 - Sleeping Bag ECW, Ruck-Sack
- Indigenous Dental Implants : Cost effective indigenous titanium dental implants and surgical kits have been successfully developed. They can be fabricated to suit individual needs. This technology has been transferred to the industry for volume production.

IV Aero

- Tejas : TEJAS is the world's smallest, lightweight, multi-role combat aircraft designed to meet the stringent demands of Indian Air Force, as its frontline multi-mission single seater tactical aircraft. TEJAS integrates modern concepts and the state-of-the-art technologies like Fly-by-Wire Flight Control System, Multi-Mode Radar, Advanced Composite Material for structures and a Flat Rated Engine.

- **Nishant** : Nishant is a pusher propeller driven Unmanned Aerial Vehicle (UAV), launched from a hydro-pneumatic rail launcher. It has been developed for battlefield surveillance and reconnaissance. Carrying electro-optic payload, it has an endurance of over 4 hrs.



V Missiles

- **Agni** : Agni II-Surface-to-Surface, Intermediate Range Ballistic Missile (IRBM), is a 2-stage solid propellant missile with a range in excess of 2000 kms. Armed with state-of-the-art technologies in control and guidance, re-entry, multi-staging and communication interface, Agni II confers on operational capability to deliver a variety of payloads on targets which are, at present, beyond the range of combat aircraft.

- **Nag** : Nag is a third generation anti-tank missile system with “fire and forget” and “top attack” capabilities. The State-of-the-art IIR (Imaging Infra Red) homing guidance system has lock-on-before-launch (LOBL) capability for a day and night operation.

- **Prithvi** : A tactical Surface-to-Surface Missile System, Prithvi is a battlefield support weapon for the Army with a range of 150 km, and a 1 tonne warhead. In its versions for the navy and airforce, it has a range of 250 km with 500-kg warheads.

Brah Mos

- A world-class supersonic anti-ship cruise missile with a maximum range of 300 kms.
- Can be launched from multiple platforms Land, Sea, Sub-Sea and Air based.
- Capable of engaging shore based radio-contrast targets.

VI Naval

Advanced Light Weight Torpedo

- Lightweight State-of-the-art Torpedo used in anti submarine warfare.
- Can be launched from ships as well as helicopters.
- Homes-on to the target based on the sonar signals received. It is equipped with intelligent electronics to differentiate between actual and false targets. In-built logic and guidance and control schemes enable it to accurately attack the target.

Mihir

- Used with helicopters for detection of underwater targets.
- Comprises of a dunking sonar and four-channel sonobuoy processor.
- Information about the target is relayed to the mothership or submarine for firing of a torpedo on the target.

VI ELECTRONICS

Battle Field Surveillance Radar (Short Range)

- Battery powered man-portable surveillance radar for use in the battlefield.
- Benchmarked against some of the best in the world, its range of detection is:
 - Crawling man - 500 mtrs
 - Single/Group of Walking Men - 2-4 kms
 - Moving light/combat vehicle - 5-10 km
 - Low flying helicopters - 6 km

3-D Medium Range Surveillance Radar

- A 3-dimensional, medium range radar, capable of detecting and tracking multiple aerial targets (aircrafts.)
- Can track 150 targets simultaneously in Track While Scan (TWS) mode.
- Detection range more than 120 kms at 15 rpm and 150 kms at 7.5 rpm.
- 360° azimuth and 20° elevation coverage

VII Technologies**MMIC**

A facility for design, fabrication, assembly, testing and quality assurance of Gallium Arsenide based Monolithic Microwave Integrated Circuits (MMIC) to Military Standards has been established.

VLSI

Core competence to designing and realising Application Specific Integrated circuits (ASIC) has been achieved. A facility for

indigenously manufacturing MIL-qualified devices has been established recently.

EW Systems

Under the programme for development of Integrated Electronic Warfare capabilities, ESM and ECM System are being developed for the Indian Army as well as the Indian Navy. This capability would enable effective use of the e.m. spectrum by own forces while denying its use to the adversary.

Digital Radio Frequency memory (DRFM) DRFM is used in present day radar ECM systems to electronically counter enemy radar signals. It enables digital storage of down converted enemy radar signals, introduce delay and retransmit after up conversion, to jam enemy radar. It is capable of introducing range advancement, range delay and false target generation. Very few countries have this capability.

(D.R.D.O. Handout)



MAGNA CARTA ON NATIONAL SECURITY RELEASED

The group of Ministers on security have released the report on national security system. The report said that the Centre would set up a strategic command to manage its nuclear forces, tighten border management and establish a defence intelligence agency.

Central to the revamp is the integration of the Defence Service Headquarters with the Ministry of Defence. India is the only country where the army, navy and air force headquarters are treated as attached offices of the Ministry of Defence, and not an integral part of it.

While nuclear forces will be ‘unambiguously’ under civil control, a new Chief of defence Staff will exercise administrative control and be the single-point military advisor to the government. The Chief of defence Staff (CDS) will be a four-star officer, drawn from one of the three armed forces. Currently, the army, air force and navy are each headed by separate chiefs who report to a civil Defence Minister.

A new border intelligence agency, and a new defence procurement agency to streamline arms-buying procedures are the other recommendations of the report.

INDIA'S SPACE PROGRAMME; POISED FOR A QUANTUM JUMP

In the latest Annual Report of the Indian Space Department the space research achievements of the country have been hailed as under:

“Even as India entered the new Millennium, the space programme in the country has matured to a status where the space has become an important element of national infrastructure, especially in the areas of communication, broadcasting, meteorology, disaster management and resources monitoring. India is recognised in the world over for its unique application-driven space programme. The plans to further enhance and improve the space services by launching follow-on satellites in the INSAT and IRS series in the coming years, and to enhance launch capability to place INSAT class of satellites in orbit through GSLV, the Indian space programme is poised to play a significant role in the country's march towards the progress in the new Millennium.”

India is a pioneering country in the developing world to have outstanding achievements in space research. The application-driven space programme of the country has earned the applause of the entire world. INSAT series of satellites have brought significant changes in the fields of communications, broadcasting, radio-network and disaster management. At present more than 400 earth stations, located in various parts of the country are linked to the INSAT series of satellites. INSAT-3 launch has significantly augmented the

INSAT system-capability in the country. This system is also instrumental in providing required metrological cover to the entire country.

Indian space research programme is now poised to achieve new heights. Successful launch of booster Geosynchronous Sattellite Launch Vehicle (GSLV) in the coming time would be a great achievement by India in the space research. GSLV class space booster technology is available only with the USA, Russia, China, Japan and the European Space Agency. This capability would enable the country to do away with the need to hire commercial rocket launchers.

Indian space research in the field of development of cryogenic engines is also at the threshold of achieving a unique success. The fully cryogenic stage engine was expected to be developed by the Indian scientists by the year 2003. Development of this capability by India would bring it at par with the USA, Russia, China and a few European countries.

Yet another achievement awaiting the Indian scientists is the impending launch of Microgravity Recoverable Satellite (MARS). Only a few countries in the world, like the USA, Russia, China and Japan, have been able to develop this capability so far. This would enable India to develop a reusable and recoverable satellite. Successful experiments at the Bangalore-based ISRO Satellite Centre have paved the way for achieving this unique success.

The latest conflict with Pakistan in the Kargil area during the year 1999 had exposed India's weakness in the field of intelligence collection, necessitating the need for a high performance earth imaging satellite. The space scientists of the country have thus started working to develop a CARTOSAT satellite, providing the facilities of stereo-imaging for generation of digital terrain model. Expected to be launched in a year's time, CARTOSAT satellite would greatly assist the Indian defence forces to plan their

warfare strategy. It would also help in preventing Kargil type of situation in future. This would essentially be a remote sensing satellite in the IRS series and would appreciably enhance India's military capabilities. Information gathered from such satellites would also help the country in collecting agricultural data, flood mapping, drought monitoring and water resource management, in addition to several other advantages.

