

ELCINA Delegation to China Report

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Objectives

China, the fourth largest country in the world with more than a sixth of the world's population, now famously known as the 'Factory of the World,' was an inevitable destination for a delegation from ELCINA. After successfully completing visits to other South East Asian countries (including Taiwan, Korea, Thailand, Malaysia, Singapore & Hong-Kong) it was felt that we were now ready to take a closer look at the giant.

Over the past decade, China's role in global economics has been growing exponentially. The catalyst for this growth has been manufacturing, the main strength of the country. Coupled with the rising importance of electronics, China has advanced by leaps and bounds and captured a major chunk of the global electronics manufacturing industry. Their scales of production and ability to attract foreign investment have been a source of fascination for Indian manufacturers for a long time now. Lately this fascination has been turning into apprehension due to the fear that the Chinese juggernaut would leave its Indian counterparts bereft of business and pushed out of competition.

The developments mentioned above were reasons enough for an ELCINA delegation to visit China and see for themselves this amazing transformation. The visit was also aimed at bringing the electronics industries of the two countries closer by increasing trade and identifying opportunities for closer cooperation.

Top 10 Chinese Exports to India (All figures in US\$ Million)

HS	Description	Jan-Dec 2002	Jan-Dec 2003
	India	2672	3344
85	ELECTRICAL MACHINERY	564	658
29	ORGANIC CHEMICALS	543	637
84	MACHINERY	199	298
50	SILK;SILK YARN,FABRIC	219	239
27	MINERAL FUEL, OIL ETC	189	235
59	IMPREGNATED TEXT FABRICS	71	125
54	MANMADE FILAMENT,FABRIC	65	98
28	INORG CHEM;RARE EARTH MT	70	93
90	OPTIC,NT 8544;MED INSTR	82	65
73	IRON/STEEL PRODUCTS	31	57
39	PLASTIC	27	56

Source: Presentation of First Secretary (Commercial) Mr.V.Kwatra (Embassy of India-Beijing)

Cities Visited

The visit was planned for a period of 10 days, from the 10th to 20th of April 2005. Sticking to a tight schedule it was decided that the delegation would visit 3 cities; Shenzhen, Shanghai and Beijing in the same order moving from South to North of China. All three are large industrial cities and centres for electronics hardware manufacturing.

Shenzhen: A city created out of thin air, this small village town with a population of just over 50,000 twenty years ago has been transformed into a bustling metropolis with a population of over 7 million. With a strong base in computer related manufacture the city also boasts of the distinction of being the “largest exporter of MP3 players in the world.” A large presence of electronics manufacturing in and around the region and the opportunity to see what newly established manufacturing facilities in China are like is what interested ELCINA the most. The city also gave us the opportunity to see what human endeavour can achieve. It is difficult to imagine that a modern city with the latest infrastructure to match the best in the world can be created within a short span of two decades. The city today is a major source of employment and revenue for China.

Shanghai: The financial capital of China, this city is the New-York of the East with its skyline resembling that of Manhattan. The city was also host to two major electronics exhibitions being held on an international scale and this was one of the reasons for scheduling our visit at the same time. These exhibitions provided an opportunity to interact with a very wide range of electronics manufacturers, big and small, as well as both Chinese and international and identify business opportunities. Shanghai is a hub of a large number of world class Electronics manufacturers and MNC’s and the delegation got the opportunity to visit these plants and interact with their managements.

Beijing: The capital of China, this city is also the historical capital of the country. Its abundance of historical landmarks makes it a favourite with tourists. Though it has metamorphosed significantly over the years, the rate of change accelerating in recent years, it still remains the spiritual and political capital of China. ELCINA’s interests in Beijing were the various trade associations and government organizations that are based in the city. However, we were surprised to find that, besides the Great Wall, Beijing is a major manufacturing and business centre and is host to important electronics manufacturing facilities such as Nokia and Elcoteq, both major cell phone manufacturers as well as factories manufacturing hitech display products and capital equipment.

Factory Visits and Meetings

Company Name	Details
SHENZHEN	
SI Semiconductor Co.Ltd (Visited on 11/4/05)	A fab which mfrs 4 & 5 inch wafers, was established in 1988 with a capital of US\$15.6 million is a completely state owned entity with 75% share with Shenzhen and 25% with Hong Kong. It originally had US shareholding and the 5 inch fab was relocated from USA. It was the first facility in China to manufacture Triple diffusion SIPOS passivation planar technology to produce high voltage transistors on a large scale. It also supplies silicone power transistors for green illumination applications in China. Total annual sales of the company are RMB 135 Mn (US\$16.5 Mn) and mfrs 40,000 wafers per month..
SEG Samsung (Visited on 11/4/05)	The largest manufacturer of TV Glass Funnels and Panels in China with 60% production for TV’s with size 29” and

	above. Capacity 11 Mn pcs per annum. The annual sales target of the company is US\$300 million.
Lelon Electronics (Huizhou) (Visited on 12/4/05)	Mfr of Aluminium Electrolytic Capacitors (Radial, Axial, Surface Mount V-Chip, Snap-in, & Screw Type), Chip type Tantalum capacitors, Solid Aluminium ElCaps. Established in 1976 with a capital of US\$ 44.3 Mn. This facility displayed excellent vertical integration manufacturing Aluminum foil, Lead wire, Rubber Seals and Sleeve in the same industrial complex in independent units all feeding the main plant. The plant also mfrs Capital Equipment for mfr of elcaps. The plant has a capacity of 400 million pieces per month. Avg Price US\$ 0.013/pc. Has 5 production facilities, 6 sales branches & 2800 employees worldwide. Turnover US\$100.6 Mn
Vishay Components (Huizhou) Co.Ltd (Visited on 12/4/05)	This facility is a Wofe (i.e. Wholly Owned Foreign Enterprise) and among the top 100 investors in Huizhou city. Being a Wofe it has a bonded factory / warehouse and pays VAT only on local sales. It manufactures various types of capacitors including Tantalum, Monoaxial, PTC, NTC, Monokap etc. Its turnover has increased sharply over last few years from US\$10 Mn to US\$100 Mn..
SHANGHAI	
Shanghai Opto Electronics Trade Association (SOTA) & Shanghai IC Industry Association (SICA) (Visited on 14/4/05)	These two associations formed in Shanghai due to presence of large electronics industry. SOTA represents Optical Display, Optical Components, Optical Telecomm, Materials, Storage, Laser etc. SOTA has around 200 members. These segments produce goods valued at RMB 50 Bn (US\$6 Bn approx.) SICA represents 309 members who are all from Shanghai region & associated with IC manufacturing activity. Value of their output is RMB 23 Bn (US\$2.75 Bn). IC industry has been given strong support by Chinese govt with the largest fab set up with huge investment from govt. Govt also provides free land, cheap water & electricity. Special VAT rate from 3-6% was introduced for IC fabs but was discontinued due to WTO pressures.
Vishay Passives (Visited on 15/4/05)	Manufacturer of various types of Film capacitors including Interference Suppression capacitors, AC & Pulse Capacitors and general purpose capacitors. Very large facility and one of three plants of Vishay for capacitors – Shanghai, Belgium and Pune. Works 7 days and 24 hours with about 750 employees. It is ISO9001, QS9000 and TS16949 approved.
Shanghai Sharp Electronics	Founded in 1992. Mfrs of House hold appliances – Washing Mach, Airconditioners, Refrigerators, Air Purifier & Vaccum Cleaners -Annual Sales of US\$353 million. 75% Domestic Sale; 25% Exports to Japan, USA, SE Asia &

