India-Telecom Manufacturing

In Fast Forward Mode

March 2006

Content

Introduction

"The Government of India recognises that provision of world class telecommunications infrastructure and information is the key to rapid economic and social development of the country. It is also anticipated that going forward, a major part of the GDP of the country would be contributed by this sector." This statement is from the preamble of the Government of India's New Telecom Policy 1999 (NTP 1999). One of the key objectives of the NTP 1999 is to "strengthen research and development efforts in the country and provide an impetus to build world-class manufacturing capabilities". The policy further states, "with a view to promoting indigenous telecom equipment manufacture for both domestic use and export, the Government would provide the necessary support and encouragement to the sector, including suitable incentives to the service providers utilising indigenous equipment".

It is these objectives and the supporting Government policies and decisions that have brought about a boom in the Indian telecommunications sector today, making it one of the top 10 telecom networks in the world and the second largest in Asia with more than 100 million subscribers and a tele-density of 12.28. According to the Telecom Regulatory Authority of India (TRAI), as of February 2006, the gross subscriber base of fixed and mobile services together reached 134 million (Fixed Service stood at 49.45 million and Mobile Services at 84.88 million).

Credit Suisse First Boston (CSFB), in its analysis "India telecom tour – the final frontier for wireless growth", believes that a robust macroeconomic backdrop, conducive regulatory environment, strong government support, rising telecom investment and competitive operator dynamics will drive the Indian subscriber base to swell to over 350 million by 2010, driving handset units from 29 million in 2004 to 96 million by 2010. The analysis further expects that the Indian wireless infrastructure market will rise 26 per cent to US$4.8 billion in 2006.

Morgan Stanley in its Industry View titled "India Telecoms" (December 7, 2005) has raised its expectations of the wireless subscriber estimates for India from 152.7 million as of March 2008 to 159 million (increase of 4 per cent). Morgan Stanley expects the net additions to grow at a faster rate of 3.1 million per month in FY2007 and 3.3 million in FY2008 as against an average growth of 2.2 million per month since April 2005.

The breathtaking speed at which the sector has grown has made the world sit up and take notice of the opportunities and the market potential. This has been further strengthened by the Government's decision to allow investment in manufacturing activities in India. The Government recognises that its vision of reaching 250 million telephone connections and a tele-density of 22 by 2007 cannot be achieved if the country continues to import technology and equipment. There is a pressing need to become self-sufficient in the field of telecom equipment manufacture that will meet domestic needs as well as provide export potential.

A study by the GSM Association estimated that as many as 930 million handsets might be sold in 50 developing nations between 2006 and 2010.

Background of Telecom Manufacturing in India

"Indian telecom sector has grown exponentially. However, the electronic manufacturing sector has been lagging behind its software brother. No country our size can afford to neglect manufacturing. In India, manufacturing accounts for only 16 per cent of the GDP. We need to take this percentage to 25. In a high tech sector like telecom, it is more important that our dependence on imports is greatly reduced."

- Hon'ble Thiru Dayanidhi Maran, Union Minister for Communications and Information Technology, Government of India speaking at the inauguration of Elcoteq India in April 2005

In 1994, when the process of deregulation of the Indian telecom sector began, the Government invited bids to operate cellular and basic services from private operators. These licences did not carry any mandatory requirement to buy equipment from indigenous sources. However, there was a clause giving weightage in the evaluation of the tenders for basic telephone services to those organisations using indigenous equipment. Private operators procured telecom equipment from foreign sources due to various reasons, including the quantitative restrictions on telecom equipment and the progressive reduction of customs duty on imports as per India's commitment to the World Trade Organisation (WTO).

During the period 1995 to 2000, Mahanagar Telephone Nigam Ltd. (MTNL) and Bharat Sanchar Nigam Ltd. (BSNL) acknowledged the growth of the private sector and the deployment of new technologies by amending the clause "Indian manufacturers" in their tenders to read "Indian manufacturers/ suppliers". This led to a situation where the procurement was made from Indian suppliers who were merely importing and supplying the equipment to these government owned companies.