(The Competition Master)



AGNI – 1

The successful test-launch of the surface-to-surface missile Agni-1, on January 25, 2002, was significant in terms of bridging the felt gap between the *Prithvi-II* missile, which has a range of 250 km, and the Agni-II, which can strike targets 2,500 km away—Agni has a range of 700 km and can carry nuclear warheads, thus giving teeth to India's deterrence posture. The January 25 launch from a road mobile launcher at the Interim Test Range on Wheelers' Island, Chandipur-on-Sea, Orissa, carried a one-tonne dummy payload. Defence experts do not feel shy of admitting that Agni-is Pakistan-specific.

The Agni variant is part of India's Integrated Guided Missile Development Programme (IGMDP). With a sea-based deterrent not on the horizon yet, the present launch demonstrates that India wants to stabilise its nuclear deterrent on the basis of land-based capability.

Defence analysts opine that the test reflects India's move from a 'minimum credible deterrent' as the leitmotif of its no-first-use policy to 'credible minimum deterrent' in its quest for nuclear credibility.



Ayni, located near the capital of Tajikistan, is India's first-ever military base in a foreign country—past Sri Lanka.

NATIONAL SECURITY

The question: who lives if India dies is neither hypothetical nor hallucinatory. Economically, the world may have become a 'global village' but politically, the world is still dotted with nation-States demarcated by distinct as well as vague boundaries, giving rise to occasional skirmishes and subtle but sinister moves to alter the balance of power. If the paradigms of national security are determined by well-defined or natural dividers like rivers, mountains or seas, even then the need to be ever vigilant all the time should remain both paramount and predominant in the national interest-cum-security. A snake in the grass can prove as fatal as the enemy sitting across the border with his lethal gun aimed at the target. In both situations, complacency can lead to very unsavoury consequences.

No doubt, the proverb: Those who sweat more in times of peace, lose less blood in times of war is tellingly in touch and tune with the state of preparedness, which is the *sine qua non* of national security. After the 1962 debacle, the then President of the Republic, Dr.S.Radhakrishnan, had warned the nation against being caught napping again. His candid counsel and words of wisdom good by us in good stead and we were able to face the 1965 aggression with dogged determination, resulting in a decisive defeat of the enemy. Now, after the betrayal writ large in the blood of our valiant soldiers and officers on the most inhospitable and tortuous heights of Kargil, President K.R.Narayanan minced no words in asking the people to be united in the face of 'more Kargils' and mooted a hike in the defence



budget to equip the armed forces with the latest weapons and force multipliers. Having neighbours not very friendly disposed we cannot afford to 'lower our guard'.

With narco-terrorism, coupled with religious fundamentalism, having spread its tantalizing tentacles across the country, the contours and contents of national security have undergone a complete metamorphosis over the years. The continuing proxy war unleashed in different parts of the country posed threats to our national security. It can brook no laxity on anyone's part.

With the strengthening and modernising of intelligence set-up, the timely detection and defusing of time-bombs, RDX, etc have gone a long way in saving many a life and avert the breakout of communal tensions and tempers. These measures, in a plural polity like India, have helped to preserve our social fabric. The way we have withstood these challenges, coming from outside and also raising their ugly heads at home, testifies the inherent strength of our perceptions, that are national in character and international in vision and vigour.

Pakistan's misadventure in Kargil has obviously made it mandatory for us to look afresh at the defence allocation because less than fifteen per cent of India's armaments

are contemporary in nature, as against a world average of thirty per cent. In fact, the Indian Army today spends 85 per cent of its annual budget just to maintain its existing force levels, which leaves almost next to nothing for modernisation. Any hike in defence spending will come not a minute too soon to arrest the declining teeth-to-tail ratio of India's 1.14 million strong military. The draft nuclear doctrine, which spells out the minimum nuclear deterrent, robust command and control systems and the broad thrust on nuclear forces, even while reiterating its strict adherence to the objective of 'no-first-use' and non-use against non-nuclear weapon States, is the most cogent and clear document of our intentions and, if need be, the possible line of action in the national interest and its security. The draft further delineates the concept that shall encompass "sufficient survivable and operationally

prepared nuclear forces; effective intelligence and early warning capabilities; comprehensive planning and training for operations in line with the strategy and the will to employ nuclear forces and weapons".

The concept and concretisation of National Security depend upon the stamina and strength of the armed forces and the Nation's economic resilience and political stability. If any one of the pillars becomes weak or vulnerable, the hawks and vultures around us can pounce and pound us with all their ruthlessness. Our history, unfortunately, is replete with instances when our own distrust difference and disunity played havoc with our national pride. The invaders in all forms and formulations found the land fertile to execute their nefarious designs and dastardly deeds. If there is any one lesson that Indian history has to teach us it is 'United we stand and divided we fall'. [The Competition Master]



INDIAN ARMY

The Indian Army is today (1999) composed of three armoured divisions, nine independent armoured brigades and 29 infantry divisions. (Both plains infantry divisions and mountain divisions counted).

INDIAN NAVY

Indian Navy has (1999) 26 corvettes (Smaller sized ships) 19 frigates 13 submarines, 38 OPV minesweeper-countermines ship/survey vessels, five destroyers and two air craft carrier.

AIR FORCE

The Indian Air force has focussed like its sister services, to a significant extent on acquiring a larger and technologically more advanced arsenal. There are (1999) four MIG-29 squadrons, three squadrons of Mirage, five squadrons of Jaguar and four Su-30 Mks.

The air force also owns 22 squadrons of MIG21, six squadrons of MIG 27 and two squadrons of MIG 23 BN, six squadrons of AN32, and 45 numbers Ilyushin 76s. More MIG 29 Mirage 2000s, and Su 30 MKS are being indirected. (From the Army Bulletins)

GSLV LAUNCHES INDIA INTO ELITE CLUB

On April 18, 2001, India's first developmental flight of Geosynchronous Scientific launch Vehicle (GSLV-D1) blasted off successfully from the coastal town of Sriharikota in Andhra Pradesh.

Launching a massive 300 tonne plus, 40 metre high rocket tens of thousands of kms into space, and injecting a satellite with such precision that it will go around the earth at the same rate as the earth, and hence stay overhead, are no mean tasks. India becomes one of the five countries that now have the capacity to do this. This means access to a launch vehicle market that is estimated at \$3 billion per annum. Currently it also means the ability to put up Indian satellites of the INSAT class of a much cheaper cost. Currently, such satellites that provide transponders for communications and TV channels, are launched by Aerospace, the European consortium, or the Russians.

While civilian uses are the ones that are most talked about, India needs an autonomous space launch capability most for military reasons, not for offensive purposes which are banned, but for military uses. Beyond surveillance and communications, the GSIV-1 and its predecessor PSLV also signal India's ability to build long-range intercontinental missiles.

The first experimental payload aboard the GSLV-D1 was the GSAT-1 which was put in a geosynchronous orbit. It has three C-band transponders, and two S-band transponders to help in digital audio broadcasting and other communications.

The Geosynchronous Satellite Launch Vehicle (GSLV) project was initiated in 1990 with the objective of acquiring launch capability for Geosynchronous satellites. The first flight test, GSLV-D1, is intended to validate the various systems of the vehicle in an actual flight. Though each of the subsystems has been tested on ground, it is only through a few developmental flight tests that the launch vehicle, as a whole, and all the associated ground systems can be validated. Several performance parameters of propulsion stages, avionics, control and guidance system, the stage and spacecraft separation system, are monitored in flight. The design margins are more realistically estimated from the in-flight test of the vehicle.

GSLV is the most technologically challenging mission undertaken so far under the Indian space programme, it is the culmination of efforts of a large number of scientist, engineers and technicians, over the last ten years.



H A L - HINDUSTAN AERONAUTICS LIMITED

The history of the Indian Aircraft Industry can be traced to the founding of Hindustan Aircraft Limited at Bangalore in December 1940 in association with the erstwhile princely State of Mysore and late Shri Seth Walchand Hirachand, an Industrialist of extra-ordinary vision. Govt. of India became one of its shareholders in March 1941 and took over the management in 1942. Hindustan Aircraft Limited was merged with Aeronautics India Limited and Aircraft Manufacturing Depot, Kanpur to form Hindustan Aeronautics Limited (HAL) on 01st October 1964.

