

An Analysis upon Growth and Trends of Indian Electronic Industries: Present Scenario

Kolla Pushpa Nandini^{1*} Dr. Shilpa Baradwaj² Dr. Bharat Nagar³

¹Research Scholar

²Assistant Professor, MUIT, Lucknow

³Assistant Professor, Jagannath University, Jaipur

Abstract – Electronics, a USD 1.75 trillion industry, is one of the largest and fastest growing industries in the world. Indian Electronics Industry can become one of the top performing industries based on its huge potential and big aims towards delivering higher performances. Presently, the size of Indian Electronics Industry is about USD 84 bn (Rs. 5,04,000 Cr) and is likely to reach USD 94.2 bn (Rs. 5,65,000 Cr) in 2015 with expected growth rate of 9.9% which is more than twice the growth rate of global electronics market. Currently, Indian Electronics Industry fulfills its 65% of demand from imports and only 35% demand is catered by local market. The demand for electronics hardware and goods is expected to reach up to approx. USD 400 bn (approx. Rs. 24,00,000 Cr) by the year 2020. But, electronics hardware production in the country is projected to reach to USD 104 bn by the year 2020, creating a massive gap of USD 296 bn (approx. Rs. 17,76,000 Cr) between supply and demand. To cope up with the potential electronics crisis, government of India is constantly modernizing and upgrading certain policies which include various policies like National Policy on Electronics (NPE), Electronics Development Fund, 'Digital India', 'Make in India' 'Made in India, Made for World', etc. massive employment initiatives for 2.8 Cr workforce to boost Indian electronics industry, under NPE over the period of next 8 years, etc. This research paper takes an overview of Indian electronics industry and the outcome of this research should be useful for business organizations, industry and government institutions operating in Indian electronics industry.

Consumer electronics have become an integral part of daily life and revolutionized the way we communicate, retrieve information, and entertain ourselves. Between cell phones, computers, televisions, iPads, and e-Readers, it is estimated that the average person in the India uses various electronic products. Rapid technological advancements and growth in the electronics industry have led to a constant stream of new products and a resulting decrease in the life span of electronics.

INTRODUCTION

Electronics industry is among the largest and fastest growing manufacturing Industry in the world. The total Electronics Equipment Production of the world during the year 2014 was estimated to be around US\$ 2.0 trillion. The maximum production was that of Computer Systems and Peripherals (26.6 percent) followed by communication equipment (21.7 percent), Consumer Electronics (12.6 percent), Instruments (10.7%), industrial equipment (9.5 percent) and Equipment for Government / Military (8.8 percent). Over the years, production bases have shifted from USA and EU to Asia and the latter's share in global production has increased to over 60%.

India's total Electronics Hardware Production in 2014-15 is estimated at US\$ 32.46 billion. This represents a share of about 1.5 percent in world electronic

hardware production. The production, export and import figures of Indian Electronics Industry for FY 14-15 are summarized in Table 1.

S. No.	Parameter	Value (US \$ Billion)
1	Production (Revenues)	32.7
2	Exports	6.0
3	Imports	36.9

Table 1: Production, Exports and Imports of Electronics Hardware by India, 2014-15.

According to Table 1, domestic consumption of Electronic Hardware in 2014-15 was \$63.6 billion. Imports accounted for 58% of this consumption.

Electronics Industry is conventionally divided into six segments. Table 2 provides the production (revenue) share of each of these segments.

Segment	\$Billion	Percent
Consumer electronics	9.1	28
Electronic components	5.1	16
Industrial Electronics	5.6	17
Computer Hardware	1.7	5
Communication & Broadcast Equipment	9.5	29
Strategic Electronics	1.7	5
Total	32.7	100

Table 2: Indian Electronics Industry Revenues by Segment 2014-15

Three points may be noted. First, India has not had much success in penetrating the export markets so far. At \$6 billion, India has less than 1 percent share in the world markets. Second, electronic components and electronic instruments account for the bulk of India's exports. Finally, imports of electronic goods account for more than half of India's total consumption at home. India is particularly large importer of telecom instruments. As a whole, Indian electronic industry does not present a picture of strength. With the skilled labor force that the country has, the industry should be a significant force in the world markets. But it has not done well in competing with imports even in its own home market. Imports accounted for as much as 58% of the total consumption in 2014-15. Prima facie, it stands to reason that there is something badly amiss in the ecosystem of the country that inhibits the industry from turning into a significant force.