	Europe. Production ACs 800,000; Refrigerators 500,000; Washing Machines 500,000. Total production in China Refrigerators -7 Million; ACs -14 Million.
Jabil Circuits	This is one of the biggest mfg plants visited by the delegation-Very large facility of Jabil Group which has US\$6 Bn Worldwide sales and 43,000 employees. Shanghai plant has 155,000 sqft mfg space. Guangzhou plant has 250,000 sqft mfg space and new plant is coming up in Wuxi. China and Malaysia are the two major business drivers for Jabil and though India is presently small, expansion plans are under implementation. Major customers are from Networking, Computer storage and IT segments and three top customers are Philips, Cisco and HP.
BEIJING	
Orient Top Victory Electronics (OTPV) (Visited on 18/4/05)	One of the largest mfrs of Display Devices –Wide range of Display and Digital Media Products. The company is listed on the Hong Kong Stock Exchange and has a Capital of RMB 540 Mn (US\$ 65 Mn). OTPV supplies to world famous OEMs and has capacity of 5 Mn Displays of all types including 170,000 PDP displays. The company has 3 production lines for CRT Displays, 1 for LCD and 2 for PDP. Output is 400,000 CRT/CDT p/mth and 15,000 PDP p/mth. Turnover US\$ 325 Mn.
Beijing Seven Star (Visited on 18/4/05)	Formed by amalgamation of 6 former state owned enterprises. Registered Capital RMB 580 Mn and Total Assets RMB 930 Mn. Revenues were RMB 624 Mn in 2004 with 2300 employees. The companies which were amalgamated to form Seven Star were originally set up in 1960 and the new restructured co. was formed in 2000. Diversified company mfg Industrial Machinery (Semicon Processing Equip., Equipment for Vacuum Electronic Displays and Devices & Battery Production Equipment) , Electronic Components and Materials (High Prec. Resistors, Crystal Components, Thick & Thin Film Hybrid IC Series & DY for CRT/CDT).
Nokia (Visited on 19/4/05)	Nokia group's main interest is now in Mobile handsets and Infrastructure. The company operates in 9 countries, R&D in 12 countries and has a turnover of Euro 30 billion and 32% share in the global handsets market. Sales of the company in China in 2004 were \$3.6 billion which is their 2 nd largest market. Nokia has 4 manufacturing units and 5 R&D centres and employs 30,000 workers in China. They have brought a number of supporting suppliers to China and source 65% inputs locally.
China Electronic Chamber of Commerce	Established in 1988 this chamber was formed when China decided to transform itself from a planned economy to a

<p>(Visited on 19/4/05)</p>	<p>market economy. The main aim of this association was to promote the industry and market its products. It even helps in the distribution of products. With over 4000 members throughout China with a collective turnover of around RMB 700 billion (US\$85 Bn) the association represents almost the entire (about 75%) electronics industry of China. It organizes various events and activities both within and outside the country.</p> <p>Some of the companies which participated in the meeting with CECC were –</p> <p>China Greatwall Computer group, the oldest and largest mfr of PCs, Notebooks/Servers, Magnetic Recording products, network display equipment, cell phone boards/cards, flexible PCBs.</p> <p>Tsinghua Tongfang Co.Ltd. – This is a premier mfr of PCs with 7.8% share and US\$800 Mn Turnover. It is a highly diversified company with activities in the fields of Energy, Environment, Applied Nuclear Technology and Medicine.</p> <p>Chingwa Tungwa Co.Ltd.- Mfr of Computers and related products</p> <p>Beijing Huachi Technology Ltd.– Mfr of igo brand consumer products.</p>
<p>Elcoteq (Visited on 19/4/05)</p>	<p>Elcoteq is the largest EMS company focused on manufacture of communication equipment with Nokia & Sony-Ericsson as their OEM partners. It employs 4300 people in 3 factories in China & manufactures about 30 million mobile handsets every year. In Beijing, the company operates in the Beijing Economic /Technological Development Area [BDA] since June 2000. It has achieved a rating of grade “AA” by China Central Customs & identified as a Special Economic Zone[SEZ] exempting them from paying import duties upfront & several other facilities.</p>

General Observations:

The tour was indeed an eye opener for us and confirmed a lot of the impressions we had about this interesting and enigmatic country. In fact in many cases, it went much beyond our expectations.

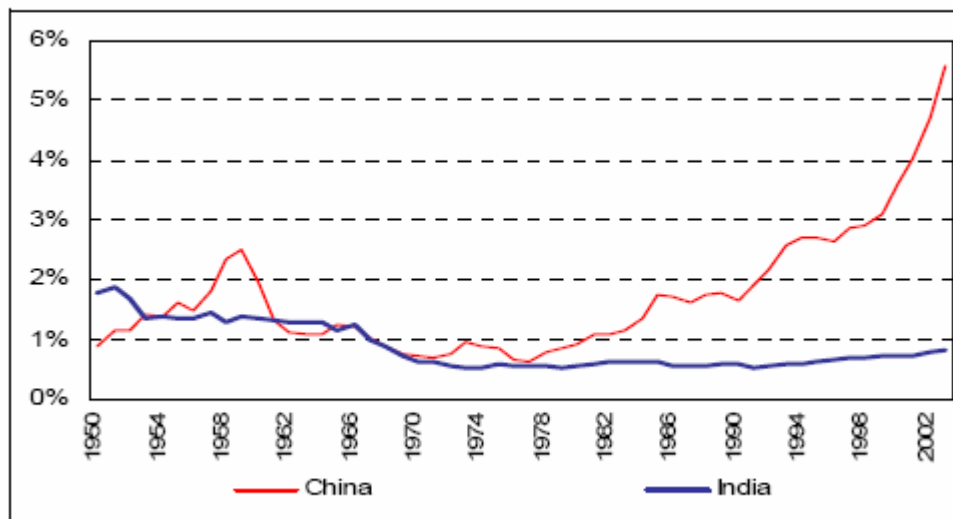
The Chinese people have a history as interesting as our own and they have gone through the trials and tribulations of many dynasties and kings. They are courteous and sensitive and very punctual. However, they are prepared to wait patiently if their guests arrive late, which is often the case with us. An interesting facet of the Chinese character is their inscrutability; it is hard to obtain information and even more difficult to understand what they are thinking. They reveal only what is essential and you may need to spend a lot of

time with them before they really open up. They are never rude, always very patient and polite.