Today HAL has got 16 production units and 9 research and design centres spread out in seven different locations in India. Its product track record consists of 12 types of aircraft from in house R & D and 13 types by license production. HAL has so far produced over 3300 aircraft, 3400 Aeroengines and overhauled over 7700 aircraft and 26000 engines.

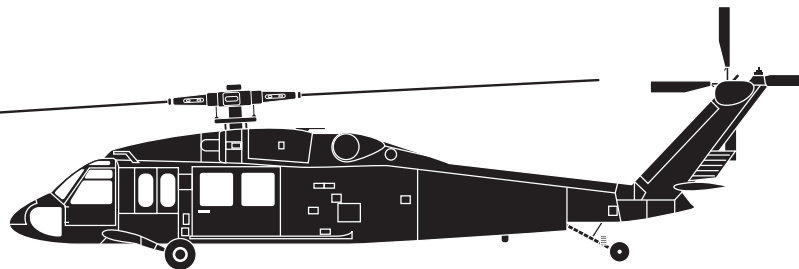
HAL has engaged & succeeded in number of R & D programs for both the military and civil aviation sectors. Substantial progress has been made in the current projects like Dhruv -Advanced Light Helicopter (ALH), Tejas-Light Combat Aircraft (LCA), Intermediate Jet Trainer (IJT) and various military and civil upgrades. The deliveries of Dhruv were effected to Indian Army, Navy, Air Force and Coast



Guard in March 2002, in its first year of production which is a unique achievement.

HAL has played a significant role for India's space programs in the manufacturing of satellite launch vehicles like PSLV (Polar Satellite Launch Vehicle), GSLV (Geo Stationary Launch Vehicle), IRS (Indian Remote Satellite) & INSAT (Indian National Satellite).

HAL has also two joint venture companies, BAeHAL Software Limited and Indo-Russian Aviation Limited (IRAL). Apart from the two, other major diversification projects are Industrial Marine Gas turbine and Airport Services. Several co-production and joint Ventures with international participation are under consideration.



HAL's supplies / services are mainly to Indian Defence Services, Coast Guard and Border Security Force. Transport aircraft and Helicopters have also been supplied to Airlines as well as State Governments of India. The Company has also achieved a foothold in export in more than 30 countries, having demonstrated its quality and price competitiveness.

HAL, has won several International & National Awards for achievements in R&D, Technology, managerial performance, exports, energy conservation, quality and fulfillment of social responsibilities. M/S Global Rating, United Kingdom in conjunction with The International Information and Marketing Center (IIMC) has awarded the "INTERNATIONAL

GOLD MEDAL AWARD" AT THE INTERNATIONAL SUMMIT (GLOBAL RATING LEADERS 2003) LONDON, UK to M/s. Hindustan Aeronautics Limited for Corporate Achievement in Quality and Efficiency. HAL was also presented the INTERNATIONAL "ARCH OF EUROPE" AWARD IN GOLD CATEGORY in recognition for its commitment to Quality, Leadership, technology & Innovation. At National level, HAL won the top award instituted- by SCOPE (Standing Conference of Public Enterprises) -The "GOLD TROPHY" for excellence in Public Sector Management.

The Company scaled new heights in the financial year 2002-2003 with a turn over of Rs. 3120 Crores and export of Rs. 103.89 Crores. **(HAL-WEB SITE)**



INDIA BUYS EIGHT RADARS WORTH \$ 146M FROM US

India has concluded a landmark defence deal with the United States for the purchase of eight gun locating radars, valued at \$ 146 million, in what both sides say presages a growing military relationship between the two countries.

Under the terms of the deal, the US will supply eight counter-battery AN/TPQ-37 Firefinder radar systems, plus advanced communications and support equipment, training and logistics services.

The radar sets are designed to pinpoint long-range mortars, artillery and rocket launchers after tracking a shell for only a few seconds. The system then relays precise information for counter-fire, tracking correcting and improving the counter-barrage as it is under way.

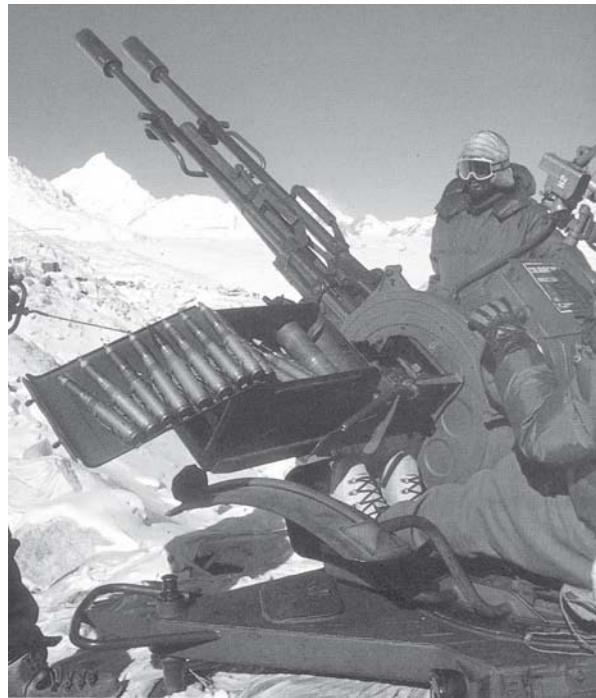
Pakistan already has the same equipment and the Indian bid to buy the radar was approved relatively quickly because it was considered force-equaliser.



In the biggest-ever fighter manoeuvres, India and the United States held a ten-day joint air exercises over the Gwalior skies in February 2004, pitting the IAF against one of the most hi-tech forces in the world. The combat exercises were codenamed 'Cope India 04'.

ARJUN

1. Arjun, India's indigenously built Main-Battle-Tank (MBT) took more than 30 years to conceive, design, build and test.
2. It was built at the Heavy Vehicles Factory (HVF) at Avadi near Chennai.
3. The 43 regiment will be the first to have Indian MBTs.
4. Weapons systems of this kind take a generation to build.
5. With this, India joins a select group of Nations, capable of designing and developing such a complex weapons system. Building Arjun is described as a significant step forward in the quest of building a self-reliant and self-sufficient India, in defence preparedness.
6. The 58.5 tonne tank was designed and developed by the Combat Vehicles Research and Development Establishment, Avadi in association with DRDO resources around the country.
7. At present 50% of Arjun's components are imported. The Army and DRDO hope to cut this down to 20%.
8. The 'Arjun' was a case of the country show-casing its capabilities in science and technology and management.
9. The Army establishment dreams of manufacturing 50 Arjun tanks per year in its Avadi and Medak (AP) facilities.
10. "The M.B.T. Arjun is a state-of-the-art Armored Fighting Vehicle with superior fire power, high-mobility and excellent protections. This is one of the major technological success of DRDO" says Dr.A.P.J.Abdul Kalam, our President.
11. "If the efforts involved in designing, developing, testing and proving a complex weapon systems are massive, the efforts of transferring the technology for producing it, are even more daunting. DRDO has stood firm in its commitment to the Arjun programme and has excelled in system engineering, making Arjun a home of multi-disciplinary, integrated system. OFB has accomplished the production of Arjun absorbing the latest technology says the Minister of State for Defence.
12. Arjun is a pride on tracks with excellent road and cross country mobility, high degree of manoevrability, and maximum crew comfort.
13. Arjun is a technological force: with day and night fighting capability, excellent first round hit capability, fire on the



move capability and highly mobile and agile weapon platform.

14. “An armoured fighting vehicle is an extremely complicated weapon platform requiring perspicacious integration of many hi-tech systems and sub-systems. The landmark realization of the Arjun mission is therefore an eloquent testimony of the vision, skills and persistence of our defence scientists and engineers” says the Chief of our Army Staff.
15. “The task of designing and integrating a complex and technologically state-of-the-art weapon system is colossal

and challenging. The determination and resolve exhibited by these laboratories throughout the programme deserves our appreciation” says Dr.V.K.Aatre, Scientific Adviser, To Defence Minister Secretary and DG R&D (DRDO), Government of India.

