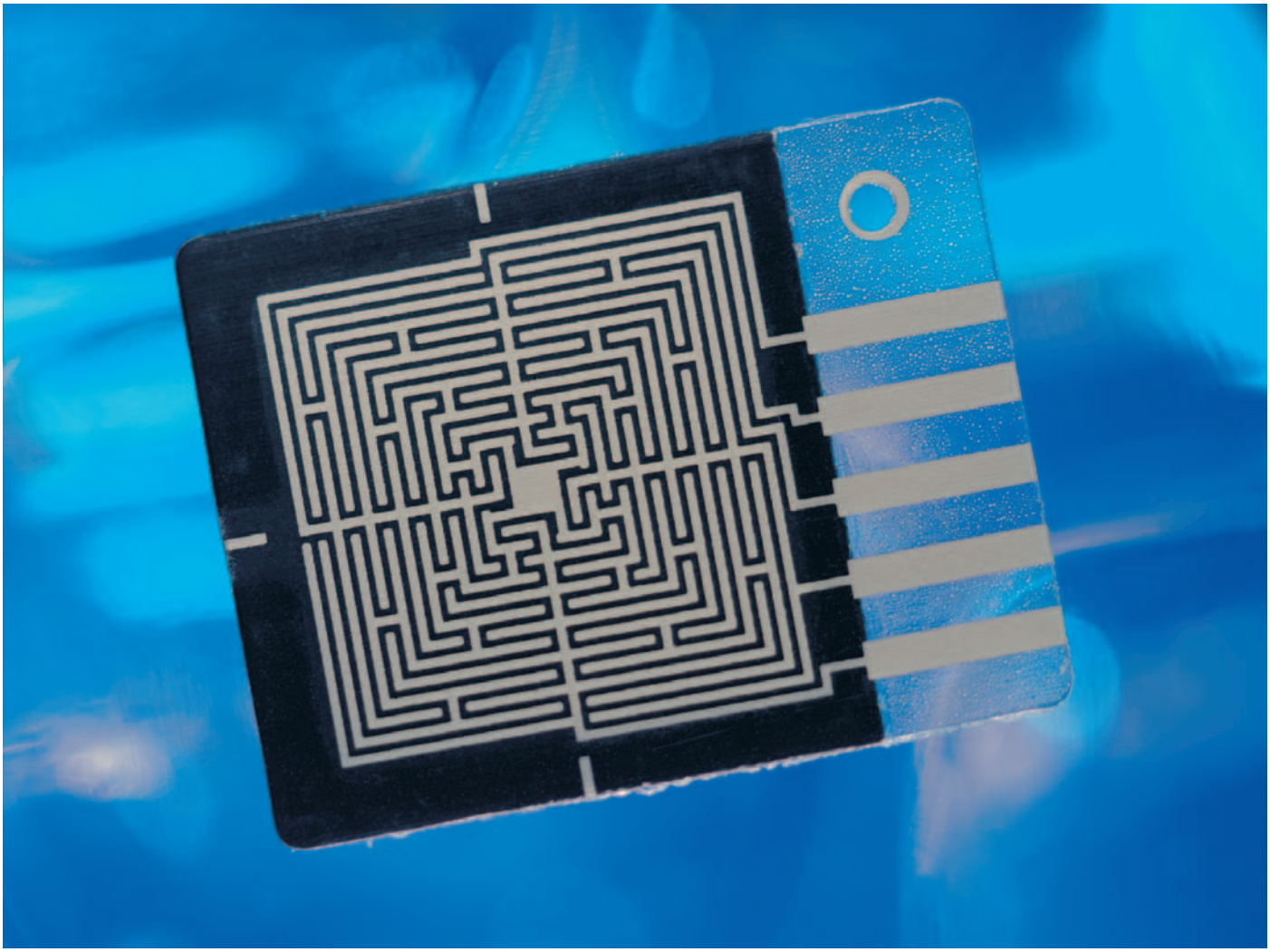
Electronics

MARKET & OPPORTUNITIES



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Electronics

MARKET & OPPORTUNITIES

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A report by KPMG for IBEF

Introduction

The global electronics industry is growing rapidly. From an estimated size of US$ 950 billion in 2005, it is estimated to grow to nearly US$ 2.1 trillion by 2010. The market is dominated by Asian countries, such as China, Taiwan, Singapore and South Korea. The industry is characterised by rapid innovation and speed to market, short product life cycle, highly automated manufacturing and high volume production resulting in consistent quality at low cost and profit accrual through volumes.

In the global context, India is ranked 26th worldwide in terms of sales and 29th in terms of production. India's electronics industry may appear nascent by global standards. But growth in this sector has been consistent in recent years.

The Indian Electronics Industry can be categorised into six sub-sectors, namely consumer electronics, industrial electronics,computers,strategicelectronics,communication and broadcasting equipment and electronic components.

The total size of the industry during 2006-07 was US$ 25 billion. The market is growing at 25 per cent CAGR and is expected to reach US$ 70 billion by 2010 and US$ 158 billion by 2015. Some of the indicators of this phenomenal growth potential are as follows:

- India is adding 2 million mobile phone users every month. With telecom penetration at 10 per cent this growth is expected to continue over the decade
- Penetration for other electronic products like computer/IT products, auto electronics, consumer electronics etc is at 20 per cent
- Electronics exports have also seen a healthy CAGR of 15 per cent over the period 2000-06

The key segments of the Indian Electronics industry are discussed separately in the following sections.