What China has achieved in a short span of 25-30 years in the sphere of modernizing its infrastructure and entire spectrum of industries is a lesson for all under-developed and developing countries.

The delegation spent every working day visiting factories and attending meetings with our counterpart associations. The enthusiasm and keenness among the hosts was spontaneous and there was a hint of pride in their achievements as they showed us around their manufacturing units. All the factories visited by the delegation were very impressive with large capacities (some of the largest in the world !). These capacities enable manufacturers to achieve lower costs due to economies of scale and coupled with cheap raw materials and inputs, the Chinese are able to sell their products at prices which are unimaginable for competitors from other countries. The result is there for all of us to see in the graph below with China's share in global exports soaring to ~ 6% and still rising.

China and India: Share of World Exports of Goods & Services

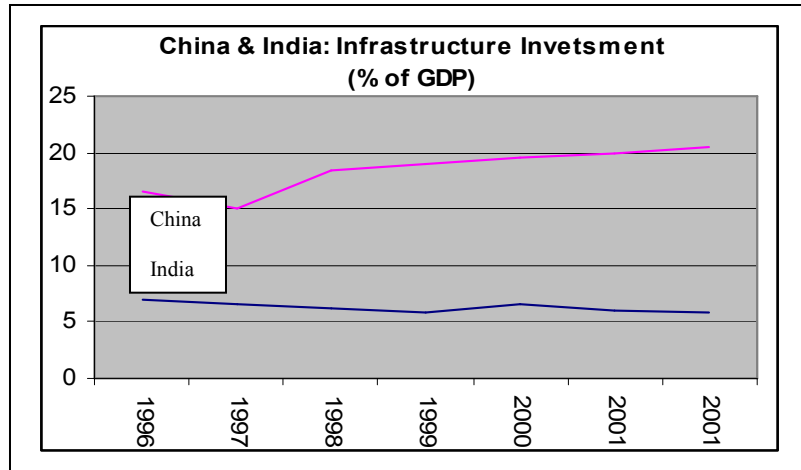


Source: WTO, Morgan Stanley Research

Infrastructure

When China initiated reforms in the late 1970s, it focused on manufacturing as the key growth driver for the economy. Policymakers realized the importance of good infrastructure to attain their goals and have invested heavily in infrastructure creation since the early 1990s. However, in India investments in infrastructure have been lacking. The excellent physical infrastructure that the Chinese government has successfully created by investing huge amounts of resources is today a great source of strength for them.

The airports, roads, seaports etc are all world class and have been built keeping future growth considerations in mind. The government also has a very positive outlook towards new investments and China spends eight times as much as India does on infrastructure (In 2002 China's total capital expenditure was US\$260 billion on electricity, construction, transportation, telecom and real estate which is an astounding 20% of GDP compared with US\$30 billion in India). This was evident from the excellent highways that were seen during the visit.



Roads

China's Highway Network is seven times larger than India's. The Indian road network covers about 200,000 km compared with 1.4 million km in China. A lack of funds has been a major constraint for road investment in India. Although the government has recently initiated some investments by raising revenue from taxes on diesel and petrol, these investments are still miniscule compared to those in China. For instance, the most talked-about large road project in India is the golden quadrangle and corridors project, which is likely to cost just about US\$12 billion over a period of eight years (this equals US\$1.5 billion a year or 0.3% of GDP a year). In comparison, China has been investing almost US\$24 billion annually (2-2.5% of GDP) on improving its highways. In India, the government recently planned to increase spending on roads by seeking the participation of the private sector. However, it is believed that the government needs to augment its own resources for road spending, as was done by the Chinese government.

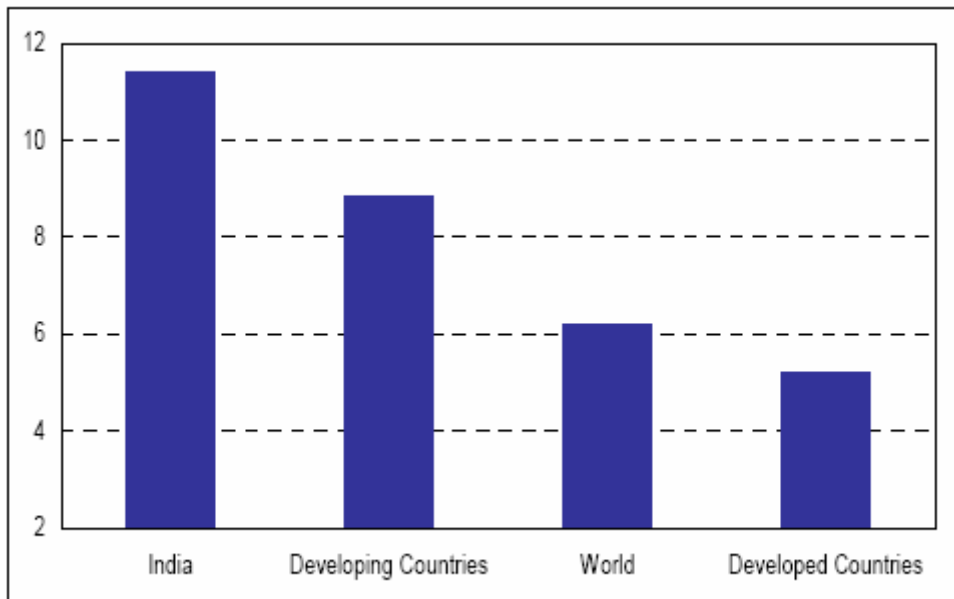
Ports

There has been a gradual improvement in the efficiency of India's port sector over the past few years with the rising trend of privatization. However, overall efficiency remains low and the cost of cargo movement at the Indian ports remains significantly higher than the global average. This is evident from higher freight payments as a percentage of total import value at about 11% compared with a 6% global average and 5% for developed countries. The higher costs at the Indian ports reflect low productivity at terminals, insufficient hinterland infrastructure facilities and delays at customs. Apart from higher costs, the inefficiency of port infrastructure results in a higher lead-time for trade. The lead-time for India's trade with the US is 6-12 weeks compared with China's 2-3 weeks. The overall inefficiency at the Indian ports has been a key reason for global shipping

lines not making any of the Indian ports a hub in the region, preferring Singapore, Dubai and Colombo among others.

China has excellent port facilities, which are comparable with the best ports in the world. In fact, three of the top 10 ports in Asia are in China. The development of its ports has been important for China because of the export-driven growth in the country. The efficiency of Chinese ports when compared to those in India is evident in the fact that the average lead time for a consignment from India to the US takes 6-12 weeks in comparison with China's 2-3 weeks. One of the reasons for China to have such world class ports could be because of the importance of exports in the growth of that country.