16. “It is a state-of-the art battle tank comparable to the best available in the world. It’s fire power, mobility and protection are one of the best in the world” says The DG OF & Chairman, Ordnance Factory Board, Ministry of Defence, Government of India.



A Remarkable Book

DEFENDING INDIA

Shri Jaswant Singh who has held portfolios such as defence, finance, external affairs in the government of India, and has been the Deputy Chairman of India's planning Commission, has penned a remarkable book on **Defending India**.

In the first chapter, "Strategic Culture", he summarises the causes as to why India continuously faced aggression for the last two millennia. What are the factors that have gone into the building of India's **Strategic Culture**. – the assumptions, symbols, myths, and beliefs held by National leaders that affect their perception of available acceptable strategic options. Strategic Culture is a "nebulous ideational milieu, which limits behavioural choices." The strategic culture of a Nation acts to establish long-lasting strategic preferences by formulating concepts of the role and efficacy of military force in inter-state political affairs. The role of domestic politics in shaping the attitudes of a society toward its military and the political views of the military with regard to its host society are significant. At the same time strategic culture acknowledges the importance of the internal culture that was not determined by the distribution of domestic political power. The problem however with strategic culture tends to lie in its application. In a proper understanding of power, in the ability of a people and society to generate power, thereafter to have the necessary social will and ability for a full and effective employment of that power.

Shri Jaswant Singh examines how India applies these broad criteria. He adds that "to

start with, the essence of Indian civilisational thought engages itself more with the other-worldly than this."

Shri Jaswant Singes then goes on to quote **in extenso** Shri Aurobindo the great Indian philosopher and sage:-

"India's central conception is that of the Eternal, the spirit, involved and imminent in it and evolving on the material plane by rebirth of the individual... till in mental man it enters the world of ideas and realm of conscious morality – Dharma. India's social system is built upon this conception; her philosophy formulates it; her religion is an aspiration to the spiritual consciousness and its fruits; her art and literature have the same upward look; her whole Dharma of law of being is founded upon it. It is her founding of life upon this exalted conception and her urge towards the spiritual and the eternal that constitute the distinct value of her civilization."

Dr. Sarvepalli Radhakrishnan and many others before and after him, remarked that India through centuries venerated the sage against the statesmen, a learned man instead of a warrior. That is why India has failed to give political expression to her ideals. The importance of wealth and power though theoretically recognized, was not practically realised. India has suffered for this negligence.

'Spiritual unity' says Dr. Radhakrishnan 'is a large and flexible thing and does not insist like the political and external on the centralization and uniformity; rather it lives

diffused in the system and permits readily a great diversity and freedom of life.'

Jaswant Singh adds "Here we touch on the secret of the difficulty."

Myson Weiner bluntly puts it 'The absence of analytical continuity among ancient (Indian) political theorists, the relatively small role of political theory in the dense fabric of Hindu philosophical and religious writings, the historical break in this literature caused by the Muslim invasions, the introduction of European political ideas and institutions in the 19th century all suggest the irrelevance of classical Hindu thought" **(in defending India).**

Shri Jaswant Singh defines his field thus "We thus have a set of criteria against which to examine the entire range of questions.

1) Does India at all possess the needed

attributes?

2) How did they evolve historically through the ages?

3) How has the Indian civilizational end cultural ethos influenced them?

4) How do we rate the existence and effectiveness of Indian state?

5) What are India's own and acquired military concepts? - in brief India's military culture.

6) In the background of Defending India, lie the questions about history, its recording, about geography and territoriality.

7) The events of the British period and Indian Military revolution.

8) The events of the period of Independence transforming social, political and civil-military relations and what these did to the development of a suitable strategic culture.

9) Internally and externally, what were the strategic challenges to an independent India and did the political - administrative-military leadership of this period 1947-97 anticipate,

MANSABDARS AND SILLEDARS

The Moghul Army (Basically an Indian Army) was large. How to command and control such a force? The heart of it was the '*mansabdar*' system. This was both a recognition of social standing and an obligation when called to provide a certain specified number of troops particularly for the cavalry and a right to draw from the imperial treasury. The number of men commanded ranged from twenty upwards.

Mansab really means a rank and what the Mughals did was to recognize the

existing Rajput system of class and tribal levies, transform and adopt them and also give it a monetary ingredient plus lend a certain imperial social cachet.

A commander of cavalry would often bring with him his own retainers, mounted at his expense, though sometimes the trooper provided arms and equipment for himself. A man bringing such a troop on his own horses was a *silledar*.

("Defending India" by Jaswant Singh -Mac Millan India Ltd. Bangalore 1999)

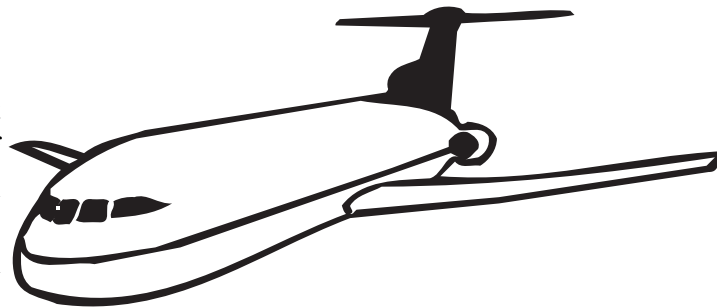
understand and address itself effectively to them? This is our canvas for an enquiry into India's strategic culture.

The Book discusses in detail how India's defences have been neglected for the last twenty centuries and how destiny has presented now our motherland with a fine opportunity to correct the situation.

According to Shri Jaswant Singh, the formidable and daunting tasks confronting the independent Nation at the time of the trauma of partition and at a time with problem of integration of 600 states were: 1) Formulation and enunciation of India's foreign policy 2) Organizing the higher defence and military organizations 3) Approach to the dawning of the age of atomic weaponry 4) Assessment of the dawning of the cold war and India's response 5) Evaluation of the geopolitical realities of the post-colonial Asia, 6) Evolution of India's post-Independent armed forces 7) India and its newly - independent neighbours in South Asia, particularly Pakistan 8) India and China. The chapter on strategic culture discusses the legacy of Nehruvian strategic culture in great detail. The chapter ends in a serious note.

"If Seemingly disproportionate space has been devotee to the legacy of Nehruvian strategic culture, it is not on account of any bias; it is in the very progression of Independent India as a viable state and an examination of the foundations. There alone in the Nehru period that is during the entire stretch of half a century was demonstrated any original thought. Nehru's legacy whether still relevant or not, remains dominant, in

the process providing a kind of continuity to independent India's strategic culture, even if that continuity be of, negative attributes like veneration of the received wisdom, an absence of iconoclastic questioning; a still continuing lack of institutional frame-work for policy formulation; lack of a sense of history and geography; an absence of sufficient commitment to territorial



impregnability, and a tendency to remain static in yesterday's doctrines, even form."

The second chapter of the book titled "**Armed Forces**" lists the processes of evolution of the Indian Army, and the place of **Sikhs** in Indian Army, the **British period**, (the Birth of the British Indian Army) and the **Twentieth century** are discussed.

Discussing **Indianization** of the Army, the author says "It is rather a misnomer, this 'Indianization'. The Indian Army, whether as a force of the East India Company or in the subsequently evolved forms was always almost wholly Indian: in manpower, in recruitment, in habits and in conduct. The number of British was always a small fraction, and that too only officers. There are many reason why the British resisted opening this up until the last, not really till the Second World War. But these reasons need not detain us; they were after all the inevitable consequence of colonialism.