KEY SEGMENTS

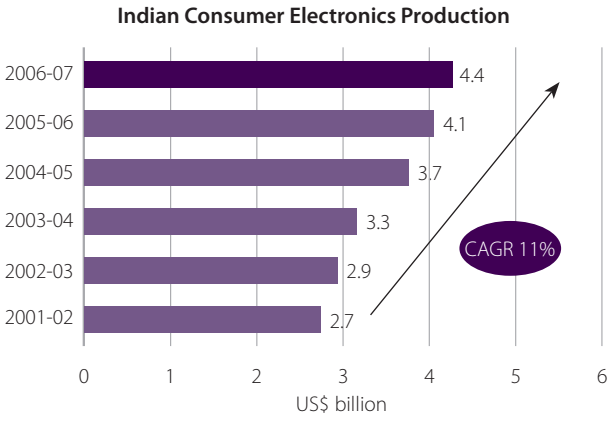
The consumer electronics sector dominates the industry with 33 per cent share and has been growing strongly drive ncreasing income levels and spending propensity among Indian consumers. Industrial electronics, with 17 per cent and communication and broadcasting, with 15 per cent are the other significant segments.

India's Electronics Industry Segments - 2006-07 - US$ billion, Percentage Share	
Consumer Electronics	4.9, 33%
Industrial Electronics	2.6, 17%
Communication & Broadcasting	2.3, 15%
Electronic Components	2.2, 14%
Computer Hardware	2.1, 14%
Strategic Components	1.1, 7%

Source: www.elcina.com Indian Electronics Industry overview

Consumer Electronics

Consumer electronics consists of products that are directly consumed by end-users, such as televisions, VCD/



Source: www.mit.gov.in, Ministry of Information on technology of India Government

MP3 players, microwave ovens, etc. This segment has a large manufacturing base, and is quite competitive, with presence of several global players in India. The market has seen a CAGR of 18 per cent over the period 2001-2007.

The actual production of consumer electronics was US$ 2.7 billion in 2001-02 and grew up to an estimated US$ 4.4 billion in 2006-07 .

Colour Televisions Drive Consumer Durables growth

The growth has been primarily powered by colour televisions (CTV), which grew from 7.5 million units in 2002-03 to nearly 12 million in 2006-07. A key aspect of this growth has been the rapid growth in demand for hi-end televisions, particularly flat screen TVs (FST), plasma TVs and liquid crystal display (LCD) TVs. It is estimated that the share of FST has gone up from about 20 per cent in 2004-05 to more than 50 per cent in 2006-07. LCD TVs have registered a growth of almost 400 per cent in 2006-07, to reach a volume of about 15000 units. The market size for plasma TVs is estimated to be about 50,000 units.

Growth in the CTV demand has been driven not only by increasing income levels and affordability, but also by increasing penetration and breadth of cable television, proliferation of regional and national channels and live telecasts of popular events such as the cricket World Cup. Other growth segments in consumer electronics include DVD/VCD players, set-top boxes (STBs) and other high end products such as home theatre systems

These trends are a reflection on increasing consumption and aspiration levels among Indian consumers, driven by demographic and lifestyle changes. These trends augur positively for the growth of the consumer electronics segment in the country.

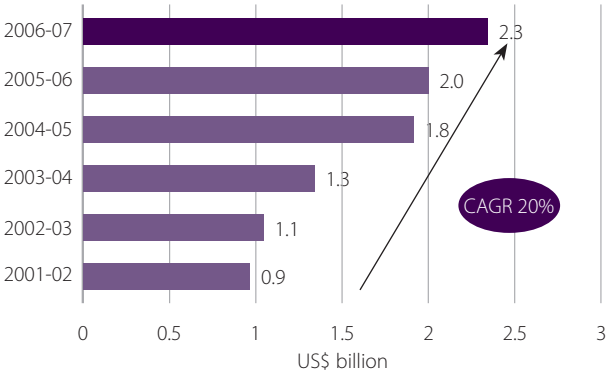
Industrial Electronics

Industrial electronics includes products that are used by other industries, such as process control instrumentation, automation systems, Test and Measuring (T&M) instruments and medical instruments. The market for computer hardware has grown at a CAGR of 20 per cent during 2001-02 to 2006-07. The production of industrial electronics stood at US$ 0.9 billion in 2001-02 and increased to US$ 2.3 billion in 2006-07.

One of the issues facing the segment is the lack of inter-operability of subsystems when integrating, as these are available as independent packages by different suppliers and there are no uniform standards. There is still a dependence on imports for hardware and software. The Government of India is trying to address this issue through a national collaborative development initiative.

Growth in industrial production and focus by industry on better controls, processes and systems are expected to drive growth in this segment in future as well.