Manufacture and Export of Telecom Equipment

Year	Production		Export	
	Rs. in crore	US$ in million	Rs. in crore	US$ in million
1997-98	9,960	2,213	296	65.7
1998-99	10,000	2,222	250	55.5
1999-00	10,760	2,937	180	40.0
2000-01	12,271	2,727	450	100.0
2001-02	15,437	3,430	150	33.3
2002-03	14,400	3,200	402	89.3

Source: Status Paper on the Manufacture of Telecom Equipment in India, Department of Telecommunications (March 31, 2004)

On the other hand, the private telecom operators had been importing directly from foreign suppliers.

According to the Department of Telecommunications "Status Paper on the Manufacture of Telecom Equipment in India" (March 31, 2004), some of the policy provisions were:

1. No industrial licence will be required for the manufacture of telecom equipment
2. 100 per cent Foreign Direct Investment (FDI) will be permitted in the telecom equipment manufacturing sector through the automatic route
3. The dividend income and the capital invested in telecom manufacturing will be fully repatriable
4. Technical know-how of up to US$ 2 million, net of taxes to be paid on an automatic basis. Royalties of up to 5 per cent on domestic sales and 8 per cent on export sales will also be permitted

According to the Paper, some factors impacting growth of telecom equipment manufacturing in India were:

1. Private sector service providers had no compulsion to use equipment manufactured by indigenous companies. Their procurement was dependent on the choice of technology, funding mechanism with long-term low interest credits by foreign suppliers
2. Indian R&D institutions were unable to keep pace with the changing technologies and therefore many of them had to close their manufacturing units
3. Government had allowed trading of telecom equipment to foreign companies under 'cash and carry wholesale trading'
4. With the rapid growth of GSM and CDMA, the entire demand was being met through imports
5. Indian companies like ITI had become traders, importing equipment and supplying to BSNL and MTNL
6. Manufacturing was based on orders from BSNL/MTNL with no commitment to continued supply
7. Foreign companies had no obligation to either transfer technology or set up manufacturing base and MNCs operating in India like Lucent, Alcatel, Ericsson and Siemens became traders

According to analyst estimates, the Indian electronics/IT and communications hardware sector was worth approximately US$ 9 billion during 2003-04 - a mere 0.7 per cent of the global electronics/IT hardware production of US$ 1300 billion.
The telecom equipment industry is currently estimated at around US$ 6 billion.

Current Scenario

The electronic hardware market is one of the fastest growing areas of the economy. The demand is expected to be around US$ 70 billion by 2009-10 and will be a key catalyst to propel the growth of the hardware sector. Not only must India encourage manufacturing, India must also position itself as a major location for sourcing of electronic components and products. According to the Department of Information Technology (DIT), if India is able to take advantage of these opportunities the industry can reach a level of nearly US$ 50 billion and generate an additional three to four million jobs.

Currently, around 80 per cent of the total telecom equipment demand is met through imports. Given the Government's vision and the current growth trends - of achieving approximately 250 million lines in the next three years with a tele-density of 22 - this would translate to equipment requirement of around US$ 28 billion to US$ 34 billion. Local manufacturing is expected to help India cut the US$165 million it spends each month to import telephones.

Most of the current investment in the telecom-manufacturing sector, is directed towards the manufacture of mobile handsets based on the galloping demand. Manufacturers realise that it makes economic sense to have a manufacturing base in India given the fact that India will emerge as one of the largest markets for mobile phones in the world. Other key factors that influence investment decisions towards India include availability of skilled talent, India's position on the software map and its design capabilities, besides Government incentives, competitive labour costs and a ready market.

Some reports indicate that US$1 billion will be invested in the next two years by telecom manufacturing companies to ride on the telecom boom currently underway in India. And this has a springboard effect, as telecom-manufacturing companies will also attract component manufacturers and other providers down the supply chain. As manufacturing grows and demand increases the indigenous supply base will develop, leading to greater economies of scale for manufacturers. Currently, electronic manufacturing in India requires most parts to be imported. According to some reports, the Government is expecting US$ 800-900 million FDI in the telecom manufacturing segment during 2005-2006.