Race, language, religion, amongst other

aspects, separated the British officers from the Indian men. How then did they function? It was through a unique innovation, wholly Indian, born partly of pragmatism but more as a direct descendant of an earlier system; and this was the office known as a Viceroy's Commissioned Officer (VCO). This functionary, now called Junior Commissioned Officer (JCO) (to be distinguished from the much later Indian Commissioned Officer, ICO) was the conduit, the connecting link that bridged the divided. The VCO was directly in charge of a body of troops; he was answerable for their discipline, welfare, leave, complaints, problems at home, even promotion and recognition. Seldom could an ordinary Indian soldier hope to rise having fallen foul of his VCO. And this VCO, conceptually and effectively, was the direct descendant (altered no doubt, but only in progression) of the basic idea of mansabdari and silledari. The British, as they replaced the Mughals, improved upon the inherited mansabdari/silledari systems, adapted them and innovatively discovered the VCO. It is significant that this practice was unique to the Indian Army alone. Neither the Navy nor the Air Force felt the need, ever, having in any case evolved in a staggered time frame. It is both curious and telling that till date this rank continues, not just in India but in the armies of Pakistan and Bangladesh too. In that sense the Indian Army was an Indianized army always, from its inception."

In the next section the book discusses the traumatic events of partition of the country, accompanied by the partition of the armed forces. The Indian Army (in the modern sense) which had taken two and a half centuries to construct was to be dismantled within three weeks!

The army was divided between India and Pakistan in a rough division of 2:1.

Integration of State Forces: The consequences of partition were manifold. For the armed forces, they posed mainly three immediate challenges a) of a physical separation of units on the basis of religion and this went down to company/squadron levels; b) a proper division of the military assets of an undivided India, between the partitioned countries of India and Pakistan and c) thirdly of integrating divided units as also the forces transferring to the union of India from princely states.

The next section **Army in Independent India;** ethos and organization; talks not about the quantitative growth of India's defenders, but about the fundamentals that governed this growth. The origin and growth of Indian Navy and Indian Air Force are studied.

The chapter winds up with a brief discussion of R & D and the R/D institutions.

The third chapter **Independent India's Military operations** lists and discusses India's major military operations (1947-97) and Major peace - keeping operations (1947 - 97)

A sad account is about the military forces being called to intervene in Nagaland, Mizoram, Tripura, Punjab, J & K and Assam. This job is basically a police job and the military forces being invited for the civil job is always a painful turn of events.

Every operation has taught the Armed Forces some lessons which were incorporated in the body structure of the forces, later on.

The Fourth chapter on **Defence Spending and Force structure** is a very practical

analysis coming as it does from an ex-Army officer and later Minister for Defence, Finance and Foreign affairs. If such studies help the GOI to frame a permanent policy-making body and create a permanent non-lapsible fund, the purpose of this painstaking study will be achieved.

Comparison of Indian forces with those of China and Pakistan with reference to the population and G.D.P. of each country shows that allowing for the size and number, China has been spending seven to nine times more than India on its military. Only after 1985, the Indian expenditure could rise to half as that of China but fell to one third in 1990 and to one fourth in mid 90s.

Pakistan also spends a higher percent of its GDP than India on its Armed forces.

The chapter ends with a discussion on the adverse impact of using the Army for internal security.

The Fifth chapter **The Future**, attempts to peep through the uncertainties of the future with the only signposts that are discernible being examples of the past. That is why the way India handled the challenges of the past half-century perhaps gives us a fair idea of assessing how it will respond in the future too. Whereas the earlier incursions into India have been by the land route, colonization of India by the Western countries was carried out of the sea route, emphasizing the importance of the Navy.

The lack or inadequacy of political, military strategic sense by the post-Independent leadership in India comes out in the next phase of discussion.

Shri Jaswant Singh talks of the covert war, the clandestine war India has to face, in the context of such wars India had to contend with in the last 50 years and in the context of Chinese domination throughout.

1) The need and form of a National security council 2) The principle dynamics of economics, in have a strong defensive armed force, 3) The foreign policy of India as part of its security concerns, 4) The role of energy in the security affairs of the Nation, 5) The significance of the Environment, food and water and their impact on the nation's internal and external security 6) The consequences of demography and demographic changes in the security situation of India, 7) The role of intelligence in securing the Nation, 8) The nuclear field, 9) The limited autonomy to be given to the force-heads within their fields etc. are elaborately discussed.

The book as well as K. Subrahmaniam's (the Defence Analyst) introduction plead for institutionalization of India's security policy formulation through the establishment of a National Security Council. Consistency and continuity in Defence Policies will be possible only when the Nation shifts from inspired personal policy to systematized, consistent, institutionalized approach, they say.

A powerful, concerned, systematic, cool-headed yet passionate appeal for the proper Defence-system for India, shines through every page of the book. A must for every patriotic person. (**Defending India - Jaswant Singh Mac Millan Press Ltd - Bangalore 1999**)



INDIAN BRAVERY

Jaswant Singh

Why did the Indians fight for and along with the British? The relationship was not of equals, it was that of the conquering and the conquered. Yet, for well on two and a half centuries, the Indians not only fought with the British, they fought as volunteers—there simply was no conscription, or forced enrolment at any stage. On the contrary, service in the Army, the British Indian Army, that is, was turned into and remained all through the British period, a matter of high honour, conferring great prestige on the volunteer. Why? And why is that not so now in independent India? What did the British do which India is failing to do for itself?

Does a possible, even a half answer lie in what Philip Mason suggests?

What made Indian soldiers give their lives for a flag they could hardly call their own? National pride did not play much part till late in their long history. It was only in the Second World War that it appeared and then only occasionally. When it did, it was a two-edged sword: pride in the regiment, in the

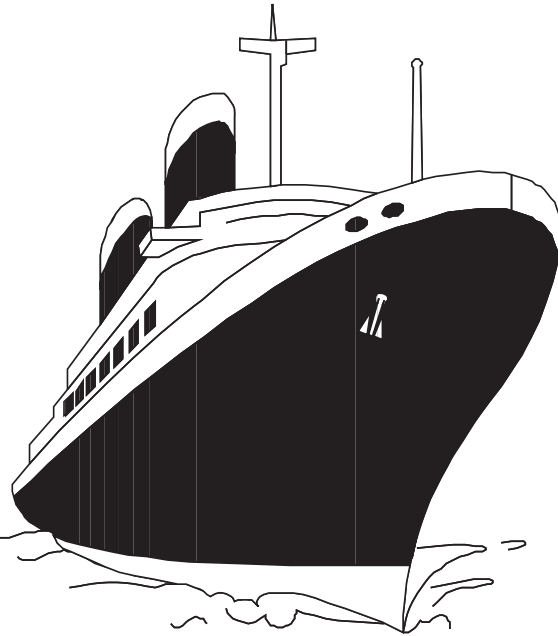
division, yes, that was something on which everyone could agree, but pride in a nation that was not yet a nation produced very mixed feelings. Officers and men could not share it in the same spirit...it explains nothing to say simply that they were “mercenary”. Men may come to the colours for pay but it is not for pay that they earn the Victoria Cross.

And here Mason cites just one amongst many such instances from the glorious annals of the Indian Army.

Take, for example, the affair at Koregaum on New Year’s Day, 1818. Captain Staunton, of the Bombay army at short notice marched with less than 900 men (all Indians) and routed an army of 20000 horses

and 8000 infantry in a 24-hour battle. Their general, wrote after Koregaum of the sepoys’ “most noble devotion and most romantic bravery under pressure of thirst and hunger almost beyond human endurance”. Mason goes on to praise the spirit that animated the unusual army.

(Extracted from ‘Defending India’ by Jaswant Singh-Mac Millan’s India Ltd., Bangalore 1999)



DEFENCE RESEARCH AND DEVELOPMENT

Jaswant Singh

The Defence Research and Development Organization (DRDO) was established in 1958 by amalgamating the Defence Science Organization and some of the technical development establishments. A separate Department of Defence Research and Development was formed in 1980 which operates now through a network of some 50 laboratories/establishments. This Department is engaged in pursuit of self-reliance in critical technologies of relevance to national security. It formulates and executes programmes of scientific research, design and development leading to induction of state-of-the-art weapons, platforms and other equipments required by the armed forces. It functions under the control of the Scientific Adviser to the Raksha Mantri who is also secretary, Defence Research and Development.