Indian Industrial Electronics Production



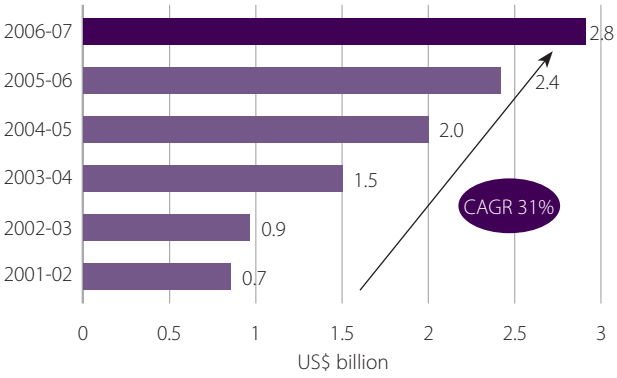
Source: Indian Electronics Industry Overview

Computers

This segment includes personal computers, servers, workstations, supercomputers, data processing equipment and peripherals such as monitors, keyboards, disk drives, printers, plotters, digitizers, SMPS, modems, networking products and add-on cards. This has been one of the fastest growing segments in the Electronics sector, with a CAGR of nearly 31 per cent during 2001-02 to 2006-07.

The actual production of computers was US$ 0.7 billion in 2001-02 and went up to US$ 2.8 billion in 2006-07.

Indian Computer Production Segment



Source: www.elcina.com, Indian Electronics Industry - overview

The industry in the area of PCBs, connectors, diskettes and CDs experienced a positive growth.

High corporate consumption and buoyancy in small towns is driving sales of personal computers. The market for PCs is estimated to have touched 2.96 million units in the first six months of fiscal 2006-07, a growth of 19 per cent over the corresponding period, the previous year. The total PC sales in 2006-07 are estimated at 6.5 million units. Within PCs, sale of notebooks is estimated to have grown by nearly 180 per cent, although from a low base while desktop computers registered 8 per cent growth in 2006-07.

The sustained growth in India's IT & ITES sectors and increased use of IT by businesses in other service sectors as well as manufacturing have driven growth in demand for computers. As these drivers are expected to remain strong in India, the growth in this segment would continue to remain strong.

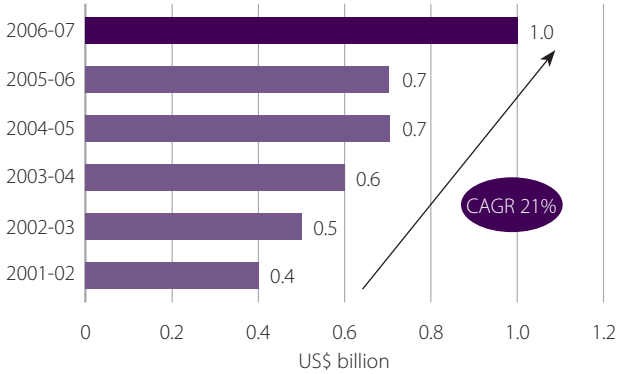
Strategic Electronics

The strategic electronics segment covers the area of satellite based communications, navigation and surveillance, underwater electronics and infra red-based detection, disaster management and GPS based Vehicle tracking systems. The segment has a number of manufacturing units, both in the public and private sectors. The market size of this segment has shown a CAGR of almost 21 per cent during 2001-02 to 2006-07.

The production of strategic electronics, which was US$ 0.4 billion in 2001-02, increased to an estimated US$ 1 billion in 2006-07.

In many cases, technology for strategic electronics sector is not available off the shelf and needs to be developed indigenously. With the opening of strategic electronics to the private sector, there has been emphasis on attracting private sector organisations for indigenisation of a variety of products and technologies. This is expected to fuel growth in this segment

Indian Strategic Electronics (Production)

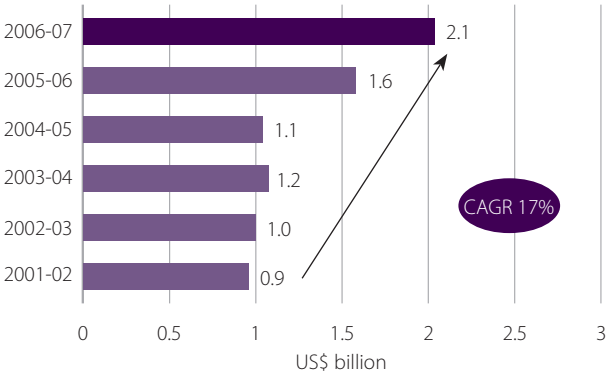


Communication and Broadcasting Equipment

The communication and broadcasting equipment segment includes digital exchanges (EPABX, RAX, TAX and MAX), transmission equipment such as HF / VHF / microwave trans-receivers, satellite communication terminals, optical fibre communication equipment, troposcatter equipment, two-way radio communication equipment, etc.

The market in this segment witnessed a CAGR of 17 per cent during 2001-02 - 2006-07. Production of communication and broadcasting equipment stood at US$ 0.9 billion in 2001-02, which increased to nearly US$ 2.1 billion in 2006-07

Indian Communication and Broadcasting Equipment



Source: www.elcina.com, Indian Electronics Industry - overview

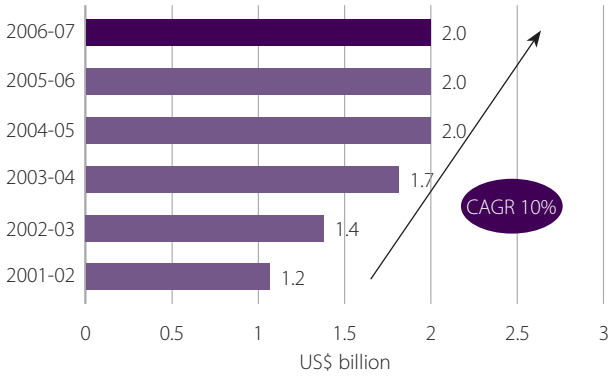
Growth in this sector is being driven by rapid expansion in India's telecom sector. India had a gross telephone subscriber base of 190 million in the end of 2006, of which nearly 150 million accounted for mobile users. The number of broadband users was about 2.1 million. The estimated teledensity approximated 17.16 per cent. There has been a transformation in media broadcasting in recent times, with increasing penetration of Direct-To-Home (DTH) transmissions by both the national broadcaster and private players.