Gartner predicts that the mobile infrastructure market in India, which reached US$ 1.2 billion in 2003-04, will grow to US$ 1.9 billion by 2008. However, the mobile infrastructure requirement is as high as US$ 32 billion by 2007 according to the Telecom Equipment Manufacturers' Association (TEMA).

Over the next five years the total capital expenditure on the tele-communications services industry is expected to be about US$ 22 billion of which US$ 14-15 billion is expected to be on mobile networks. According to sources, the Government was able to attract US$ 800 million foreign investment in 2005.

Rising demand for a wide range of telecom equipment, particularly in the area of mobile tele-communication, has provided excellent opportunities to domestic and foreign investors in the manufacturing sector. Leading global companies like Elcoteq and other OEM majors have already set up their manufacturing base. Nokia has also set up an integrated manufacturing facility near Chennai with an investment of US$ 150 million. With these initiatives, the telecom equipment manufacturing sector is expected to attract about US$ 855 million in the next 1-2 years. These companies will be manufacturing a variety of telecom products including mobile handsets for domestic and export markets.

EMS Industry in India

The worldwide Electronics Manufacturing Services (EMS) revenue is expected to increase from US$ 167 billion in 2004 to US$ 324 billion in 2009. According to industry sources, the world's top 10 EMS companies contributed to a revenue of US$ 80 billion in 2004.

iSuppli Corporation predicts that the Indian EMS and Original Design Manufacturing (ODM) industry will grow 21 per cent per year from US$ 774 million in 2004 to US$ 2 billion in 2009. The combined sector will enjoy a compounded annual growth rate of about 21 per cent each year. EMS companies setting up base in India are building telecommunications and consumer electronic equipment for Original Equipment Manufacturers (OEMs) for the Indian market.

Given the growth of the telecommunications sector, EMS companies can expect a boom in electronics manufacturing for the telecom sector when by 2009, 37 per cent of the EMS market will be for telecom manufacturing.

According to iSuppli Corporation, India's electronics consumption in 2003 was US$ 12.3 billion of which communications contributed 14.5 per cent - the rest being consumer, computers, industrial components etc.

The size of the India telecom opportunity and the speed at which the sector is growing has ensured that almost all global telecom equipment manufacturers have announced ambitious plans for India with several others waiting in the wings. A Government sponsored roundtable in September 2004 defined the telecom manufacturing opportunity in India in the next three years to be around US$ 23 billion to US$ 27 billion. While many components need to be imported, there are some electronics suppliers already in India for electro-mechanical devices, bare circuit boards, passives, plastics and telecom accessories such as headsets and adaptors. Elcoteq could source 30 per cent of the bill of materials value domestically.

According to news reports, over the last 18 months, more than 10 global companies have committed nearly US$ 5 billion to telecom manufacturing in India – with another US$ 2 billion expected to be committed soon. These companies will manufacture semiconductors, mobile phones, set-top boxes, personal computers and telecom base stations in India.

By end 2006, OEMs like Nokia, Motorola, Samsung, Sony Ericsson and LG which account for 77 per cent of the global mobile phones market, will start making mobile handsets in India.

Government Contribution to Change

In recent years, the Government has lived up to its promise of relaxing and easing regulatory policies to encourage the growth of the telecom manufacturing industry. Some major policy initiatives were taken by the Government in the Union Budget for 2005-06 and several initiatives were announced with positive impact on the sector such as:

- Zero customs duty on components and raw material – leading to a fall of up to 13 per cent in the prices of telecom equipment
- Further reduction in the peak custom duty from 15 per cent to 10 per cent may enhance the efficiency and competitiveness of the sector
- Estimated reduction of 3 per cent in the corporate tax rate and removal of mobile phones from “One in Six Criteria” for the purpose of income tax to further push up the growth of mobile telephony

The Government has formulated a series of programmes to support localised manufacturing including five-year tax holidays, duty free imports of capital equipment, customs and excise benefits for both OEMs and EMS companies and other suppliers who provide components for telecom products, handsets or networking equipment. It has also introduced a 4 per cent Special Additional Duty (SAD) on all imported handsets, thereby giving locally manufactured handsets a 4 per cent advantage because all components used in their manufacture can now be imported duty free. There has also been a reduction in the corporate tax rate, and companies incorporated in India with 100 per cent foreign ownership are now considered domestic companies under Indian laws.