Segment	Exports		Imports	
	\$Million	Percent	\$Million	Percent
Computer hardware, peripherals	364	6.1	7248.12	19.6
Consumer electronics	793	13.2	4119.89	11.2
Electronics components	1878	31.2	5409.39	14.7
Electronics instruments	1903	31.7	5409.72	14.7
Telecom instruments	1073	17.9	14716.23	39.9
Total	6011	100	36903.34	100

Table 3: Exports and Imports of Indian Electronics Industry (\$Million) by Segment, 2014-15.

Electronics manufacturing industry has received a tiny part of the total foreign direct investment (FDI) into India. From April 1, 2000 to June 30, 2015, it received only \$1.68 billion or 0.66% of the total FDI inflow of \$258 billion FDI inflow. In flow terms, the total FDI in electronics in 2014-15 was \$142.9 million and amounted to just 0.42% of the total FDI inflow. Although telecommunications received 6% of the total FDI inflow during 2014-15 on its own, this was almost entirely in the provision of telecommunications services.

In several countries, the contribution of electronic industry to GDP is significant. For example, it contributes 15.5% to GDP in Taiwan, 15.1% in South Korea and 12.7% in China. But in India, this proportion

is only 1.7%. Furthermore, OEM/ODM [Original Equipment Manufacturing / Original Design Manufacturing] and local component suppliers are still in infancy in India. Most of the OEM is confined to last-mile assembly indicating that the industry remains in the early stages of development.

GROWTH TREND

Figure 1 depicts the value of output of electronic industry in current (nominal) lakh crores rupees from 2004-05 to 2013-14. The output has grown from Rs. 1.9 lakh crores in 2004-05 to Rs. 8.2 crores in 2013-14. The simple average of growth rates during this period works out to 21.5%. But remembering that the production value is nominal and not corrected for inflation and the base is still small, the growth is less impressive than this growth rate may indicate. The point is greatly reinforced when we compare India to China, as discussed below.

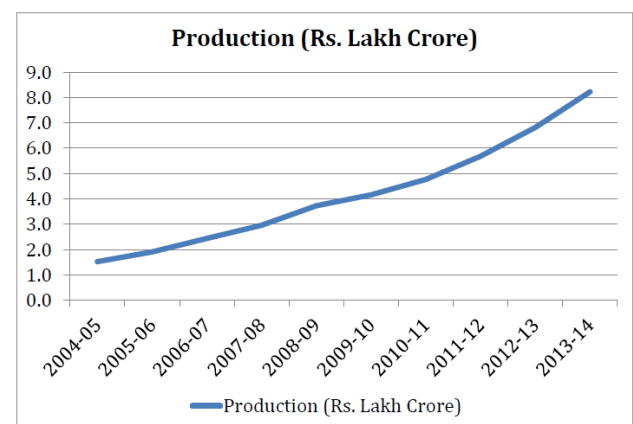


Figure 1: Revenue in electronic industry in current lakh crores rupees.

CONSUMER ELECTRONICS

Consumer Electronics (durables) sector continues to be the main stay of the Indian electronic industry contributing about 32 % of the total electronic hardware production. The market is expected to grow to 12% annually. The urban consumer durables market is growing at an annual rate of 7 % to 10 %, and the rural durables market is growing at 25 % annually. Some high growth categories within this segment include mobile phones, TVs and music systems 1.52 Computer Industry The high growth in PC sales is attributed to increased consumption by Industry verticals such as Telecom, Banking and Financial Services, Manufacturing and Education.

Significant consumption in the small and medium enterprises and increased PC purchase in smaller towns and cities was witnessed during the year. It is expected that increased Government focus on pan—India deployment of broadband at one of the lowest costs in the world was soon lead to accelerated PC

consumption in the home market. The growing domestic IT market has now given impetus to manufacturing in India. The year witnessed not only capacity expansion by the existing players, but also newer investments in hardware manufacturing.

➤ Consumer Offerings

The science of marketing categorizes all the consumer products and services into four major groups:

- 1) convenience offerings
- 2) shopping offerings
- 3) specialty offerings
- 4) unsought offerings

All the four types of consumer products are, of course, represented by certain goods or services. All the offerings are available in the market, promoted and sold for bringing profit to the company. However, products that represent each of the four groups differ by marketing strategies applied to them, consumers' perception, and channels of delivering particular products to customers.