Given the current and expected growth in the telecom sector, nearly 250 million subscribers can be expected by end 2007 with the number of broadband users increasing to 20 million by 2010.

Electronic Components

The electronics components segment caters to the requirements of consumer electronics, telecom, defense and information technology sectors. The components in production in India at present include TV picture tubes (Black & White and Color), monitor tubes, diodes and transistors, power devices, ICs, hybrid microcircuits, resistors, capacitors (plastic film, electrolytic, tantalum, ceramic), connectors, switches, relays, magnetic heads, DC micro motors and tape deck mechanism, PCBs, crystals, loudspeakers and hard and soft ferrites.

Indian Electronic Components (Production)



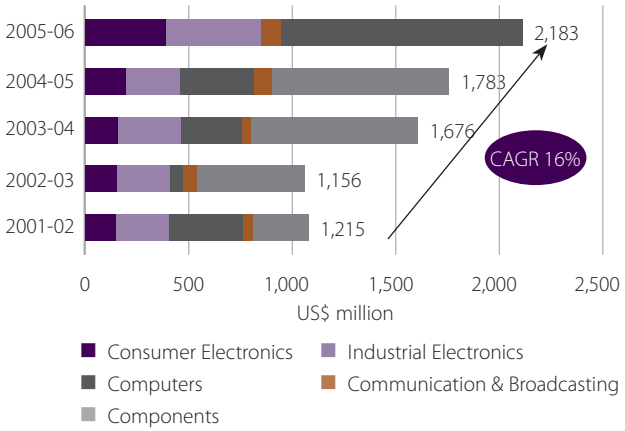
The consumer electronics segment, communication and IT sectors are driving growth in the electronic components segment. The electronic components market grew at a CAGR of 10 per cent between 2001-02 and 2006-07.

The key product groups that have driven growth in components include CTV picture tubes, optical discs, PCBs, connectors, ferrites, etc. Growth in this segment has been primarily driven by growth in the user segments, viz, CTVs, PCs, etc. The outlook for the sector looks positive.

Exports and Imports

Exports of electronics products from India have been increased at a rate of 16 per cent CAGR over the period 2001-02 to 2005-06. The key segments, which contributed to exports, have been consumer electronics, industrial electronics and components. The value of exports of hardware in 2005-06 was US$ 2.1 billion and for 2006-07, it is estimated to be nearly US$ 2.5 billion.

Indian Electronics Industry Export - Segment-wise



The exports of software have been growing at over 30 per cent, and stood at US$ 31.3 billion in 2006-07.

India imports a major part of its requirements of electronics materials, components and finished goods. The imports during 2005 stood at US$ 12 billion.

INDIA'S COMPETITIVE ADVANTAGES IN THE ELECTRONICS INDUSTRY

While the electronics sector in India is currently small, there are several advantages that India offers the sector that can be effectively leveraged to achieve quantum growth. These can be categorised under three heads:

- Availability of skilled resources
- Favourable Demand conditions
- Policy and Regulatory Support

Availability of skilled manpower

Large pool of young, trained personnel

India's population is predominantly young. As of 2001, nearly 54 per cent of the population was less than 25 years of age. By 2013, nearly 200 million more people are expected to join the nation's productive age bracket representing a quantum growth in the consumption class. India contributes over 500 PhDs, 200,000 engineers, 300,000 non-engineering postgraduates and 2,100,000 other graduates each year. India has a well-developed technical and tertiary education infrastructure of over 250 universities, 1500 research institutions and over 10,000 higher education centres. These institutions not only

ensure a steady supply of trained and qualified manpower to support the electronics sector, but also render support for research and analysis, testing and development.

Labour costs in India are competitive when compared to other developing countries

India's cost of skilled labour is among the most competitive in the world. For example, average labour rate per employee in the electronics sector is about $3,000 per year. On the other hand, labour cost as a per centage of value added is only 21 per cent in India, as compared to 23 per cent for China and 30 per cent for Taiwan.

Favourable demand conditions

Consumer demographics have been responsible for strong growth in consumer products and durables in recent years, contributing to growth in the electronics sector, both directly and indirectly.

Growth in demand for consumer durables such as CTVs, VCD / MP3 players and PCs directly benefits the sector. At the same time, demand for products such as automobiles, white goods, air-conditioners, textiles, etc, also enables growth in the electronics sector as these products comprise a significant number of electronic components. A favourable consumer demand has both boosted the manufacturing sector in India and has had a positive impact on industrial electronics as well.

The domestic market in India remains quite attractive vis-a-vis the electronics sector, and current trends indicate assured growth potential in future, as well.