Ports: Average Cost of Freight for Imports

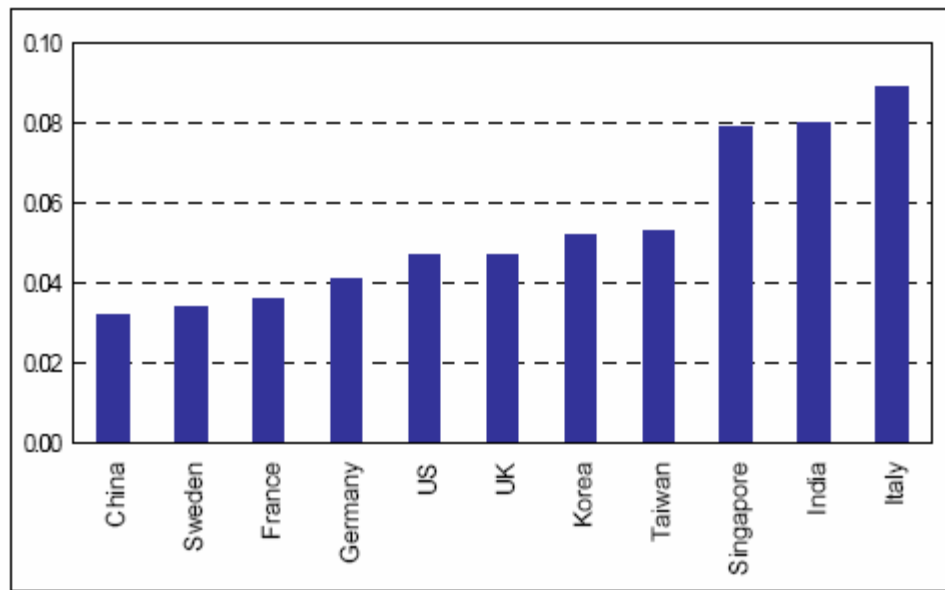


Source: CII McKinsey

Electricity:-Another area where the Chinese score higher over India is in the electricity sector. Although China still suffers from some shortfalls, the cost of electricity in China is much lower as compared to India. (Electricity costs for industrial uses in India are one of the highest in the world, second only to Italy).

The electricity sector remains a bottleneck in India with most states (except a select few cities) facing electricity supply cuts on a regular basis. As a result, most of the large successful Indian companies tend to have captive infrastructure facilities, which are at times not necessarily of economic size. Apart from the poor availability of electricity, tariffs charged in India are among the highest in the world. The distribution setup leaves much to be desired and cross subsidization to residential customers and farmers result in a large part of the burden being borne by industrial customers.

Electricity Costs for Industrial Clients, US\$/KWH, 2002



Source: IMD

Currently, about 20% of the electricity generated in the country is distributed to farmers at almost negligible charge. Another 40% is lost in transmission and distribution. Hence, in all about 60% of the total yields virtually no revenues. The profitability and viability of this business are unlikely to improve without a major shift in approach by the overnment. Although China is also suffering from some shortages, it is more an issue of overheating of the economy rather than a general case of inefficiency and is management of the electricity sector.

Telecom: One area in which India scores over China as far as infrastructure is concerned is its Telecom infrastructure. The quality and cost of telecom infrastructure available in the country has improved dramatically over the past few years. There have been major changes in this sector and the quality and the cost of the telecom infrastructure available in the country has improved considerably over the past five years. The cost of telecom services in India has fallen by 60-80% in this period due to increased competition from the private sector.

In India, the cost of most infrastructure services is about 50% to 100% higher than that in China. For instance, average electricity costs for manufacturing in India are about double those in China. Railway transport costs in India are three times those in China.

China sees itself as a rising superpower, and as such is trying to grab as much global attention as possible. The feeling of pride and patriotism amongst its people manifests itself in the form of architecture which can be seen throughout the country. The world's largest dam (Three Gorges), the world's largest bridge (from Ningbo to Shanghai), in the process to build the world's tallest building, the worlds fastest Maglev train which runs at 430kmph plus a new airport in Beijing that will be the biggest in the world, can all be seen as efforts to tell the rest of the world to sit up and take notice.

Infrastructure (As of 2002)		
	India	China
Cost		
Railways (PPP US C/TKM [^])	7.9	2.60
Electricity Costs for Industrial Clients, US\$ per kwh	0.08	0.03

The Chinese Economy & Electronics Sector

China's economy has been primarily FDI-driven and Export-led. It has grown at an annual average of over 9 % since economic reforms started in 1978. India has followed a consensual democratic model. Its GDP has expanded at a rate of 5.8% a year since economy was opened up in 1991. China's most successful policy initiatives have been in modernizing infrastructure, allowing labour mobility, welcoming FDI and embracing competition.

China's overwhelming presence in global trade is demonstrated in its superior overall share of global exports. China's share in global goods and services trade is about 6% and has been able to succeed in almost all manufacturing segments. China's success is higher in segments with high labour and capital/infrastructure intensity. China's top export segments are electronics, computers & telecommunications, machinery and garments.

Structure & Significance of Chinese Electronics Industry:

Total number of electronics companies ~ 2800,
 Large: with staff over 1960 = 20% of total
 Medium: 650 to 1960 staff = 28% of total
 Small: 260 to 650 staff = 52% of total
 Less than 260 ? Not Classified

Share in Economy: The electronics sector constitutes a substantial part of China's GDP, contributing around 10% over the last few years which amounts to about \$110 billion each year, compared to only 2% for the Indian electronics industry's contribution to its GDP. With the electronics sector maintaining growth rates of close to 30% compared to an average of 8.5% for China's GDP, the share of electronics in the economy is bound to increase further. Even though the growth rates are now falling, as the industry expands, the growth remains in double digits. Part of this growth is due to the preparations for the Beijing Olympics in 2008 and this is expected to sustain for another couple of years. The fact that electronics is deemed the most important sector for the Chinese economy by its government ensures support and policies framed to promote this sector.

Transformation from public to private: It was observed that most of the manufacturing facilities operating in China were at some point of time owned and operated by the

government. Under these conditions the functioning of these units was non-optimal to say the least and most of them were running losses. Their survival depended wholly on government grants and funds. It seems that the only reason for continuing with these sick units was to fulfill the communist policy of providing employment to all. Only recently has control been shifted to private hands with the government still maintaining a share in ownership. This change has been accompanied by major changes in the organization of labour also. The present labour laws are very flexible, allowing the employers to hire workers as per requirement and almost 70-80% workforce in most units was employed on temporary basis. Though **casual labourers at most facilities were almost 3 times the number of permanent employees**, this was an accepted way of life and social security was provided by the state and movement of workforce from one unit to another was facilitated by the system.