A COMPARISON WITH CHINA

Two-digit Standard International Trade Classification (SITC) data, available from the United Nations Commodity Trade (UN Comtrade) Statistics, allow us to compare India to China in terms of their export performance. The comparison throws useful light on how India may want to design its policy if it is to capture a large share in the world exports.

For purposes of this comparison, it is useful to expand the scope of products to include electrical goods. Although technically a distinction can be drawn between electrical and electronic goods, the difference is getting increasingly blurred since the conventional electrical products frequently use electronic parts in them.¹ An additional justification for the inclusion of electrical goods is that from the viewpoint of Make in India and job creation, electrical goods can potentially contribute as much as electronic goods.

There are three 2-digit SITC categories covering electronic and electrical products. These are:

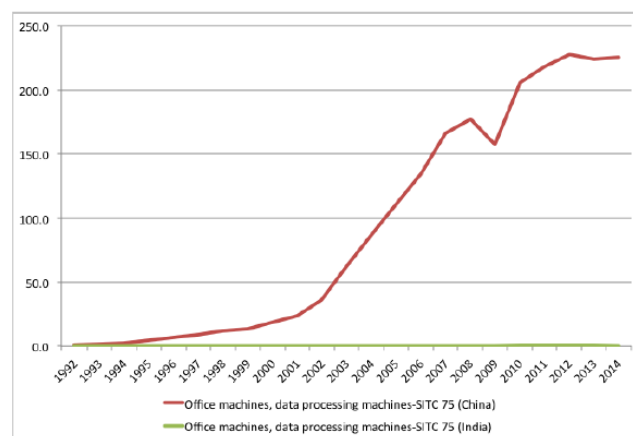
SITC 75: Office machines and automatic data-processing machines

SITC 76: Telecommunications and sound-recording and reproducing apparatus and equipment

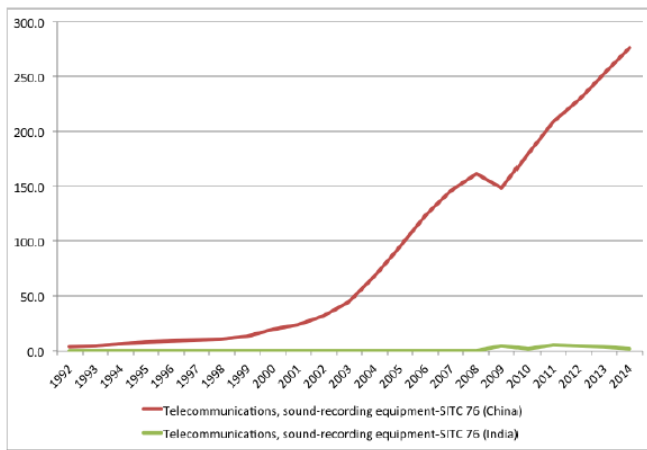
SITC 77: Electrical machinery, apparatus and appliances, not elsewhere specified, and electrical parts thereof

Figures 2 (a,b,c) successively provide graphical representations of the evolution of exports of these three items by India and China from 1992 to 2014. These three figures provide a dramatic contrast between India and China in terms of export performance. Taken together, both countries exported very small amounts in 1992: \$8 billion in the case of China and 0.3 billion in the case of India. Even in electrical goods (SITC 77), which constitute conventional and not new set of products, China's exports amounted to only \$3.3 billion that year. Although the Chinese performance had begun to diverge from that of India even in the early 1990s, as late as 2000, growth in exports was not extraordinary. The total exports of the three products taken together that year at \$62.2 billion were significant and implied a very high rate of growth.