Some of the key trends that are positively impacting the sector can be listed as follows:

- Growing population in the consuming class (defined as people having annual income of US$ 980 or above) that has greater disposable income and propensity to spend. It has been estimated that this group will constitute over 80 per cent of the population of India by 2009-10
- Lifestyle changes such as greater exposure to global trends and increasing affinity for convenience and lifestyle products
- Increasing urbanisation, emergence of nuclear double income families
- Low penetration levels of most consumer durables. For example, as of 2002, only 66 per cent of middle-income households had a TV set, only 28 per cent of the urban households possessed a refrigerator, while just a little over 15 per cent owned an air cooler. Despite a population of more than 1 billion people, only 16 million computers were used in India as per data of March 2005. While these sectors have shown rapid growth and increased penetration in recent years, the untapped market in India still represents a huge opportunity for manufacturers
- Increased government and private industry spending on sectors such as defense and aerospace. The Indian aviation sector, a key user of electronic components, for example, has plans to procure a growing number of aircraft

Policy and regulatory support

The Indian Government has implemented a series of policy initiatives to support the manufacturing sector.

Foreign investment up to 100 per cent is possible in the Indian electronics industry to set up units exclusively for exports. It is now possible to import duty-free, all components and raw materials, manufacture products and export these.

EHTP (Electronic Hardware Technology Park) is an initiative directed to provide benefits to companies that are replacing certain imports with local manufacturing. EHTP benefits include export credits, no duties on imported components or capital equipment, business tax incentives, and an expedited import-export process.

The Government, in an attempt to encourage manufacture of electronics in India has changed the tariff structure significantly.

- Customs Duty on specified raw materials/inputs used for manufacture of electronic components or optical fibres/cables has been removed
- Customs duty on specified capital goods used for manufacture of electronic goods has been abolished
- Excise duty on computers has been removed. Microprocessors, Hard Disc Drives, Floppy Disc Drives and CD ROM Drives continue to be exempt from excise duty
- Duty free imports are permitted for all types of goods including capital goods required by EHTP/STP units for their production provided they are not items in the negative list of imports of the EXIM Policy. Second-hand capital goods can also be imported by EHTP/STP units in accordance with the EXIM Policy

Favourable IPR environment

Protection of Intellectual Property Rights (IPR) is a prime requisite for development of R&D and innovation in the electronics sector. The Government of India has developed a robust IP act to facilitate innovation. Several amendments to the Copyright Act, creation of a new Trademark Act, a new Designs Act and amendments to the Patents Act are some initiatives that reinforce India's continued effort to protect IPR.

In the current WTO regime, India is a party to the Trade Related Aspects of the Intellectual Properties (TRIPs) Agreement and has accordingly amended most of its IPR Acts and Rules to conform to the said Agreement.

Based on the assessment of the Indian electronics industry, it is evident that the sector promises several opportunities for growth and is attractive from an investment perspective. Several multinational companies have already entered India or are in the process of doing so.

One of the emerging business models that are being considered by players in this sector is contract manufacturing. Apart from Indian players like TVS Electronics, global players like Jabil and Flextronics have entered this arena in India. This trend is discussed in the next section.

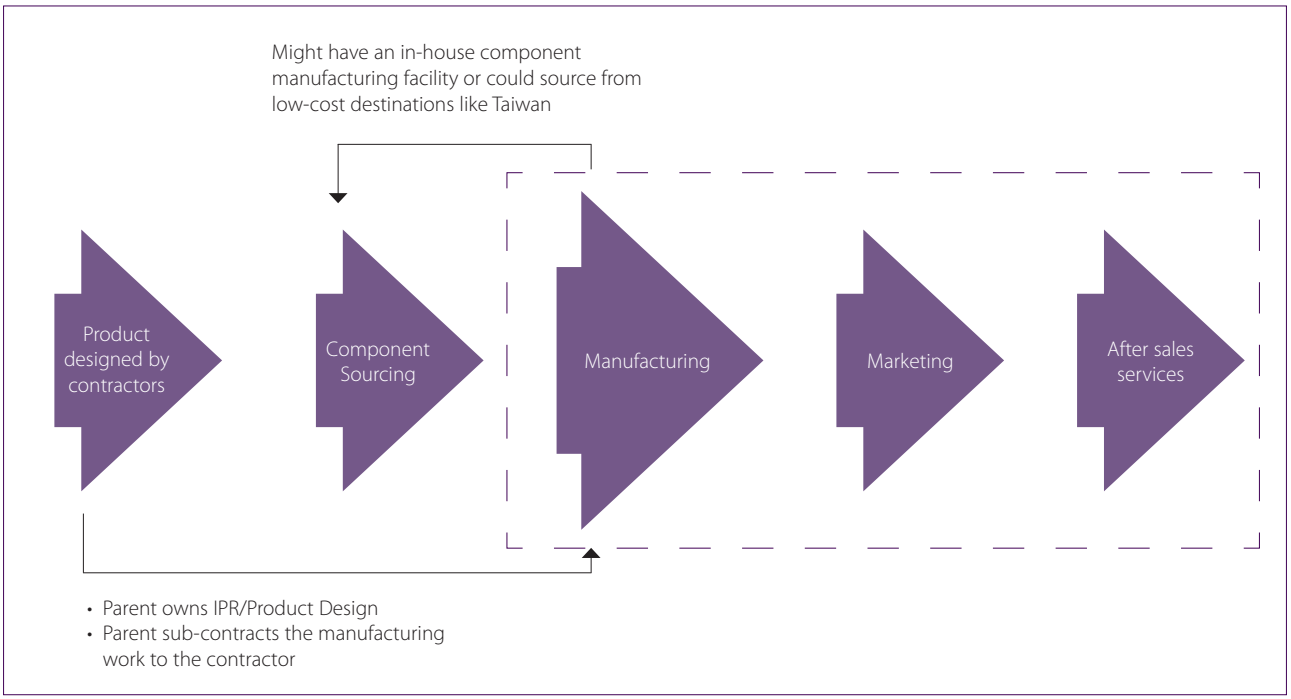
Potential for contract manufacturing service