Strength of Chinese Electronics Industry

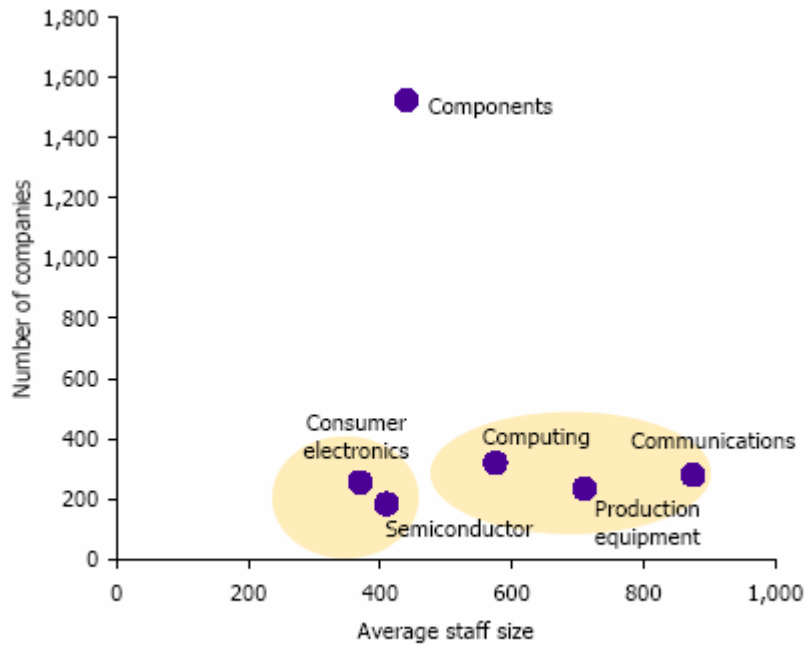
Size: China's Tenth Five Year Plan put top priority on fostering China's IT manufacturing industry, telecommunications industry and software industry. Over the last decade its electronics industry has grown at an average annual growth rate of approximately 33%, making it the largest industry in China today. In fact there are as many component companies in China as the rest of the industry combined. With a total size of over \$110 billion the electronics industry of China constitutes an 8% share in global manufacturing and this figure is almost 50% when considering only developing countries. China now enjoys the status of the worlds' largest manufacturer of color TVs, LCDs, color picture tubes, program controlled switchboards, cellular phones, display devices and monitors, VCD players, air conditioners, refrigerators, calculators and many more high tech products. Further the 2008 Olympics in Beijing is expected to give a boost to the Chinese electronics industry and help sustain its double digit growth figures.

Top Electronics Companies of China (2002)

Rank	Company Name	Revenue US\$ Million	Export US\$ Million
1	China Putian Information Industry company	7740.7	1750.9
2	Haier Group Company	7259.7	422.1
3	Legend Group Holding Company	3961.0	138.5
4	Shanghai Posts & telecommunications Equipment Co. Ltd	3615.6	1148.2
5	Panda Electronics Group	2554.8	454.3
6	TCL Group	2543.6	704.7
7	Gchin Huawei Technology Co. Ltd	1955.3	120.3
8	Hisense Group	1946.7	63.1
9	Shanghai Bell Telephone Equipment MFG Co. Ltd	1819.4	155.0
10	Beijing Peking University Founder Group	1405.2	22.9

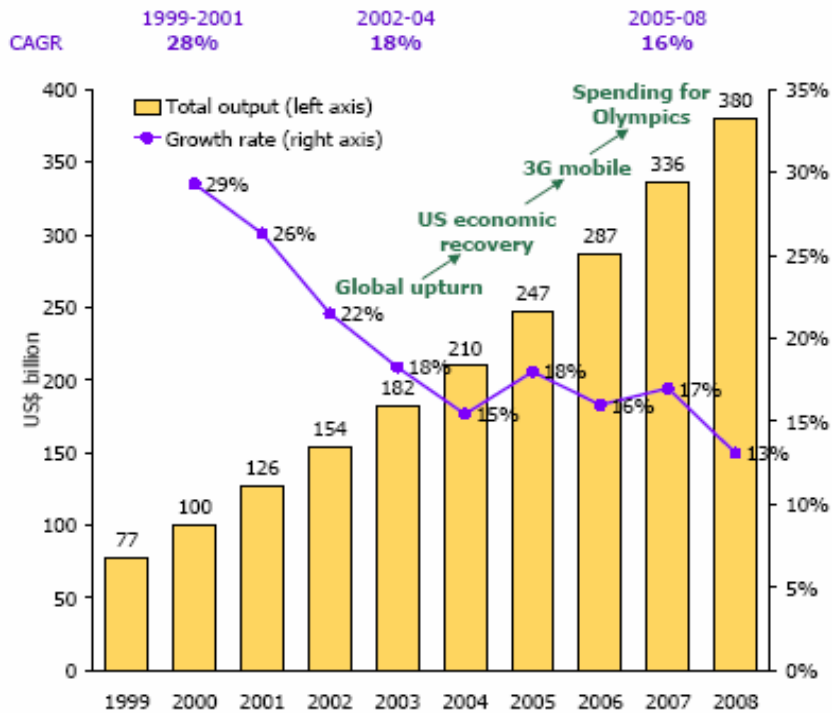
The table above listing the revenues and exports of the top ten electronics companies in China highlights the scale and sheer size that the Chinese industry has. Most of the plants visited by the delegation were also, as earlier mentioned, of very large capacities, often excess capacities, allowing them the benefits of economies of scale.

China: Electronics companies by vertical 2001



Source: China Electronics Industry Yearbook

China: Electronics industry size and growth



Source: Fusion Consulting estimates/projections; China Electronics Industry Yearbook; Reed Electronics Research; Taiwan Ministry of Foreign Affairs; Chinese Academy of Sciences; Gartner; MII; SEMI

Note: Industry size represents total revenues of electronics companies in China

The distribution in the chart above shows the importance of electronic components for this industry. There are almost 1500 companies manufacturing components which feed the equipment manufacturers in Consumer electronics, IT/Computing, Telecommunications and so on. This provides strength to this industry and with adequate local availability of components, the supply chain is strengthened facilitating efficient manufacturing at competitive costs.

Cost Factors

Organization of labour: China and India together account for almost 40% of world's working-age population. This is one of the key reasons for the growing importance of these two economies in the global economy. Having more than a billion people, China does not have any major problems in sustaining its huge demand for labour. The same could be said for India as well but the difference arises in the level of training and education of the labour force that eventually affects productivity.