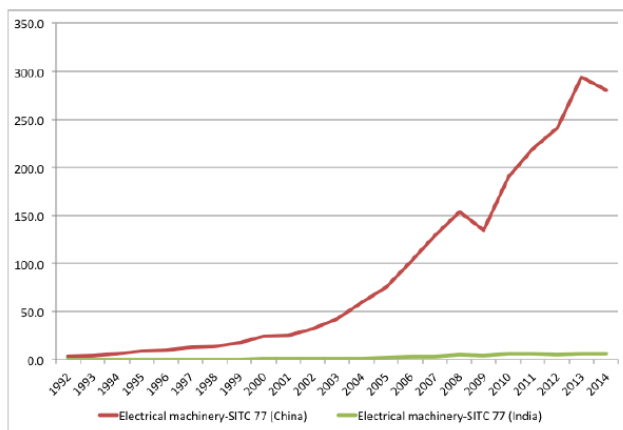
But this paled in comparison by a wide margin with what followed in the 2000s. By 2014, exports of the three products together had risen to the gigantic figure of \$782.2 billion. In India, none of the three product categories including even electrical appliances (SITC 77) exhibited anything close to this performance. Their combined exports reached barely \$11 billion in 2013 before dropping to 8.8 billion in 2014.



(a)



(b)



(c)

Figures 2(a,b,c): Exports of electronic and electrical goods by India and China, 1992-2014 .

The Chinese experience has four important implications for the future policy towards electronics industry in India. First, rapid growth in electronic industry will not be achieved by focusing on the domestic market. Through import substitution, we may be able to raise the output to some degree and generate additional profits for the existing producers but we will not turn the industry into the dynamo it must become. Big success requires operating in the large world market, which amounts to more than two trillion dollars compared with only \$65 billion in the case of the domestic market. Therefore, we must reorient our policy to ensure that the industry becomes competitive in export markets. This feature implies that trade policy and trade infrastructure must not handicap firms from becoming exporters.

Second, the Chinese experience also underlines the importance of large-scale manufacturing. Large firms are better able to exploit both economies of scale and of agglomeration. Since they must compete in the world markets to sell large volumes of output, they also have the incentive to continuously upgrade their processes, management and technology to stay

competitive. Small and medium firms must either compete against these firms or become their ancillaries. Either way, they are forced to adopt cost-saving technologies to remain profitable. The implication of this feature is that the ecosystem must be friendly to the operation of large-scale firms.

Third, in today's world, large firms are predominantly multinationals. Such global giants in electronics industry as Hon Hai (Foxconn) of Taiwan, Sony, Fujitsu and Panasonic of Japan, Samsung and LG of South Korea and IBM, Hewlett Packard, Apple and Dell of the United States have driven the rapid growth of electronic industry in China. The implication is that the policy regime should be friendly to multinationals. This is a more rapid and perhaps the only avenue to bringing large firms to India. Any attempts to grow the large firms at home would take a long time and even then success may be difficult to achieve.

Finally, the success of the Chinese industry also reveals the importance of geographical location of firms. From the beginning, China gave primacy to the creation of the Special Economic Zones (SEZs) and Economic and Technical Development Zones (ETDZs) along the vast coastline on its eastern and southern border. It also paid special attention to port development to remove any bias against exporting due to high costs of shipping. This was in contrast to Indian incentive schemes that predominantly focus on nudging the producers towards the domestic market.

THE EXISTING POLICY INITIATIVES

The existing policy initiatives to assist electronics industry in India fall into four two categories: (i) tax and tariff concessions applying to specific products; (ii) Miscellaneous schemes to promote domestic industry; (iii) schemes to promote innovation; and (iv) schemes aimed at skill development. In the following, we describe each of these schemes in greater detail.

Tax and Tariff Concessions on Inputs and Tariff Protection Against Imports - To encourage assembly activities, basic custom duty and countervailing duty (CVD) are waived on inputs used in the production of all ITA-1 products (ITA-1 products are final products that enter duty free into the country under the WTO Information Technology Agreement – 1 to which India is a signatory). Similar exemption is also given on inputs used in TVs, mobile handsets, tablet computers, solar PV cells and certain medical equipment.

A special differential excise duty regime has been introduced for mobile handsets and tablet computers to provide protection against imports. Under this regime, an excise duty of 12.5% applies as CVD to imports but domestic producers can choose between the same 12.5% excise with VAT exemption on inputs used and a significantly lower excise duty and

no VAT exemption. For a vertically integrated manufacturer, this regime can allow significant protection against imports. Flat panel TVs, which were subject to zero custom duty, have been subject to 36.5% custom duty beginning in August 2014.

Under zero duty Export Promotion Capital Goods (EPCG) scheme, imports of capital goods for pre-production, production and post-production (including CKD/SKD thereof as well as computer software systems) enter at zero custom duty. As per the Foreign Trade Policy 2015-2020, the specific export obligation under EPCG scheme where capital goods are procured from indigenous manufacturers has been reduced to 75% from 90% in order to promote domestic capital goods manufacturing industry.