The Government also introduced Special Economic Zones (SEZ) in the country to provide an internationally competitive and hassle free environment for exports. With a slew of facilities related to customs and excise, income tax benefits and 100 per cent FDI under the automatic route, among other advantages, the SEZ becomes an ideal location for manufacturing companies establishing a base in India.

The SEZ along with the Software Technology Park of India (STPI) is a 100 per cent export oriented scheme for undertaking software development for export. The STPI and EHTP encourage companies into hardware and software manufacture with special incentives and schemes. The new SEZ Act 2005 is currently under finalisation by the Union Ministry of Commerce and Industry.

The Government is also encouraging EHTP to be set up to promote electronics manufacturing in the country. EHTP provide several benefits to companies including: foreign equity of 100 per cent permissible for companies, raising of FDI cap from 49 per cent to 74 per cent in mobile and fixed line telephony through the automatic route (however, management control to be in the hands of the Indian company), import of capital goods, raw materials and components duty free and access to the Indian domestic market up to 50 per cent of the free-on-board value exports. Units under EHTP can be set up for integrated operations in both software and hardware.

These have been seen as landmark decisions and herald the Government’s commitment to opening up of the telecom sector. Besides, having joined the WTO in 1996, India agreed to lift customs duty on specific electronic production by 2005, including computers and peripherals, printed circuit boards, microprocessors and other chips.

According to analysts and industry sources, the major obstacles for growth of the sector in India is inadequate infrastructure, including power, roads and ports. Unless the Government takes concrete steps to address these issues, they may not witness the expected growth rates. The Government has however announced significant investments in building and upgrading the road network in India.

The Government and the Ministry of Communications and Information Technology have been aggressive in “selling” India’s capabilities globally with the Minister undertaking numerous visits to Finland, Japan (where a special MoU was signed enhancing co-operation between the two countries in the ICT sector) and other countries to promote India as a telecom manufacturing location and to highlight the importance and benefits of doing business with India and in India.

Where are we now?

Industry sources estimate that the Indian electronics sector will grow to about US$ 35.6 billion by 2010.

According to a survey by Voice & Data, the market for telecom infrastructure equipment grew by 71 per cent in 2004-05 while enterprise networking crossed the US$ 1.3 billion mark. The Indian communications equipment market, including infrastructure, enterprise, end user equipment and telecom software grew by 43 per cent to US$ 9 billion from US$ 6.3 billion in 2003-04. Only the equipment market size was US$ 6.8 billion in 2004-05, up from US$ 4.8 billion the previous year.

The year 2005 was eventful in India's telecom scene as not only did the country witness an exponential growth in services and number of subscribers for mobile telecommunications, but also major global equipment vendors and EMS companies committed to setting up and investing in India. Elcoteq, a leading global provider of EMS in the communications technology field, was the first global company to manufacture telecommunications equipment in India with a facility that went into production in April 2005. Other global companies like LG, Alcatel, Nokia, Philips, Samsung, Motorola and even Chinese handset manufacturers like Bird, BenQ and others have announced investment plans to leverage the growth of the industry in India.

According to Gartner, the interest in setting up a manufacturing hub in India arises from two aspects – a burgeoning domestic market and a global sourcing facility. Moreover, local manufacturing would also help companies become cost-competitive, especially in a price-conscious market like India.

With telecom manufacturing getting an investment boost in India, the semiconductor industry and other supply chain industries will experience growth. Therefore, as more global companies commit themselves to manufacturing in India, experts feel this will automatically lead to the creation of a feasible electronic manufacturing ecosystem.

Another key development is that companies are struggling to reduce product life cycle time to introduce new products into the market from 6-7 months to 3-4 months. Manufacturing in India for India, will lead to a reduced cycle time of around 50 per cent.

Besides, manufacturing in India could save costs by 2-3 per cent – an attractive proposition for handset manufacturers whose margins are being eroded by fierce competition.