China has been ahead of India in improving the basic education standards of its population. It ranks high on all parameters for primary education and has focused on improving its human capital. It has implemented free nine-year compulsory education which has enabled a dramatic increase in literacy levels, especially in rural areas. However in India, literacy has lagged because of lower emphasis on primary education. Though both countries have a gross primary school enrolment of close to 100%, a higher percentage of Chinese actually complete their education. What this means is that the workers in Chinese factories have productivity marginally higher than India's. For example in TV set output, Chinese plants average 9.3 sets per operator per day whereas in India the ratio is 8.4 sets per operator per day. In general labour productivity in China's organized sector is higher than in India though the difference varies a lot from segment to segment, ranging from 10% to as much as 300% for some products.

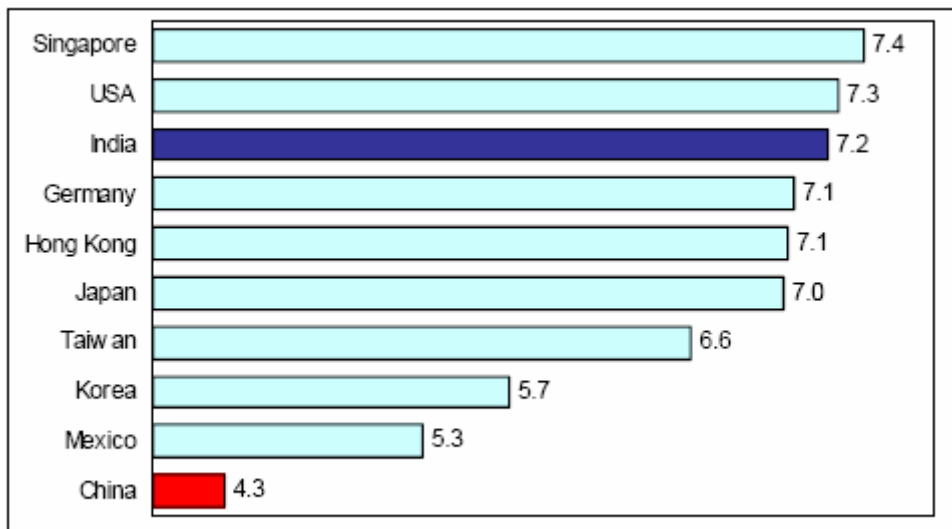
The other big difference in the labour markets of the two countries is that China has pursued major reforms in this sector since it initiated its liberalization program in the late 1970s. Over the years it has adopted greater flexibility in labour, in terms of hiring as well as firing. Some of the labour reforms in China can be summarized as follows:

- ***Freedom of Choice:*** Enterprises have more autonomy in hiring decisions. Instead of unilaterally allocating workers to manufacturing units, labour bureaus introduce workers to units.
- ***Wages:*** The employer's discretion on wages has increased since 1994. The actual cost of labour is comparable to that in India at Rs.5000 per month (Varies from 4000 to 8000 depending upon region; provincial/local laws). Labour may also be subsidized by the state if recruited through an employment exchange.
- ***Contract Labour:*** All factories were seen to have a large number of temporary workers who can be recruited and laid-off as required. This is known as the labour

contracting system which is a big change from the earlier life-time employment system. This system was earlier introduced for private enterprises only but later implemented in government projects as well.

India scores much better when we consider availability of Skilled and Technical work force. It has a large pool of skilled labour, especially engineers relative to its economy's needs which also results in considerable "brain drain". According to IMD, India ranks among the top 3 of 30 nations in terms of availability of skilled labor. It ranks India number one in terms of availability of qualified engineers, while China is in 29th position.

Availability of Skilled Labor, 2003 (1=low; 10=high)



Source: IMD Competitiveness Yearbook, 2003

Tax Structure:

In India, indirect taxes constitute almost 60% of total tax collection. Higher indirect tax rates for the organized sector in India is one of the key reasons for the country's higher manufactured product prices. Compared to China, indirect tax rates in India are much higher in terms of import tariffs as well as excise duties which add up to as much as 40% of the input cost of a product. In addition, the Indian tax system suffers from a multiplicity of rates and surcharges. There are taxes on inputs as well as outputs, which result in tax on tax. This complex system of taxation distorts production and resource allocation decisions. A positive side to this situation is that tax rationalization is progressing well in India and considerable simplification of laws and rates has already been done. The implementation of VAT is also in progress and it is expected that a composite VAT will be in place in next few years.

In comparison China charges a flat 17% under the value added tax system which reduces complexity and enables better resource allocation. The collection of this VAT is shared by the centre and states, with the centers share being approximately 13% and the balance about 4%, being that of the state. Though the 13% controlled by the center is non-

negotiable the remaining 4% which is controlled by the mayor of the state/province can be waived at his discretion to attract investment to the state. VAT has been implemented in India too, but matters still remain complicated due to the varied response from different states.

Rates for corporate tax are also higher in India when compared to those in China. Though the base tax rate for domestic companies is 33%, the Chinese government provides a preferential tax policy to foreign invested enterprises by giving them a two year tax free holiday after the first profitable year and a 50% discount on taxes for the next three years. Other indirect taxes such as Business tax and Consumption tax are also lower and better structured as compared to India.

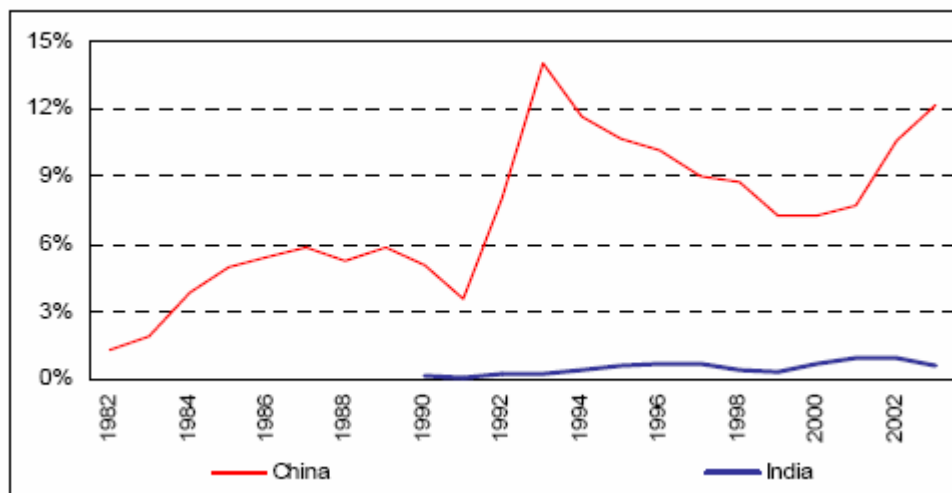
FDI & the Financial System

A resilient financial system and a strong banking sector are key ingredients for sustainable and stable economic growth for economies such as China and India. An efficient financial sector can promote savings and enable the flow of a larger share of savings into productive investments. The efficiency of the banking sector is a key input for ensuring stability of the financial system.