The research and development activities of the department cover important demarcated disciplines like aeronautics, missiles, electronics and instrumentation, combat vehicles, engineering system sciences including advanced computing, life sciences including high-altitude agriculture, physiology, food technology and nuclear

medicine and allied sciences. In addition, the Department also assists the Services by rendering technical advice regarding formulation of requirements, evaluation of systems to be acquired, fire and explosive safety and mathematical/statistical analysis of operational problems. The DRDO has registered significant achievements in its various activities. The notable developmental successes of the Department include the surface-to-surface missile, Prithvi, the state-of-the-art main battle tank, Arjun, flight simulators for aircraft, pilotless target aircraft (PTA), balloon barrage system, parallel supercomputers pace-plus, etc. The weapons and ammunition developed by the

DEFENCE ACQUISITION COUNCIL SET UP

In late August, 2001, the government set in place a high-level Defence Acquisition Council (DAC). The Council, to be headed by the Defence Minister, would approve the long-term capital acquisition of the three armed forces, as well as identify and clear weapons purchases and weapons production. The DAC would have under its umbrella, a Defence procurement Board as well as Defence Production board and Development Board.

organization and production agencies include the Indian field gun, INSAS rifle 5.56 mm, charge line mine clearing for safe passage of vehicles in a battle field, illuminating ammunition for high-speed aircraft, naval mines and 105 mm PSAPDS. Multi-

barrel rocket system Pinaka is getting ready for trials by the Army. In the area of electronics and instrumentation, amongst the significant developments are low-level tracking rader Indra I, Indra II, for Army

and instrumentation, amongst the significant developments are low-level tracking reader, secondary surveillance radar, automatic electronic switch, avalanche victim detector, tidex, EW systems, night vision devices and secured telephone (Sectel). Some of the development successes in the area of engineering systems are bridge-layer tank Kartik, military bridging systems, various types of shelter, crash fire tenders and rapid intervention vehicles. In the area of naval systems and materials, the Organization has developed an advanced ship sonar system, marine acoustic research ship, Sagardhwani, underwater anti-fouling paints, torpedoes, naval simulators and jackal steels. Submarine sonar and weapons control system, Panchendriya, is getting ready for harbour / sea trials. The indigenous Light Combat Aircraft (LCA) is in the first flight trial preparation stage. The remotely piloted vehicle, Falcon, has successfully undergone developmental flight trials.

India's Integrated Guided Missile Development Programme (IGMDP) comprises four missile systems. Prithvi, surface-to-surface tactical battlefield missile; Akash, medium-range surface-to-air missile; Trishul, short-range surface-to-air missile; and Nag, third-generation anti-tank missile. Akash and Nag are in advanced stages of



development. This programme includes a development of the intermediate-range ballistic missile, Agni.

The Department has developed and preserved convenience foods for the armed forces. It is vigorously pursuing the goal of technological self-reliance in defence systems through a 10-year national self-reliance mission. State-of-the-art technologies developed for missile programme, LCA and other high technology systems are being channelized to make available bio-medical equipment at a much less cost.

(From "Defending India" Mac Millens India Ltd., Bangalore 1999)

INDIAN AIRFORCE BASE AT TADJIKISTAN

For the first time India has set up a military base – An Indian Air Force base outside its borders, in Tushanbey in Tadjikistan, at a place Barhor 10 km away from Tushanbey. The base is self contained with run ways, control towers and medical facilities. The constructions are about to be completed and the base will become functional by the year end (2004). During the visit of the Indian PM to that country in 2002, that country agreed to extend military cooperation to India.

DEVELOPMENT OF INDIA'S NUCLEAR ENERGY AND WEAPON PROGRAMME

Jaswant Singh

India's approach to the entire issue of Nuclearisation as one of the challenges of the future needing clarity and resolution has been discussed at every forum of defence studies.

The earlier approach was a reconciliation between India's security needs and valid international concerns about weapons of mass destruction; between a moralistic and the realistic approach to nuclear weapons; between a covert or an overt nuclear policy.

11th May 1998 changed all that. On that day India had successfully carried out three underground nuclear tests at the Pokhran range. This was followed on 13th May by two more underground sub-kilo ton tests. The Government of India, thereafter announced the completion of the series and also a number of other steps. These five tests ranging from the sub-kiloton variety to fission to thermo-nuclear amply demonstrated India's scientific, technical and organizational abilities.

When Pakistan also exploded nuclear test devices, the question of non-proliferation and the future of the disarmament debate got placed at the forefront of International Agendas.

Growth of India's Nuclear Energy programme

In 1944 Dr.Homi Bhabha, with the help of J.R.D.Tata, Chairman of Sri Dorabji Tata Trust, set up an institute devoted to Basic

Scientific and Technological research-the Tata Institute of Fundamental Research (TIFR).

The experimental groups started by Bhabha deserve special mention because they become the forerunners of all indigenous technological activity in the country and heralded the beginning of an extensive atomic energy programme in India.

The TIFR went on even to design and assemble India's first computer in 1957. The earliest of the laboratory scale nuclear experiments was also conducted during that period.

In August 48, the Atomic Energy Commission AEC was constituted. The foundation of subsequent self-sufficiency in diverse scientific fields including Nuclear Energy, was thus laid.

On 4/8/1956 "Apsara" the reactor, went critical, the first in Asia. Bhabha felt that the country was not sufficiently endowed with resources of conventional fuel and the development of nuclear energy sources for power production was vital.

In 1969, The Tarapore nuclear power generating reactor came up.

Canada assisted India in the construction of Candu-type reactors in Rajasthan, aware of India's established technical expertise in plutonium production. On October 1972, the

then Prime Minister gave the scientists the go-ahead for a peaceful explosion.

Dr.Raja Ramanna led the group of scientists and technologists. Dr.Nag Chandhary head of the defence laboratories associated himself with the next step of the project with (a) the production of the plutonium alloy b) the tigger device and c) the associated electronic device.

By 1973, all material problems had been tackled the site to conduct the experiment near Pokhran was chosen. Sparse human population, and the remote likelihood of water sources under-ground made the scientist to decide upon a site near Pokhran in the Thar Desert. Very few were allowed to know of the impending Atomic explosion.

Overcoming the objections of the economic administaration, the then Prime Minister decreed that the experiment should be carried out according to schedule.

When all preparations were complete, Dr.Raja Ramanna asked Dr.P.K.Iyengar (later Director BARC) whether they had taken everything into consideration, he

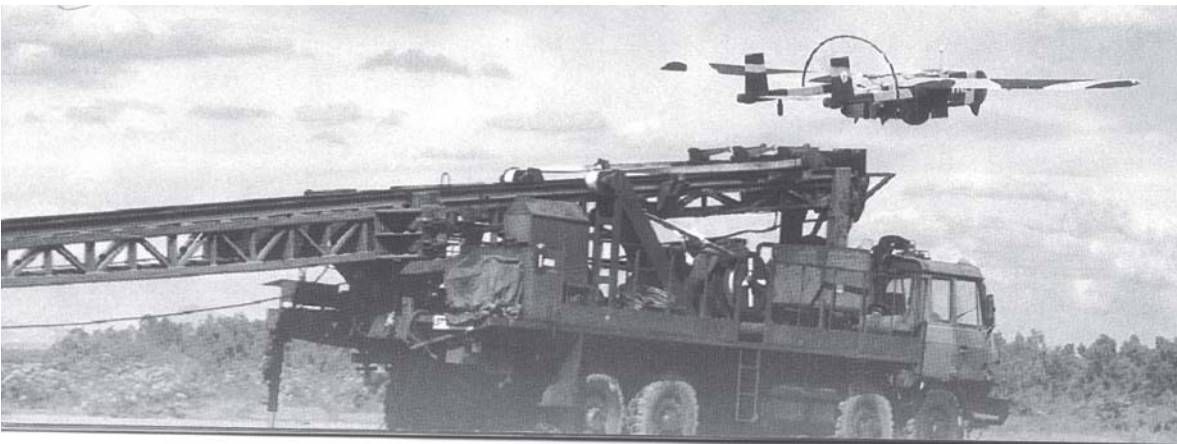
remarked sharply in his usual style. “This has to work or the laws of physics are wrong.” The DRDO under Dr.Nag Chaudhary made significant contributions to the Atomic Explotion project with the development of the lenses, and the fabrication of the high explosives.