Contract manufacturing is work sub-contracted to a manufacturer by a company that owns the product design and IPR. In some cases, the manufacturer takes the responsibility of marketing the products using the vendor's brand and provides after-sales support.

In certain other innovative arrangements in East Asian countries like China, contract manufacturers sometimes lease their production lines to other companies and earn significant revenues from the lease.

Contract manufacturing provides the following advantages to the parent company:

- Reduces the cost of production owing to low cost of labor and production facilities in low cost countries
- Gives access to new markets with growing demand
- Opportunity to leverage on the effective marketing and after-sales service capabilities of the contract manufacturers



The contract-manufacturing opportunity in India

The global contract manufacturing market presently stands at US$ 149 billion and is expected to grow to US$ 500 billion by 2010. Indian contract manufacturers business is expected to grow phenomenally from a turnover of US$ 774 Million to US$ 2.63 Billion by 2009. It is estimated that the total potential for contract manufacturing in India is US$ 11 billion, or 2.2 per cent of the global market. India could potentially target a share of 1 per cent of the total contract manufacturing in North America, 2 per cent of Western Europe, 4 per cent of Asia and 5 per cent of the rest of the world .

Key growth drivers for contract manufacturing

Contract manufacturing in India is driven by several factors. These include external factors like rising labour costs in China and internal factors like increasing expertise of Indian players in this field. The other key drivers for growth in this area include strong and growing demand for mobile phones, personal computers, consumers and auto electronics and the availability of a highly talented work force especially in design and production technology.

Key MNCs investing in contract manufacturing in India

Several multinational companies have entered the contract manufacturing segment in India to tap the potential in this market. These include:

Jabil Circuit Inc.

The company opened a new 175,000-square-foot facility located in Ranjangaon, near Pune, in the state of Maharashtra. The facility is fully operational and offers printed circuit board, enclosure integration, and distribution and repair services with in-region design services support. This facility will serve the consumer, instrumentation, networking, peripherals and telecommunications industries.

Flextronics Corp.

Flextronics has acquired three design-centric companies Hughes Software Systems, DeccaNet and FutureSoft. It has consolidated the software companies into a new subsidiary, based in India. The division focuses on providing higher-value, higher-margin design services for cell phone and telecom/networking software. Flextronics also maintains an ongoing investment in Celetronix, one of the largest electronics equipment manufacturers in India.

Elcoteq Network Corp

The company's plant in India manufactures 4 to 6 million handsets per year. Its key client is Nokia.

Attractive states for investment and Specific Incentives:

Several states in India offer attractive investment climate for players looking to enter the market. Apart from the specific incentives and support offered by the state government, factors such as infrastructure availability, manpower availability and general standard of living are also parameters that companies typically look at for making an investment decision. We have assessed different states in India along three key parameters –

- Availability of skilled labour
- Availability of support infrastructure
- Specific incentives

Key destinations that appear attractive for electronics industry are enlisted below.

Andhra Pradesh

Availability of skilled labour

Andhra Pradesh offers a large pool of skilled labour. The state has about 226 engineering colleges of which 30 per cent of the total capacity is allotted for IT/Electronics. Each year 350,000 skilled graduates pass out from its universities. It also employs 23 per cent of software professionals.

The state houses the International Institute of Information & Technology established by IBM, Motorola, Signal Tree, Oracle and Satyam. It is also home to the Indian School of Business, with Wharton school, Kellogg School of Management and London Business School.

Support infrastructure and industries

The state has the third largest power utility in the country with a total power generation of 10,273 MW. Among all

Indian states, Andhra Pradesh has progressed well in reforming its power sector.

To provide technology support to the incumbent industries, the state in collaboration with CII and TIFAC has jointly promoted the Andhra Pradesh Technology Development and Promotion Centre (APTDC), for transfer of technologies, providing know-how and technology upgradation.

The state's capital, Hyderabad, is one of the prominent IT/ITES hubs in India, and has well developed urban infrastructure and connectivity.

Favourable Government Incentives

The government has come out with several incentives to promote the electronics and IT sectors. These include:

- Duty free imports are permitted for all types of goods including capital goods required by Electronics Hardware Technology Parks (EHTP)/Software Technology Parks (STP) units for their production provided they are not items in the negative list of imports of the Export and Import (EXIM) Policy. Second-hand capital goods can also be imported by EHTP / STP units in accordance with the EXIM Policy
- The entire production should be exported to hard currency areas. Sales in the Domestic Tariff Area (DTA) are permissible as per the norms decided by Department of Electronics and are also subject to fulfillment of value addition criterion prescribed
- Tax holiday is admissible for such units for a block of five years in the first eight years of operation. Deemed export benefits are also admissible
- 100 per cent foreign equity participation is permissible under the scheme

Punjab

Availability of skilled labour

Punjab is a key state for both industrial and agricultural activity. It is known for the industrious nature and entrepreneurial spirit of its population. The state has 41 engineering colleges, 46 computer science and management institutes and 170 industrial training institutes. Each year it contributes about 17,640 engineers and close to 31,689 technically qualified professionals.