Some reports indicate that the National Telecom Policy, to be finalised in the coming months, will make it mandatory for foreign telecom equipment vendors to set up manufacturing units in India if they are to bid for and supply equipment to Indian public sector companies. Many State-run telecom firms have decided to stipulate that 20 per cent of the value of the equipment used must be made in India.

"India has the potential to develop and manufacture electronics/IT hardware for the global market and gain higher global share besides meeting the country's future requirement in the converging areas of information, communication and entertainment."

- Preamble of the Draft Paper on National Electronics/IT Hardware Manufacturing Policy of the Department of Information Technology

The Opportunities

According to Arête Research, every operator in India is undertaking massive expansions trying to boost subscribers and market share. Network capacity is expected to nearly double in 2006. All five national operators are spending up to US$ 1 billion on network expansion over the next 12-15 months. With equipment prices already at the world's lowest it's a competitive market for handset makers. BSNL has decided to issue a single tender for installing an additional 60 million GSM lines. This will possibly be the largest-ever telecom expansion deal in the world and is estimated to be worth over US$ 5 billion – that covers towers, electronics, integration and installation; leading to immense opportunity for OEMs operating in India. The Company Board had earlier decided to allow all equipment vendors to bid for its tenders. It had also set aside the recommendations of a high-level committee, which had proposed that only the existing vendors - Nokia, Motorola, Nortel, Ericsson and ITI-Alcatel - be allowed to bid. This decision benefits global telecom equipment vendors like Siemens, Lucent as well as Huawei Technologies and ZTE of China. The government has stipulated that the tender will insist that all vendors set up some manufacturing facilities in the country as a precondition.

Ericsson and ITI-Alcatel have recently started indigenous manufacture of base stations, while Nokia has set up a unit in Chennai to manufacture both handsets and network equipment. Siemens, Motorola and Huawei Technologies have also announced that they plan to make substantial investments in the manufacturing sector in India.

"We're not talking millions any more when we talk about the India contract manufacturing market. Very soon, these markets will be in the billions. That is very appealing to a business manager from any node of the electronics supply chain."

- Adam Pick, Senior Analyst for EMS and ODM services, iSuppli

Indian R&D companies now have substantial number of employees working on custom software, legacy product roadmaps, embedded systems and running back office functions for operators. Nearly 10 per cent of telecom equipment R&D is now done in India, but growing 40 per cent per annum. At this pace, Indian IT vendors could have 50 per cent of industry R&D headcount by 2010.

In the next 22 to 31 months, Indian telecom companies will invest around US$ 15.8 billion on network equipment alone. A substantial amount of this will be done by State-owned BSNL and MTNL.

Given the demand in the country, the emphasis has now shifted to low cost products – handsets and equipment – and that is the reason for large-scale investment in manufacturing in India.

With the entire telecom industry valued at over US$ 27.2 billion and with leading OEMs and EMS companies setting up operations in India, the telecom boom will also lead to a boom in the ancillary industry.

Nokia establishing a manufacturing facility in Chennai and announcing that it will rollout India-made Nokia handsets, with an investment of between US$100-150 million is another milestone that establishes India on the world's telecom manufacturing map. In the GSM category, Nokia holds over 55 per cent market share in India and India is the Company's fifth largest market. Nokia has also received a contract worth around US$141 million from BSNL for GSM/EDGE and GPRS network expansion in North India.

Besides global companies investing in manufacturing in India, the Government has announced a US$ 23 billion-revival plan for the State-owned Indian Telephone Industries (ITI) Bangalore. ITI will start manufacturing mobile phones with help from global equipment major Alcatel at its facility in Uttar Pradesh, which has a capacity of manufacturing three million units.

Motorola has also announced that it will begin manufacturing in India by assembling its hottest selling and popular low cost C115 mobile handset (less than US$ 45) "Made in India" through a third party equipment vendor. This will also help Motorola comply with the stipulation of BSNL that prospective bidders for its equipment tenders should have a manufacturing facility in India.

Another key trend has been the investments being made by global companies to leverage India's R&D and design capabilities. Companies like Intel have announced investments for high-end design and development work on chips. Texas Instruments' R&D centre in Bangalore is working on analogue and digital signal processor digital chip design. Other companies like Motorola, Hyundai, ZTE Corporation, Qualcomm, Huawei, Nokia and Ericsson have all committed investment to leverage India's capabilities in design.