For economies like India and China, capital as a factor of production can be a key driver as well as a constraint for economic growth. The Financial Sector throws up some contradictory facts about India and China. While India has developed a very strong financial system and institutions, it lags far behind in Foreign Direct Investment as well as in savings as given below.

Long-term equity-oriented capital flows reflect the participation by the rest of the world in a country's productive growth. India's share in global FDI remains poor at less than 1% which restricts capital formation in a major way compared with China's share of 12%. FDI in China is 13 times that in India.

China and India: Share of Global FDI



The institutional framework of the Chinese banking system is in an early stage in comparison with international standards. The system of internal assessment and credit rating mechanisms in Chinese banks is not robust. In India, the risk appraisal system is much more well established, especially in the case of private sector and foreign banks, which have implemented IT solutions, enabling a centralized credit appraisal system.

The lack of an adequate risk assessment system has resulted in large balances in non-performing assets (NPA) in the banking system. The asset quality of Indian banks has improved significantly over the past few years, with the gross NPL ratio improving to 8.8% in March 2003 from 15.7% in March 1997. As a percentage of GDP too, gross NPLs are small, at just 2.8%, compared with 25.7% in China.

As of September 2003, the composite capital adequacy ratio of the state-owned commercial banks in China was a mere 4.6%. The RBI has implemented a much stricter capital requirement norm, with the minimum CAR of 9% for Indian banks versus the Basle requirement of 8%. This has resulted in a relatively strong capital base in India, with the average CAR at 12.5% in March 2003.

The major factor which differentiates Indian banking sector from China is the stricter supervision by the Central Bank of India, RBI. The RBI has been at the forefront in terms of laying down strict norms to ensure stability of the Indian banking system.

In spite of a fragile financial system, China's high savings rate, coupled with low real interest rates, has resulted in sharp growth in capital expenditure over the past few years. Indeed, there has been over-reliance on banks for funding business capex. It has been reported in many studies that this has caused a macroeconomic imbalance and has resulted in a skewed credit to GDP ratio of 144%.

On the other hand, relatively low saving and poor access to foreign investment have been major factors hampering India's growth. China's individual saving rate is much higher at 45% as compared to India's 24%. The most important cause of a poor public saving in India is government high fiscal deficit, currently at 10% of GDP, is one of the highest of the emerging markets. The relatively low saving rate is a constraint on fixed investment and in the long run vitiates the growth outlook. India's challenge is to boost its savings rate to upgrade its infrastructure which would cut the cost of doing business and boost growth.

Although, greater financial integration has benefited large Indian companies by way of reduction in cost of capital, small and medium companies still suffer from relatively sticky interest rates ranging from 12-14% per annum compared to 5-6% in China.

Government Incentives:

Comprising a significant part of China's GDP, the electronics industry plays a major role in the economics of the country. As such the government does a lot to promote this sector and provides a lot of incentives to local as well as foreign investors investing in this sector. Government help starts right from the beginning with land and buildings provided

either free or at very nominal cost. A large number of state owned factories have been transferred to private management at zero/nominal cost; as a result they do not have any element of interest and depreciation on fixed assets, land and building, allowing them to sell their products at highly competitive prices. Interest rates are also very low and in some cases special interest rates are provided for hi-tech industries.

Further down the line, it was seen that the government regulates the prices of inputs required by the industry. These include basic raw materials and essential inputs which the government provides at controlled prices which in all likelihood are subsidized. Petrol, diesel and electricity are available at prices 30-40% lower than what we pay in India. These subsidized inputs along with an almost non-existent capital expenditure results in very low priced products. The labour structure in China was also found to have quite an interesting makeup. We learned that a number of temporary workers at some factories received a part of their wage from the state, which reduced the burden on the employer. We however could not find out the quantum or percentage of this support but such support was for temporary workers who had to be re-employed from time to time. This type of wage subsidy also helped manufacturers to cut costs.

Sustainability of the Chinese Model

Although China has left India far behind in terms of success in implementing many of the macro reforms, it has not really focused on the creation of an institutional framework including a strong legal system, capital markets and financial markets. Overcoming this might be the biggest challenge that China faces in sustaining its current high growth trend.

The problem here lies in the fact that while pursuing its objectives of economic growth through manufacturing it has neglected these areas and they still remain mostly under government control with little or no change over the last couple of decades. For example, there is hardly any competition in the banking system and there is over-dependence on banks to finance business investments. Unlike in manufacturing, there is hardly any foreign or for that matter domestic private ownership in banks. They are still controlled by the government. The legal system is another area which has remained rather underdeveloped with few lawyers and even fewer judges. The government needs to set up regulatory bodies to foster competition among players.

In contrast, India has developed a much stronger public institutional and regulatory infrastructure. India's relatively more evolved institutional framework is reflected in its less volatile growth environment. In particular, it has made significant progress in this area over the past 13 years of liberalization. It has already taken on the hard work of building a number of economic and political institutions – a stable democratic polity, reasonable rule of law and protection of property rights. Against this, China has achieved strong growth over the past 20 years, but will now face the major challenge of large-scale institutional transformation to reduce the risk of a major slowdown.

India's institutional framework encompasses a strong legal system, a well-controlled banking system under the active supervision of central bank, parliamentary bureaucracy,

independence of the press, etc. A large number of public institutional authorities have been around since independence, and many have been continuously strengthened to meet new challenges.

Another area where China needs to strengthen itself is its ability to create home-grown private entrepreneurs. This is highlighted by the fact that 47% of China's industrial output is through state owned and state controlled enterprises and a further 9.4% is through collectively owned enterprises.

That China's electronics industry is export oriented has already been discussed earlier, but the fact, that China's exported electronic products mainly consist of processed products made with imported materials or materials provided by foreign companies is less well known. According to one estimate, about 80% of China's electronics products were processed and assembled in China reflecting a low level of sophistication of China's electronics industry. However, things are bound to change with time as Chinese companies acquire expertise in R&D and expand their knowledge base.

In conclusion, we can say that China should be perceived, not as a threat but a great opportunity by Indian Electronics Hardware Industry provided we gear up to take advantage of the same. There are tremendous synergies between India and China and together the two countries comprise almost 40% of the worlds population. However no one wants to have a weak partner.

India needs to put its own house in order by ensuring the following -

- urgently rectifying the remaining lacunae in its policy framework
- rationalize its tax structure to match the world's best
- provide supportive infrastructure to facilitate efficient functioning of high tech electronics manufacturing and services industry
- initiate and encourage large investments in electronics component manufacturing

The above is possible only if there is a joint and focused effort by industry and government so that the we can overcome the significant disadvantages that we face due to not having started our journey on time.