Support infrastructure

Punjab has 80 industrial estates, of which 13 are dedicated to IT and hardware. The state has a power generation capacity of 4452 MW with about 2000 MW in the pipeline. It has a well-established social and industrial infrastructure and good air, rail and road links to major metropolitan cities like Delhi and Mumbai.

Favourable Government Incentives

The state government has put in place several policy initiatives to attract investment in the electronics sector. The rate of octroi on capital equipment, building material and raw material remains as applicable on the 24th June, 1991, and all electronic units are extended exemption to the extent of 50 per cent for a period of 6 years from the date of registration.

Units/Institutions recognised by the Department of Electronics, Government of India, exclusively in all or any of the activities of computer software or system engineering, employing more than 10 technically qualified workers, are eligible for a special assistance of 5 per cent of the term loan per year subject to a maximum of US$ 22,000 in a year, for a period of 5 years.

West Bengal

Availability of skilled labour

The state has 53 engineering colleges (including one of the six IITs), 54 technical training institutes, and 17 management institutes, including the Indian Institute of Management, Kolkata.

Support infrastructure

West Bengal is a power-surplus state with an installed capacity of 5680 MW with an additional capacity of 2227 MW in the pipeline.

The state has developed 30 industrial estates primarily focusing on IT, hardware, petrochemicals, chemicals and steel-based industries.

Favorable Government Incentives

Some of the relevant policies that pertain to electronics / IT sector include:

- New units in the area of Information Technology (Software, Hardware), Electronics, are entitled to additional interest subsidy of 10 per cent of interest liability subject to a further ceiling of US$ 44,000. The total interest subsidy is made available for an additional period of 2 years in all such cases
- New units in the area of Information Technology (Software, Hardware), Electronics, are entitled to full exemption from payment of stamp duty and registration fee, required for registration of documents relating to purchase / acquisition of land & building, for setting up of the approved project

Chattisgarh

Availability of skilled labour, support infrastructure

Chattisgarh has about 12 engineering colleges and 69 training institutes, which provide a strong pool of qualified professionals to various IT/Electronic industries. The state has been focusing on education, and had a literacy level of 65 per cent in 2001, up from 43 per cent in 1991.

The state has surplus power, with an installed generation capacity of 1400 MW and a further capacity of 11,000 MW in the pipeline. All district centres in the state have optical fibre and Internet facilities. The state also has a high penetration of mobile technology.

Favourable government incentives

Some of the policies formulated by the state government to promote investments that pertain to electronics and IT sectors are as follows:

- All new IT units exempted from payment of electricity duty and stamp duty on acquisition of property
- IT units with captive generating sets up to 150 KVA exempted from payment of electricity duty without any time limit
- All new hardware units exempted from electricity charge for a period of ten years from date of commercial production
- 25 per cent rebate on premium charged for land allocation in Industrial Growth Centres
- IT units meeting price/quality standards and located within the State (especially small units) preferred in government purchases
- Assistance up to 25 per cent of the infrastructure cost, subject to a maximum of US$ 220,000 and interest subsidy at the rate of 5 per cent per annum, subject to a maximum of US$ 11,000 given for hardware units located outside industrial areas
- A technology upgradation fund of US$ 6.7 million over the next five years created for hardware units to provide interest subsidy to small and medium scale industries against loans taken from banks or financial institutions
- An infrastructure support at the rate of 10 per cent of the project cost given to units set up in backward areas

Orissa

Availability of skilled labour, support infrastructure

Orissa has a strong network of educational institutions 36 engineering colleges, 159 training institutes and 47 colleges offering post-graduate courses in computer applications.

The installed power generation capacity of Orissa is 3489 MW and is growing at a healthy CAGR of 11per cent. Orissa has a network of 86 industrial estates including many sector specific estates for electronics and software. The estates provide good quality infrastructure, including uninterrupted power supply.

Favourable Government Incentives

The following incentives are available to new Electronics/Telecommunication (Hardware and Software) industrial units:

- Land at Bhubaneswar (including Chandaka Industrial Area) can be allotted at US$ 11000 (INR 500,000) per acre
- Electronics / Telecommunication (Hardware and Software) industrial units are eligible for incentives applicable to

Zone-A, irrespective of their actual location

- In appropriate cases, venture capital for technical entrepreneurs (belonging to Electronics and Computer disciplines) up to 50 per cent of the equity requirements, subject to a limit of US$ 55,000 (either singly or jointly) and equity participation for other categories of entrepreneurs up to 25 per cent, subject to a limit of US$ 55,000 will be provided. This facility will be available for a maximum period of five years with effect from the effective date
- Travel assistance to technical entrepreneurs (belonging to Electronics and Computer disciplines) to go abroad for interaction with software industries and organisations likely to offer software assignments. This assistance can only be availed of by those sponsored by the Department of Science and Technology

Conclusion

India's electronics sector presents several attractive options for growth. All segments of the industry are growing strongly, led by sound and sustainable drivers. Increasing consumer spending, infrastructure development, growth in the industrial and IT sectors are some of the key trends that have a positive impact on the electronics sector.