The last 12 months have been witness to announcements by global companies like Elcoteq and Nokia that will redefine telecom manufacturing in India, and signal the emergence of a new industry that is likely to benefit the Indian economy. Elcoteq, with its ODM capabilities globally, acts as a one-stop shop for world class product design and offers flexibility of business models for customers including New Product Introduction, Original Design and Manufacturing, Collaborative Design and Manufacturing and Joint R&D and Contract Manufacturing. All of this will benefit global companies setting up base in India, who can leverage Elcoteq's expertise to manufacture in India or for the Indian market.

Supply Chain Concept

The Government has already taken various steps to ease the entry of global companies into India. However, several other anomalies need to be dealt with. One critical need is the access to components, spare parts and other hardware and software requirements at a cost competitive rate. Almost 85 – 90 per cent of the costs of an EMS companies are linked to materials and hence high inventory offtake is a must for a competitive and profitable EMS industry.

The Government needs to promote supply chain development in major manufacturing hubs. This will lead to cost advantages as well as help the manufacturing process with easy availability of components. Local manufacturing will build capabilities and increase employment as well as encourage the development of the sector further. Currently, there is a lack of competitive supply chain for electronics components in India and very few world-class electronic component manufacturing and supply chain facilities. Therefore, 95 per cent of the material cost has to be imported into the country.

For developing an effective manufacturing supply chain, the Draft Paper on National Electronics/ IT Hardware Manufacturing Policy of the Department of Information Technology states that a 'Hardware Manufacturing Cluster Park' needs to be set up across the country. These would be special areas with each location having its own focus. Industries promoted in these Parks should not be seen in isolation but in relation to each other – as forward and backward linkages in the value chain. These Parks would be provided infrastructural support in terms of uninterrupted power supply, water, telecom facilities and other infrastructure needs. Most importantly, these areas are to have single window clearance and special tax benefits.

"It is an industry coming to India – not single companies."

- Antti Piippo, Chairman, Elcoteq SE

The large telecom equipment manufacturers are likely to bring in their component suppliers to complete the entire manufacturing ecosystem, much on the lines of how the global automobile industry operates.

The establishment of EMS and OEM companies in India is also a boon for global component manufacturers already in India. Examples include the US$ 957 million Nypro (plastic moulding), US$ 118 billion Tyco Electronics (connectors), and US$ 2.5 billion Molex (connectors), all US based companies. Their operations are small now and largely cater to white goods manufacturers.

OEM and EMS companies expect the suppliers to provide them with quality, cost competitiveness, on-time delivery, service and high technology backed by R&D.

The Government has already undertaken steps to encourage the establishment of a supply chain facility through local manufacturers as well as international investment, and has put together incentive schemes like the SEZ and EHTP.

These special schemes have…

- Income tax exemption for 5 - 15 years
- Duty free import of components and consumables
- Duty free import of capital goods
- Duty free import of leases, rentals, free of cost transfers and second hand capital goods
- Duty exemption on local procurement of components, consumables
- Refund of local taxes paid on local procurement of components and consumables
- Duties exempted even if the components are used in the manufacture of products for domestic sale
- Extension of duty free benefits to EMS companies suppliers
- "Fast Channel" customs clearance process

The consumer electronics and telecommunications sector will be the major growth sectors having a production base of US$ 11 billion today, and can increase by 75 per cent in four years with just one telecommunications supply chain partner network.

Why Manufacture in India

India is one of the fastest growing markets for mobile tele-communications, and there are great opportunities for manufacturing services. With a population of over one billion people, India represents one of the most exciting and fastest growing areas for handset and network equipment OEMs and EMS providers.

India has become an extremely attractive location for manufacturing because of its talent pool of engineers, software developers, designers and a highly skilled workforce with global quality standards. The trend for global EMS companies has been to establish manufacturing capacities in countries with growing markets or proximity to vast markets, favourable costs and a large pool of technical talent.