On 18/5/1974, with last minute hiccoughs corrected, Shri Dastidar, the person responsible for the fabrication of the trigger, pulled it, to detonate the Atomic device.

The whole earth in front of the scientists rose up as though Lord Hanuman had lifted it. The scientists knew that the experiment had succeeded. The shock waves followed. The seismic team under George Varghese placed the yield between 12 and 15 kilotons. The health physicist reported no radiation activity anywhere above ground level after the explosion.

The scientists had realised the impact of any possible prior leakage of the information. They kept diligent silence until the experiment was over.

Otherwise there would have been insurmountable pressures both from inside



the world. It had not expected such an achievement from a developing Nation.

During the Bangladesh Liberation War, the U.S. tried to persuade the Chinese to interfere in India, but afraid of Russia, China backed out. The U.S. sent in its Task Force 74 headed by its Nuclear Aircraft Carrier. Russia had to send in its own Deterrent force to thwart U.S. intentions. This act of Nuclear intimidation by the West also forced India to go ahead with its Nuclear Experiment.

Pakistan reacted with a Nuclear weaponisation programme of its own, as an outcome of its treaty with China.

After 1980 election, the Prime Minister sent Dr.Raja Ramanna to the post of Director of BARC. Dr.A.P.J.Abdul Kalam was persuaded to move from the Department of space to become the Director D.R.D.O. The D.R.D.O. Hyderabad was then engaged in missile research.

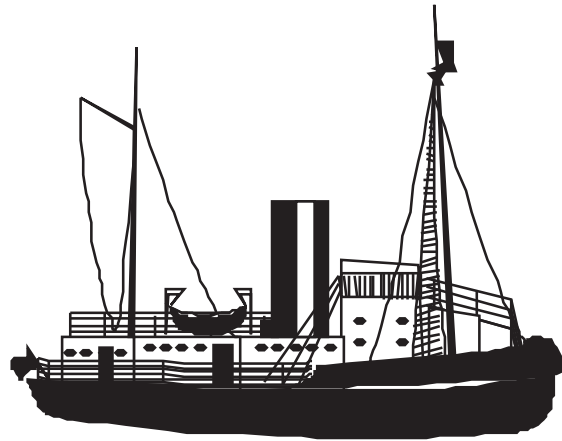
Another Nuclear Experiment to be held in Pokhran in 1983 was thwarted by America's prior knowledge of the same.

The U.S. and the world came to know of China-Pakistan Nuclear cooperation and reacted strongly to the Pak experiment.

In 1983, an integrated guided missile programme was formulated by DRDO's Dr.V.S.Arunachalam with Dr.A.P.J.Abdul Kalam as its mainstay.

This programme included the entire spectrum of missiles, from an antitank, Nag, to two surface-to-air, Akash and Trishul, one medium range surface-to surface, Prithvi,

and an intermediate range missile, Agni. To well-informed observers, it was obvious that India was aiming at developing its nuclear option further. Agni missile would not make sense unless it had a nuclear warhead. Prithvi could be used in a dual role, though it would be more cost effective with a nuclear warhead. This was the period when the debate on intermediate range missile was at its heights in Europe. It is to be noted that



this programme was sanctioned at about the same time (that) the Prime Minister, had asked for a nuclear test.

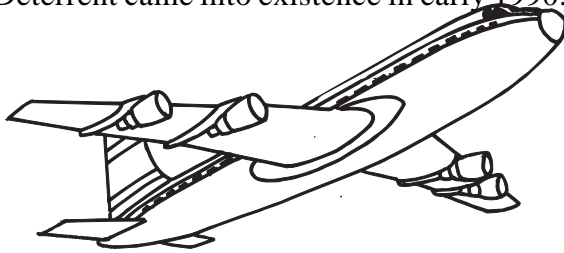
The decades of the 80's had meanwhile also, once again, witnessed a gradual deterioration of India's security environment. In South Asia, nuclear weapons increased and more sophisticated delivery systems were inducted. In the region there also then came into existence a pattern about clandestine acquisition of nuclear materials, missiles and related technologies. India, during this period, became the victim of externally aided and abetted terrorism, militancy and clandestine war through hired mercenaries.

America became very tolerant of Pak's nuclear programme and its Pressler Amendment only aided Pak buy more time for its weapons' programme.

India's next Prime Minister (1988) called for a non-nuclear, non-violent world. The call was ignored by the five nuclear hegemonic powers.

Faced with harsh realities, The Prime Minister cleared DRDO and BARC for Indian Nuclear Weapons' Programme.

It can be assumed that the Indian Nuclear Deterrent came into existence in early 1990.



Pakistan thought that India already had the nuclear deterrent capability. It appears that Pakistan attempted a nuclear black mail in May 1990, when the Pak-backed insurgency in Kashmir was at its peak.

Dr. Raja Ramanna, a minister in 1990, announced in the Parliament "While India would never use its nuclear capability against any neighbour, if any neighbour were to do so, the country would rise to the occasion".

The Prime Minister (1995) ordered nuclear tests, backed off when US pressurised the Indian Government. At last on May 11 & 13-1998 the tests could be completed, under the next Prime Minister.

The factors that influenced India's decision were:

1. The end of the cold war did not change anything in India's Security problems.
2. Pakistan was colluding with China in producing Nuclear Weapons and was

enhancing its delivery systems with America winking at Pak's growth.

3. The Nuclear Non-proliferation treaty (N.P.T.) was in 1995 extended indefinitely and unconditionally, perpetuating the existence of nuclear weapons, in the hands of five countries, who were also engaged in programmes for modernisation of their nuclear arsenals.
4. At last when the CTBT, Comprehensive Test Ban Treaty was opened for signature in 1996, it was neither comprehensive nor was it related to disarmament. It came up after 2000 tests, after the five countries had armed themselves to their teeth.

Today, India is a nuclear weapon state. This adds to its sense of responsibility as a nation that is committed to the principles of the UN Charter and to promoting regional peace and stability.

India's nuclear policy remains firmly committed to a basic tenet: that the country's national security, in a world of nuclear proliferation lies either in global disarmament or in exercise of the principle of equal and legitimate security for all.

No other country in the world has demonstrated the kind of restraint that India has for near about a quarter of a century after the first Pokhran test of 1974. In the years preceding that Peaceful Nuclear Explosion (PNE) and in subsequent decades, consistently, India continued to advocate the basic tenet of its nuclear strategy. Now, in the nineties, and as the century turns, the country was faced by critical choices.

India had been witness to decades of international unconcern and incomprehension, even as the overall security environment of the country, both globally and in Asia deteriorated. Reports of the transfer of nuclear weapon powers technology from declared nuclear weapon powers to preferred states. Neither the world nor the nuclear weapons powers succeeded in halting this process. NPT notwithstanding, proliferation in the region spread.



Since nuclear weapon powers that assist proliferation, or even condone it are not subject to any penalty, the entire non-proliferation regime became flawed. Nuclear technologies became, at their worst, commodities of international commerce, at best lubricants of diplomatic fidelity. India is the only country in the world to be situated between two nuclear weapon powers.

On India's western flank lies the Gulf region, one of the most critical sources of the world's energy requirements; to its north the Commonwealth of Independent States, a yet to be fully developed reservoir. With both these regions India has ancient linkages. It also has extensive energy import requirements. The Gulf provides employment to Indian labour and talent. However, this region too, and its adjoining countries have been targets of missile and nuclear proliferation. Long range missiles of 2500 km range were proliferated to this area in the mid 80's. Unfortunately, from 1987 onwards nuclear proliferation, with extra-regional assistance, has continued unchecked.