Miscellaneous Schemes to Promote Domestic Production - A number of schemes aimed at promoting domestic production exist. These are described below.

Modified Special Incentive Package Scheme (MSIPS): Modified Special Incentive Package Scheme (M-SIPS) provides financial incentives to offset disability and attract investments in the electronics hardware manufacturing including chip manufacturing. The scheme provides subsidy for investments in capital expenditure - 20% for investments in Special Economic Zones (SEZs) and 25% in non-SEZs. Subsidy rate is lower in the SEZs because several other concessions are available there. Between January 2014 to June 2015, 40 proposals worth Rs. 9538.24 crore in investment have been approved under the scheme (see <http://www.msips.in/MSIPS/>).

Electronic Manufacturing Clusters (EMCs): Electronics Manufacturing Clusters (EMC) Scheme provides financial assistance for creating world-class infrastructure for electronics manufacturing units. The assistance for the projects for setting up of Greenfield Electronics Manufacturing Clusters is 50% of the project cost subject to a ceiling of Rs. 50 Crore for 100 acres of land. For larger areas, pro-rata ceiling applies. For lower extent, the extent of support would be decided by the Steering Committee for Clusters (SCC) subject to the ceiling of Rs. 50 Crore. For setting up of Brownfield Electronics Manufacturing Cluster, 75% of the cost of infrastructure, subject to a ceiling of Rs.50 Crore is provided. About 14 Greenfield EMC proposals have been given in principal approval, while 2 have been given final approval. 2 common facility centers also have been accorded in principle approval.

Investment allowances and deductions: Investment allowance (additional depreciation) at the rate of 15% to electronics manufacturing companies investing more than 1NR250 million in plants and machinery is provided. This benefit will be available for three years, i.e., for investments made up to 31 March 2017.

Preferential Market Access: Under this 9 generic products and 23 telecommunication products have been identified for preferential market access (PMA) in government procurement. All ministries have been directed to implement the policy in all Government procurements. A PMA online monitoring system also has been established to track the progress centrally.

Setting up of Semiconductor Wafer Fabrication: Two proposals for setting up of semiconductor wafer manufacturing facilities in India have been approved and implementation is under progress. Semiconductors form about 30% of the cost of electronic product/system.

Mandatory Safety Standards: Mandatory compliance to safety standards has been notified for identified Electronic Products with the objective to curb import of sub-standard and unsafe electronics goods. As of now, 30 electronic products are under the ambit of this Order.

Merchandise Exports from India scheme (MEIS): This scheme has notified certain products (includes AC parts and compressors, refrigerating equipment compressors, fully automatic washing machines, color TV and STB for accessing internet) and markets for exports. These products, when exported to specified markets (Category B countries), are offered 2% export subsidy. There is also provision for higher subsidy under the MEIS scheme for export items with high domestic content and value addition.

Promotion of innovation - Various initiatives have been taken to promote innovation in India. Electronics Development Fund (EDF) has been created to help generate an ecosystem of R&D in electronics in India to promote IP generation and large-scale manufacturing. Initiatives have also been taken to promote incubators, centers of excellence and R&D in electronics sector.

Skill Development - There have been large-scale initiatives to create skilled manpower to achieve targets of 1,500 Ph.D. in Electronics Sector Design and Manufacturing (ESDM) and another 1,500 Ph.D. in Information Technology and Information Technology Enabled Services IT/ITES) per year by 2020. The scheme for setting up seven new Electronics and IT Academies has been approved and the Special Manpower Development Program for VLSI and Chip Design has also been approved. Financial assistance to the states/UTs for skill development and vocational training has been approved with a target of 400,000 individuals in the ESDM sector.

CONCLUSION

The twentieth century marked the beginning of use of equipments like radio, television and a ground breaking discovery - the first computer. Innovation and development in the field of science and technology and an open global market resulted in availability of a range of products at affordable prices, changing the very lifestyle of societies. New electronic appliances have infiltrated every aspect of our daily lives, providing society with more comfort, health and security, with easy and faster information acquisition and exchange. The sheer amount of electronic equipment reaching end-of-life poses a growing challenge.

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Corresponding Author

Kolla Pushpa Nandini*

Research Scholar

E-Mail – nandini142@gmail.com