According to news reports telecom manufacturing is cheaper in India than in other neighbouring countries. If the supply chain is based out of India, it is possible to make a mobile phone that is 5-7 per cent cheaper in India than in other neighbouring countries. India also has R&D capabilities which brings down development costs. R&D accounts for 40 per cent of a product's development which may otherwise have to be done in the US or Europe. Over the last 5-7 years, India has emerged as one of the leading R&D and design bases for multinational IT companies like Texas Instruments, IBM and Microsoft and telecom companies like Motorola, Alcatel and Ericcson. With R&D and design capabilities already existing in India, costs in India become significantly lower than in developed countries, and setting up a manufacturing base in India is a form of backward integration for global telecom companies.

Another possibility for equipment manufacturers is exports, particularly of mobile handsets. During 2004, Indians purchased 25 million mobile handsets worth US$ 2.8 billion. That figure is expected to go up to 65 million in 2006 and 100 million by 2010. Now, if the announced plans of companies like Elcoteq, Nokia, Samsung and LG are on target, starting 2010, upwards of 125 million handsets will be rolled out of Indian factories every year. That opens up the possibility of exporting cheap India-made phones to other emerging markets. LG, for instance, expects to export 50 per cent of its production in India by 2010.

One such emerging market for exports is Africa, which being close to India, offers a geographical advantage as well.

Other factors include:
- Availability of a highly skilled and educated workforce
- Growing customer base and comparably competitive costs
- Government's agenda for telecommunications and ambitious growth plans
- Commitment of the Central Government and local Government support
- Huge population and rapid increase in the telecom footprint (over 1 billion people and a mobile phone penetration of only around 3 per cent!)
- Steady increase in the subscriber base
- Cost benefits and availability of technology
- Availability of skilled workforce
- Sound infrastructure development plan covering road works, high capacity data links, reliable power supply and an international airport
- Large existing domestic customer base
- Existence of key customers and OEMs
- Existence of suppliers close to the manufacturing base

India's R&D capabilities are one of the most advanced in the world and 60 per cent of the world's leading product companies and OEMs source a part of their technology from India.

Case Study - Elcoteq

"This inauguration is more than a factory opening. It is a milestone. It heralds India's transition from a service-oriented economy to a manufacturing-oriented economy. It will increase local production of components through a supply chain cluster. It will bring cost benefits to consumers and generate employment. It will provide a lead to many other multinational corporations."

- Mr Antti Piippo, Chairman of the Board of Elcoteq SE, Founder and Principal Shareholder at the inauguration of Elcoteq's facility in Bangalore in April 2005.

Elcoteq, a leading global provider of electronics manufacturing services (EMS) in the communications technology field, is the first global company to manufacture telecommunications equipment in India. Elcoteq inaugurated its facility in Bangalore in April 2005. This inauguration heralded the emergence of electronics manufacturing services in India and signalled India's firm intention in establishing itself as a global telecommunications-manufacturing hub.

Thiru Dayanidhi Maran, Union Minister of Communications & Information Technology stated that the inauguration of Elcoteq's facility in Bangalore "demonstrates India's potential for growth in two critical areas – telecommunications and electronics manufacturing services."

He added, "We believe this is a significant development that will spur other global companies to explore manufacturing opportunities in India in this fast-growing and highly productive sector."

"Telecommunications services have been growing exponentially, but the electronics-manufacturing sector has been lagging behind. With Elcoteq's initiative, and the impact it will have on the industry, I am sure we can look forward to meeting the growing demand from India's tele-communications sector locally."

"This facility will have far reaching implications for India's manufacturing sector and employment generation. It will result in cost savings to the economy in terms of our import bill and most importantly, impact the end consumer in terms of lower prices."

Elcoteq's global experience and capabilities coupled with its presence in India will enable customers to benefit from optimised costs, reduced time and a global delivery model helping global customers localise and local customers globalise.

Another key reason that Elcoteq chose India to set up base is that India is also where customers want to be, to do business. It has therefore become an extremely attractive location for manufacturing because of its talent pool of engineers, software developers, designers and a highly skilled workforce with global quality standards.