In terms of specific segments, consumer electronics, electronic components, communication and broadcasting equipment and computer hardware are attractive segments offering both size and growth potential. New business models such as contract manufacturing are emerging as attractive options, especially for exports out of India

Addressing India's large and diverse market would require companies to develop the right technology and cost, have a good understanding of local market and customise products to suit local needs. Adequate distribution and reach to target suburban and rural markets, where the bulk of the consumer base resides, will be another key capability, especially for players in the consumer electronics segment.

Profiles of Key Players

LG

LG Electronics India Pvt. Ltd. (LGEIL) is a wholly owned subsidiary of LG Electronics, South Korea. It has a plant each in Noida and Pune. Its products include TV, air-conditioner, refrigerator, washing machine, monitor, vacuum cleaner and projector.

Philips

Philips in India is a subsidiary of Royal Philips Electronics of The Netherlands. It is promoted by Koninklijke Philips Electronics N V.

Philips India Limited (PIL) is a leader in lighting, consumer electronics, semiconductors, domestic appliances and personal care with an unmatched range of products backed by superior design and technology. PIL also has an excellent distribution and after-sales service network. Philips has a plant each in Thane, Pune, Loni-Kalbhor, Mohali and Baroda and three plants in Kolkata.

Samsung

Samsung India Electronics Ltd., a subsidiary of the US$ 56 billion Samsung Electronics Co. Ltd., has been operating in India since 1995. It is a leading provider of high tech consumer electronics, home appliance, IT and Telecom products in the country. Samsung India has set up manufacturing facilities for color televisions, microwave ovens, washing machines, air-conditioners, color monitors and refrigerators in the country. It has a plant in Noida.

Videocon International Ltd.

In 1985, through a technical tie-up with Toshiba Corporation of Japan, Videocon International Limited launched India's first world class color television. Today, Videocon International Ltd., the flagship company of the Videocon Group, is India's leading manufacturer of consumer electronic products.

Videocon is now a global player, the first Indian company to win the prestigious CE approval for exporting its color TV to Europe. Videocon is now entering the world market with its operations in the Middle East, Europe, Indonesia and South Africa.

It currently manufactures colour TVs, black & white TVs and audio products - a range of home audio systems, stereo radio, recorders and personal stereos. At its plant at Chitegaon and Aurangabad, it has also undertaken complete backward integration to manufacture all critical and important components of its products, such as electronic tuners, FBTs, ATDMs and deflection yokes. The company registered revenues of US$ 1680 million in 2007.

MIRC Electronics

MIRC makes and markets the Onida brand of products. Today, apart from being a leading player in the CTV market, it also manufactures other household appliances including air-conditioners, washing machines, DVDs, plasma television and home theatre systems. For office use, Onida has also introduced state-of-the-art multi-media presentation products. Its plant is located at Thane, Maharashtra.

HCL Infosystems Ltd.

HCL Infosystems manufactures and markets personal computers, PC servers and RISC/UNIX servers. It offers IT consulting, technology integration services, turnkey software development and functional consulting and implementation services for Enterprise Resource Planning.

TVS Electronics

TVS Electronics is a key player in the Electronics Manufacturing Services (EMS) space, where it offers engineering, development, sourcing and contract manufacturing services. It also offers transaction automation products and services for printing, power management and input devices. The company has a base of over 350 suppliers.

SOLECTRON

Solectron Centum Electronics Limited is the leading Indian company offering state of art solutions for Frequency Control Products (FCP), Electronic Manufacturing Service (EMS) and Hybrid Micro Circuits (HMC). Solectron has a manufacturing unit and design center in Bangalore and a post manufacturing center in Mumbai. The EMS operation focuses primarily on the domestic market. For the year 2006 the revenue was US$ 19 million.

Flextronics

Flextronics entered India in 2001 when it purchased a Motorola facility. Flextronics maintains a Bangalore facility, listed with 18,000 sq. ft. and 297 employees. The products manufactured are engine management card, TV tuners, set top box, energy meters, cellular phone, networking cards and WLL wall sets.

Jabil Circuits

Jabil Circuit operates a 51,000 sq. ft. plant in Pimpri, which the provider took over from Philips in late 2002. The Pimpri plant manufactures TV analog monitor cards and certain audio products for Philips. All production today is for the Indian market. In December 2004, Jabil Circuit opened a 175,000-square-feet facility in Ranjangaon, that offers printed circuit board assembly, enclosure integration, and distribution and repair services, along with in-region design service support. The site serves the consumer, instrumentation, networking, peripherals and telecommunications industries.

Exchange Rate Used

Year	Exchange Rate (INR/US$)
2000-01	45.75
2001-02	47.73
2002-03	48.42
2003-04	45.95
2004-05	44.87
2005-06	44.09
2006-07	45.11

DISCLAIMER

India Brand Equity Foundation (IBEF) is a public-private partnership between the Ministry of Commerce & Industry, Government of India and the Confederation of Indian Industry. It aims to effectively present the India business perspective and leverage business partnerships in a globalising market-place.

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