<table>
<thead>
<tr>
<th>CONTENTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>3</td>
</tr>
<tr>
<td>Advantage India</td>
<td>5</td>
</tr>
<tr>
<td>Market Overview and Trends</td>
<td>7</td>
</tr>
<tr>
<td>Porter’s Five Forces Analysis</td>
<td>19</td>
</tr>
<tr>
<td>Strategies Adopted</td>
<td>21</td>
</tr>
<tr>
<td>Growth Drivers</td>
<td>23</td>
</tr>
<tr>
<td>Opportunities</td>
<td>35</td>
</tr>
<tr>
<td>Success Stories</td>
<td>40</td>
</tr>
<tr>
<td>Useful Information</td>
<td>44</td>
</tr>
</tbody>
</table>
One of the largest growing electronics market in the world

By 2020, the electronics market in India is expected to increase with a CAGR of 41.4 per cent to USD400 billion from USD100 billion in 2016

Promotion of LED products to boost demand

By 2020, the LED market in India is expected to expand to USD35 billion from USD0.75 billion in FY16

Digitisation to drive growth in DTH market

By 2018, the number of DTH subscribers in India is expected to rise to 200 million from 88.64 million in FY16

Source: Department of Electronics & Information Technology; TRAI
Notes: DTH - Direct-to-Home (satellite television broadcasting); CAGR - Compound Annual Growth Rate, LED - Light Emitting Diode
By 2020, the semiconductor design market in India is expected to increase with a CAGR of 29.4 per cent to USD52.58 billion from USD14.5 billion in 2015.

By 2020, the television industry in India is expected to expand to USD16.8 billion from USD9.4 billion in 2016.

By 2020, demand for telecom equipment in India is expected to rise to USD30 billion from USD20 billion in FY16E.

Source: Department of Electronics & Information Technology; Indian Semiconductor Association; FICCI, TechSci Research
Notes: CAGR – Compound Annual Growth Rate; E – Estimated, 2016 – Data has been projected till December 2016
Growing demand

- Demand from households is set to accelerate given rising disposable incomes, changing lifestyles and easier access to credit
- Government and corporate spending will also contribute to growth in demand

Attractive opportunities

- The electronics market is expected to expand at a CAGR of 41.4 per cent during 2016–20
- Intended reduction in government’s import bill is likely to boost domestic electronics manufacturers

Higher Investments

- Sector has attracted strong investments in the form of M&As and other FDI inflows
- Companies are set to augment investments in production, distribution and R&D in the next few years
- Government has received investment proposals for USD17.5 million for which they intend to provide incentives under M-SIPS scheme. Applications received before July, 2020 will be considered

Policy support

- 100 per cent FDI allowed in the electronics hardware manufacturing sector under the automatic route
- Initiatives like Modified Special Incentive Package Scheme (M-SIPS) will provide a capex subsidy of 20 – 25 per cent
- As per Make in India Initiative, Electronic Development Fund Policy has been approved to rationalise an inverted duty structure
- Focus on local manufacturing and design LED growth of the ESDM sector, the IESA provided a budgetary support of USD110 million through schemes.

Source: Corporate Catalyst India; Department of Information Technology; Make in India, TechSci Research


For updated information, please visit www.ibef.org
THE INDIAN ELECTRONICS SECTOR IS SPLIT INTO SIX PRODUCT SEGMENTS

**Consumer electronics**
- Mobile phones
- TVs
- Music systems

**Industrial electronics**
- UPS systems
- SCADA
- PLC
- AC drive systems

**Computers**
- Notebooks
- Desktops
- Servers

**Communication and broadcasting equipment**
- Direct-To-Home (DTH)
- Set Top Box (STB)

**Strategic electronics**
- Radars
- Satellite based communication
- Internal security system
- Disaster management system

**Electronic components**
- Semiconductor devices
- Cathode ray tubes
- Capacitors
- Picture tubes

Source: Department of Information Technology Annual Report; Corporate Catalyst India; TechSci Research
Notes: SCADA – Supervisory Control and Data Acquisition; PLC – Programmable Logic Controller
ELECTRONICS