Appendix: Key Economic Indicators – China

	2003	2004*	2005*
GDP (US\$ Bn)	1409	1564	1711
Real Growth Rates			
• Gross Domestic Product	9.1%	7.8%	7.5%
• Agriculture and Allied activities	2.5%	-	-
• Manufacturing, Construction, Electricity	12.6%	-	-
• Services	6.6%	-	-
▪ Per Capita GDP Growth (1980-2004) :	8.2%		
▪ Share of Manufacturing in GDP (2003):	39%		
External Sector			
• Exports (US\$ Bn)	438.5	526.2	578.8
• Imports (US\$ Bn)	413.1	551.5	590.1
• Trade Balance (US\$ Bn)	25.4	-25.3	-11.3
Financial Account			
• Foreign Direct Investment (US\$ Bn)	53.5	55.0	50.0
• FDI as % of GDP	3.8%	3.5%	2.9%
Reserves			
• Foreign Currency reserves (US\$ Bn)	403.3	470.0	500.0
Exchange Rate (as in April 05)			
• Average Exchange Rate (RMB/US\$ 1)	8.28	8.28	8.30
Interest Rates	5.3	5.8	6.3
1 Yr Working Capital Base Rate			
Telephones (Landline & Mobile) per 1000 (2003):	424		

Appendix: Key Economic Indicators – India

	2003	2004*	2005*
GDP (US\$ Bn)	510	601	670
Real Growth Rates			
• Gross Domestic Product	4.0%	8.2%	6.4%
• Agriculture and Allied activities	-4.0%	8.6%	2.9%
• Manufacturing, Construction, Electricity	6.2%	6.9%	7.0%
• Services	7.1%	8.7	7.8%
• Per Capita GDP Growth (1980-2004) :	3.7%		
• Share of Manufacturing in GDP (2003):	16%		
External Sector			
• Exports (US\$ Bn)	52.5	63.0	70.0
• Imports (US\$ Bn)	65.4	79.7	97.0
• Trade Balance (US\$ Bn)	-12.9	-16.7	-27.0
Financial Account		5.5	
• Foreign Direct Investment(US\$ Bn)			
Capital Account			
• Foreign Investment (US\$ Bn)	15	11.0	11.5
Reserves			
• Foreign Currency reserves (US\$ Bn)	115.3	127.6	145.3
Exchange Rate (as in April 05)			
• Average Exchange Rate (RMB/US\$ 1)	45.94	45.44	46.26
Interest Rates	10.3%	10.5%	10.5%
Commercial Banks' Prime Landing Rate			
Telephones (Landline & Mobile) per 1000 (2003):	71		

*Estimated, Ref : Morgan Stanley Report

List of Delegates:

Name	Company Name	Products Manufactured
Mr.R. Venkatraman Mrs.Geeta Venkatraman	PRECISION ELECTRONIC COMPONENTS MANUFACTURING COMPANY	Wire Wound Resistors, Potentiometers and Trimmers
Mr. B.S. Sethia	ELIN ELECTRONICS LTD	CD/Cassette Drives Mechanisms, Small Motors, Stepper Motors, Contract Manufacturing of Audio Sets, Small Submersible Pump for Room Coolers, Mini fountains, Speakers, Head phone, Ear phones, Switches and Connectors, Radios, Cassette players, DVD players, <i>Home Appliances such as:</i> Steam and Dry irons, Toasters, Mixer Grinders, Lighting Fixtures & Luminaries , Dies & Moulds, Rollers, Rings and other Rubber Parts, Precision Injection Moulded Plastic Parts, Laminations and Precision Sheet Metal Parts
Mr. Keshari Sethia	ELECTRONIC COMPONENT INDUSTRIES	Band Change Switches and Electronic Components
Mr. Subhash Goyal	DIGITAL CIRCUITS PVT. LTD	Electronic Manufacturing Services for OEM customers of consumer / Industrial / Automotive Electronics, Office automation and Telecom products. Supply of Fully Tested and Calibrated PCB assemblies or complete modules / Sub-modules using Surface Mount (SMT) / through Hole / Mixed technology
Mr. A.G. Rohira	ELCOMPO ELECTRONICS INDUSTRIES PVT LTD	Deflection Coils & Flyback Transformers, Line Drive Transformers, Torraid Transformers, Fixed Inductors & Drum Core Transformers, Line Filters Chokes, Linearity Coils
Mr. Pawan Sharma	VICTOR COMPONENT SYSTEMS PVT. LTD	SMPs Transformers , Toroidal Coils & Transformers , Line Filters , Inductors
Mr. Pradeep Kumar Agrawal	DIGITECH INDUSTRIES PVT. LTD.	Color TV , DVD Players , Microwave Oven
Mr. S. Kapil Dev	SINANICS COMPONENTS PVT. LTD	Transformer, Coils, Inductors
Mr. Gurdev Singh	GSP ELECTRONICS PVT. LTD	Coils and Transformers
Mr. Jai Kumar (Chairman)	DEKI ELECTRONICS LTD.	Plastic Film Capacitors, Plain Polyester, Plain Polypropylene Metalised Polyester, Metalised Polypropylene, X2, CDI, Miniature Box 5mm, 7.5 mm pitch x 2 Caf
Mr. Vikas Jain	BHANSALI UDYOG PVT. LTD.	CATV Coaxial Cables, RF Coaxial Cables, LAN/WAN Cables, Instrumentation Cables, Control Cables, Multi-pair Telephone cables, PCM screened HF cables, communication cables, Energy & Flexible cables, Custom Made Cables, Litz & Winding Wires
Mr. Prem K. Verma	MODERN RADIO COMPONENTS CO.	Rotary Switches, Alluminium Electrolytic Capacitors, Wire wound resistors, Carbon potentiometers

Mr. R.C. Sachdeva	MINISTRY OF COMMUNICATION and IT (Govt. of India)	Promotion of Electronic / IT Hardware and Software industry through following measures: Fiscal Policies, Export-Import Policy, Tariffs, Investment Policy, Joint Ventures, Free Trade Agreements, Implementation of ITA-1 of WTO, GATS, Venture Capital, Export Promotion, Interaction with industry Associations
Dr. R.C. Chopra	MINISTRY OF COMMUNICATION & IT (Govt. of India)	Promotion of Electronic / IT Hardware Manufacturing through Domestic Market Development, Promotion of—Investments, Strategic Business Tieups and Exports, Industry Trend Analysis, Interaction with industry Associations
Mr. Rajoo Goel	ELCINA ELECTRONIC INDUSTRIES ASSOCIATION OF INDIA	ELCINA was established in 1967 and is the largest and oldest Electronics Hardware industry association in India. Apart from the basic objective of promoting hardware manufacturing through active representation and advice to the Government, ELCINA has been networking with technical institutions, business promotion bodies both in India and abroad.

References:

1. *Presentation by Mr. Vinay Kwatra, Embassy of India in Beijing*
2. *Morgan Stanley : India & China : A Special Economic Analysis – July 2004*
3. *CII Mckensey Report - Made in India*
4. *Inputs from Delegates (List Attached)*