Elcoteq has the first mover advantage in the industry and has served as a catalyst for the development of hardware manufacturing in India. The Bangalore facility has strengthened Elcoteq's existing customer relationships as well as developed new business opportunities – given that it is the first global EMS company to actually begin operations in India.

The customers located in India can benefit from world-class manufacturing and supply chain management services as supported by Elcoteq's global professionals and consistent network.

When fully operational, Elcoteq's investment in Bangalore will be in the range of US$ 50-100 million which comprises investments, working capital and the development of the supply chain. The plant is a wholly-owned subsidiary, Elcoteq Electronics (India) Pvt Ltd in Bangalore, India. This reiterates the Company's commitment to clients, the country and the region. By leveraging its global scale and market leadership, Elcoteq is able to develop products more efficiently with competitive cost. As a result, Elcoteq delivers more value to customers and to their consumers too with:

- Globally consistent plant network, standardised machinery, uniform systems and processes to enable superior time-to-market
- Transferability of skills, technologies, products, assets and human resources on a global basis

Key drivers for Elcoteq in choosing to do business in India is the country's large domestic demand for mobile communications and its sizeable growth potential. There is significant opportunity to develop a world class, competitive telecom hardware manufacturing industry in India. India already has proven capabilities in software and hardware design that could readily be leveraged to support the telecom industry.

Elcoteq operates on four continents and in 15 countries and offers a full range of services to OEM clients in India, both:

- Terminal Products (TP) - product groups include mobile phones and accessories, wireless modules and digital devices
- Communications Network Equipment (CNE) - equipment for wireless and wireline networks and enterprises, e.g. cellular base stations, WiMAX equipment, broadband access systems, optical and digital transport equipment and microwave systems

The Elcoteq facility, with a total area of 5,400 square meters, will employ 1000 personnel when fully operational. The facility, in line with Elcoteq global standards, is equipped with the latest manufacturing technologies, including SMT (Surface Mount Technology), testing and ESD (Electrostatic Discharge) control. The facility has both a high volume and low mix plant for Terminal Products and Communications Network Equipment.

Very recently, Elcoteq has further enhanced its business portfolio in India to expand the engineering services it can offer. This capability will enable Elcoteq to provide lifecycle support and full turnkey assembly and engineering services to communications technology OEMs.

The CNE business area manufactures equipment for wireless, wireline and enterprise systems (base stations, switches, routers, optical devices etc.) to facilitate the introduction of new generation networks in India. Elcoteq's CNE service portfolio includes integrated offerings across the spectrum from collaborative design, sourcing and supply chain, New Product Introduction (NPI), manufacturing including assembly and testing, system integration and lifecycle management and maintenance.

With domestic telecom companies expanding capacities and building their infrastructure backbone and with global OEMs establishing a presence in India, Elcoteq believes that this is the right time to introduce Elcoteq's CNE "Engineering Services" capability in this market. In many ways, Elcoteq can act as a gateway for OEMs in India as the company can partner with them to be a one-stop shop and meet all their service needs - from board and system assembly up to full turnkey supply chain and engineering services.

"In terms of growth opportunities, the Indian market is number one in communications. With a population of over one billion people, mobile phone penetration of a mere 3%, and a telecom services market growing at over 100% annually, India represents one of the most exciting regions for handset OEMs (Original Equipment Manufacturers) and EMS providers."

- Mr Jouni Hartikainen, President and CEO, Elcoteq SE.

Elcoteq sees tremendous scope in the Indian telecommunications market in India. It is a country in which demand for mobile phones and telecommunications networks is extremely high.

There are huge opportunities for manufacturing services in the telecom space in India. That is why India has seen the frenzied activity it has in the last year with global OEMs investing in the market. Global OEMs – most of which are Elcoteq's current or potential customers – have come calling to India given the potential of the market. With Elcoteq having already established a manufacturing base and given its global expertise, it is well positioned to support the OEMs business growth and plans – both in India and in the Asia Pacific region.

Elcoteq is now working with its customers to enable them efficiently enter the Indian telecom space by replicating the global partnership in India. Elcoteq will therefore act as a one-stop shop to enable global customers localise – in terms of marketing knowledge, market entry and providing global products and services in India and local customers globalise.

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