EVOLUTION OF THE INDIAN ELECTRONICS SECTOR

1965 to early 1980s
- Closed market
- Development in transistor radios, black and white TVs, calculators etc

1984-1990

1991-2005
- Continuous & rapid industry growth
- Developments in colour TVs
- Advent of computers and telephone exchanges in 1985, followed by digital exchanges in 1988

Liberalisation era
- Sharp decline in custom tariffs
- Signing of WTO-FTA agreement in 1997, wherein India committed to complete elimination of all custom duties on IT

Late 2000s
- Increasing penetration of high-end electronics products such as High Definition TVs (HDTVs), LCDs, LEDs and tablet
- Approval of National Policy on Electronics (2012) and setting up of National Electronics Mission
- FDI of up to 26 per cent is approved through government approval in case of defence electronics items, while, FDI in excess of 26 per cent is allowed through the approval of cabinet committee on security
- Cumulative FDI inflows into the electronics sector during April 2000 – March 2017 reached US$1720.00 million

Growth era

Source: India Electronics and Semiconductors Association, Corporate Catalyst India; TechSci Research
ELECTRONICS PRODUCTION IN INDIA HAS BEEN GROWING AT A RAPID PACE

- Total production of electronics hardware goods in India is estimated to reach US$ 47.87 billion in FY17 and is expected to reach US$ 104 billion by 2020.

- Production expanded at a CAGR of 12.60 per cent during FY07–17.

- High production is majorly contributed by accelerating demand for advanced TVs, mobile phones, computers & defence related electronic equipments during FY07 to FY15.

- During FY16, production of industrial electronics, mobile phones & LED was recorded at USD6.89 billion, USD8.25 billion & USD0.55 billion, in value terms, respectively.

- In March 2017, Xiaomi announced its 2nd manufacturing plant along with Taiwan based company Foxconn, in Andhra Pradesh. This will help create employment in 100 nearby villages for at least 5,000 people.

Value of electronics hardware production in India (USD billion)

Source: Department of Information Technology Annual Reports; TechSci Research
Notes: LED – Light Emitting Diodes
According to government estimates, Consumer Electronics has the highest share (29.7 per cent) in the total production of electronic goods in India. The growth in consumer electronics over the years has been accompanied by an increase in imports in respect of certain items like LCD/LED TVs.

The Electronic Components had witnessed a growth of about 23.74 per cent from the previous year which was supported by the rapid growth in domestic manufacturing of electronic components. Industrial electronics contributed 20.9 per cent of the total output of electronics goods industry in FY15. Industrial electronics is expected to grow at a considerable pace with the new plans and schemes by government.

Communication and broadcasting equipment constitutes 10 per cent of total production of electronic goods in India in FY15. Not surprisingly, computers are a key component of total electronics output in India (9.9 per cent in FY15); the segment’s share is likely to go up over this decade, given greater policy focus on encouraging computer hardware manufacturing.

As of FY16, production of industrial electronics, mobile phones and LEDs, in value terms, stood at around USD6887.11 million, USD8249.31 million and USD548.43 million, respectively.
Production (by value) of C&B equipment in India has expanded at a CAGR of 5.1 per cent over FY07–15.

Consumer electronics have grown over the years which has been accompanied by increase in LCD/LED TV imports and accordingly this segment has registered about 16 per cent growth in 2014-15.

Growth in the hardware segment is expected to far outpace the overall growth of electronics goods production in the country (CAGR of 10.1 per cent over the same period).

The total computer hardware to reach USD31.6 billion in FY15 from USD29.9 billion in FY14.

Comparison of C & B equipment with other equipments… (1/2)

Comparison in production trends of C&B equipment and the overall electronics hardware sector in India (USD billion)

Source: Department of Information Technology (Annual Report); TechSci Research
Notes: C&B – Communication and Broadcasting
Production value of all other segments in the electronics sector (other than Consumer Electronics) grew at a rate of 10.9 per cent over FY07-15

With growth in Consumer Electronics far outpacing those in other segments till FY15, the former’s share in total electronics production has doubled over FY07–12 to 8.4 per cent.