Faced as India was, with a legitimisation of nuclear weapons by the haves, by a global nuclear security paradigm from which it was excluded, trends towards disequilibrium in the balance of power in Asia, and a neighbourhood of two nuclear weapon countries acting in concert, India had to protect its future by exercising its nuclear option. By doing this, India has brought into the open the nuclear reality which had remained clandestine for at least the last eleven years. India could not accept a flawed non-proliferation regime, as the international norm, when all objective realities asserted conclusively to the contrary. India's policies towards its neighbours and other countries have not changed. The country remains fully committed to the promotion of peace, stability, and resolution of all outstanding issues through bilateral dialogue and negotiations. The tests of May 11 and 13, 1998 were not directed against any country; these were intended to reassure the people of India about their own security. Confidence building is a continuous process; with India remaining committed to it.

(From "Defending India")



WHY DID INDIA GO NUCLEAR?

Jaswant Singh

The range of options for India had, by 1996, narrowed critically. India had to take necessary steps to ensure that the country's nuclear option, developed and safeguarded over decades, was not permitted to erode by a self-imposed restraint. Indeed, such an erosion would have resulted in an irremediably adverse impact on national security. The Government of India, was thus faced with a difficult decision. The only touchstone that could determine its decision remained national security. The tests conducted on 11 and 13 May, had by then not only become inevitable they were, in actuality a continuation of the policies set into motion, from almost the earliest years of independence.

An examination of the first fifty years of Indian independence reveals that the country's moralistic nuclear policy and restraint did not really pay any measurable dividends. Consequently, this resulted in resentment within the country; a feeling grew that India was being discriminated against. In the political market place of India, nuclear weaponisation gained currency, and the plank of disarmament began to appear as both unproductive and unrealistic. It began to be argued that if the Permanent Five's possession of nuclear weapons is good, confers security to their respective countries, then how is the possession of nuclear weapons by India not good, or how does the equation reverse simply in this instance? There is also the factor of the currency of power. If the P-5 continue to employ this currency in the form of nuclear weapons, as an international communicator of force,

then how is India, to voluntarily devalue its own national security? It is this reasoning that lies behind the evolution of Indian nuclear thought in the past fifty years. India has also learnt from the experience of the West, their approach to, attitudes about and application of nuclear policy. Deterrence works in the West, or elsewhere, as it so obviously appears to, otherwise why should these nations continue to possess nuclear weapons at all. Then by what reasoning is it to be asserted that it will not work or cannot work in India? To admonitorily argue, thereafter, that India has to now 'fall in line' because there is now a new international agenda of discriminatory non-proliferation, pursued more on account of the demands of the political market place to some of these countries, as an extension also of their own internal agendas or political debates, is to assert the un-implementable. The rationale behind nuclear weapons powers continuing to have, and preaching to those that do not have, to have even less, leaves a gross imbalance between the rights of and obligation of nation states of the world community. Either, India counters by suggesting, global, non-discriminatory disarmament by all; or, equal and legitimate security for the entire world.

That alone is why, and it bears repetition, that India since independence, has been a consistent advocate of global nuclear disarmament, participating actively in all such efforts, convinced that a world without nuclear weapons will enhance both national and global security.

(Extract from 'Defending India')

INDIAN AIR FORCE

SU-30 ~ Twin seater twin engine multirole fighter of Russian origin which carries 130 mm GSH gun alongwith 8000 kg external armament. It is capable of carrying a variety of medium-range guided air to air missiles with active or semi-active radar or Infra red homing close range missiles. It has a max speed of 2500 km/hr (Mach 2.35).

MiG-29 ~ Twin engine, single seater air superiority fighter aircraft of Russian origin capable of attaining max. speed of 2445 km per hour (Mach-2.3). It has a combat ceiling of 17 km. It carries a 30 mm cannon alongwith four R-60 close combat and two R-27 R medium range radar guided missiles.

MiG-27 ~ Single engine, single seater tactical strike fighter aircraft of Russian origin having a max. speed of 1700 km/hr (Mach 1.6). It carries one 23 mm six-barrel rotary integral cannon and can carry upto 4000 kg of other armament externally.

MiG-25 ~ Twin engine, single seater strategic reconnaissance aircraft of Russian origin having a max. speed of Mach 3.2 and max height close to 24 km unmatched by any other fighter aircraft in the world.

MiG-23 MF ~ Single engine, single seater swing wing air superiority fighter of Russian origin carrying one 23 mm twin barrel gun and two R-23R/T medium range and two R-60 close combat missiles. It has a max speed of 2446 km/hr (Mach 2.3).

MiG-21 BIS ~ Single engine, single seater multirole fighter/ground attack aircraft of Russian origin which forms the back-bone of the IAF. It has a max speed of 2230 km/hr (Mach 2.1) and carries one 23mm twin barrel cannon with four R-60 close combat missiles.

Mirage-2000 ~ A single seater air defence and multi-role fighter of French origin powered by a single engine can attain max speed of 2495 km/hr (Mach 2.3). It carries two 30 mm integral cannons and two matra super 530D medium-range and two R-550 magic II close combat missiles on external stations.

Jaguar ~ A twin-engine, single seater deep penetration strike aircraft of Anglo-French origin which has a max. speed of 1350 km/hr (Mach 1.3). It has two 30mm guns and can carry two R-350 Magic CCMs (overwing) alongwith 4750 kg of external stores (bombs/fuel).

Canberra ~ Twin engine, twin seater subsonic tactical bomber and interdictor of British origin having max speed of 933 km/hr having four integral cannons (20 mm) and capable of carrying three bombs (1000 lbs each) internally alongwith two bombs (1000 lbs) underwing or 8000 lbs bomb load internally and underwing.

IL-76 ~ A four engine heavy duty/long haul military transport aircraft of Russian origin with a max speed of 850 km/hr. It has a twin 23 mm cannon in tail turret and capacity to

carry 225 paratroopers or 40 tonnes freight, wheeled or tracked armoured vehicles.

AN-32 ~ Twin engine turboprop, medium tactical transport aircraft of Russian origin with a crew of five and capacity to carry 39 paratroopers or max load of 6.7 tonnes. It has a max cruise speed of 530 km/hr.

AVRO ~ Twin engine turboprop, military transport and freighter of British origin having a capacity of 48 paratroopers or 6 tonnes freight and max cruise speed of 452 km/hr.

Dornier ~ Twin engine turboprop, logistic air support staff transport aircraft of German origin capable of carrying 19 passengers or 2057 kg freight. It has a max speed of 428 km/hr.

Boeing 737-200 ~ Twin engine turbofan, VIP passenger aircraft of American origin with total seating capacity of upto 60 passengers. It has a max cruise speed of 943 km/hr.

MI-26 ~ Twin engine turboshaft, military heavy lift helicopter of Russian origin with carrying capacity of 70 combat equipped

troops or 20,000 kg payload. It has a max speed of 295 km/hr.

MI-25 ~ Twin engine turboshaft, assault and anti armour helicopter capable of carrying 8 men assault squad with four barrel 12.7 mm rotary gun in nose barbette and upto 1500 Kg of external ordnance including Scorpion anti-tank missiles. It has a max cruise speed of 310 km/hr.

MI-17 ~ Twin engine turboshaft, medium transport helicopter of Russian origin with a capacity of 24 troops or 3.3 tonnes of freight. It carries 6 UV-17, 57 mm rocket pods and has max cruise speed of 240 km/hr.

Chetak ~ Single engine turboshaft, light utility French helicopter with capacity of 6 passengers or 500 kg load. The anti-tank version carries 4 AS-11 wire guided missiles. It has a max speed of 220 km/hr.

Cheetah ~ Single engine turboshaft, FAC/casevac helicopter of French origin having capacity to carry 3 passengers or 100 kg external sling loads. It has max cruise speed of 121 km/hr and can climb to 1 km in 4 minutes.