The share of consumer electronics in the overall electronics industry in India is likely to reach 28 per cent by FY20 with the value of consumer electronics reaching USD29 billion by FY20.

### Share of Consumer Electronics in electronics production over FY07–20F

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Share (%)</td>
<td>67%</td>
<td>73%</td>
<td>74%</td>
<td>74%</td>
<td>75%</td>
<td>74%</td>
<td>71%</td>
<td>72%</td>
<td>74%</td>
<td>71%</td>
</tr>
</tbody>
</table>

*Other Electronics*  
*Consumer Electronics*

**Source:** Department of Information Technology Annual Report, TechSci Research

**Notes:** C&B – Communication and Broadcasting,  
F – Forecast
Electronic exports from India reached USD 5.7 billion in FY16, over FY07–16, exports from the sector (CAGR: 8.22 per cent)

Consumer Electronics have shown a positive growth over the years with the growth in the production of LCD/LED TVs rising to almost 40 per cent in 2013–14 as compared to a mere 11 per cent in 2012-13

Technological improvements and competitively cost effectiveness are main drivers for demand of Indian electronics products abroad

Government of India is coming up with an export-oriented policy for electronic products. The idea behind this policy is to promote greater exports of electronics & drive larger investments by setting up port-based electronic manufacturing clusters.

As of April 2017, LG Electronics, a South Korea-based company, plans to make India as its export hub, considering the good ties between both the countries. The company has 2 manufacturing units in India already, through which it exports to Middle Eastern & African countries.

Electronics exports from India (USD billion)

Source: Department of Electronics & Information Technology Annual Report; Electronics and Computer Software Export Promotion Council; TechSci Research
Notes: C&B – Communication and Broadcasting
### KEY PLAYERS IN THE ELECTRONICS SECTOR ...(1/2)

<table>
<thead>
<tr>
<th>Company</th>
<th>Business description</th>
</tr>
</thead>
</table>
| [Bharat Electronics](#) | • Established to meet specialised needs of Indian defence services  
• Focuses on contract manufacturing, design and manufacturing services, software development and quality assurance, has got plans to venture into solar energy |
| [Videocon](#) | • 3rd largest consumer durables manufacturer in India after LG and Samsung, holds one fourth of the consumer durables market in India  
• Manufactures and markets TVs, DVD players, microwave ovens, refrigerators, washing machines, ACs and power backup solutions |
| [LG](#) | • Second largest leader in consumer durables after Samsung  
• Manufactures TVs, audio-visual solutions, computers, mobile phones, refrigerators, washing machines, microwave ovens, vacuum cleaners and AC's |
| [Samsung](#) | • Largest player in the consumer durables market, provides employment to around 8000 people  
• Manufactures TVs, home theatre systems, DVD players, mobile phones, digital cameras and camcorders, refrigerators, ACs, washing machines, microwave ovens and computers, leads smart phone segment |
| [HCL](#) | • Leading IT hardware & software provider, extensive global offshore infrastructure and offices in 31 countries  
• Manufactures and markets PCs, PC servers, storage solutions, display products and other electronic products |

*Source: Company websites; Dataquest; Corporate Catalyst India; TechSci Research  
Notes: DVD – Digital Video Disc; AC – Air Conditioner; TV – Television; PC – Personal Computer*
### Key Players in the Electronics Sector … (2/2)

<table>
<thead>
<tr>
<th>Company</th>
<th>Business Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moserbaer</strong></td>
<td>• World’s 2nd largest company in the optical storage media segment&lt;br&gt;• Supplies products to a number of branded players such as Sony, Verbatim, TDK, Maxell, Imation and Samsung&lt;br&gt;• Also has a presence in the photovoltaic &amp; is the largest home entertainment company</td>
</tr>
<tr>
<td><strong>Flextronics</strong></td>
<td>• Offers high-value, high-margin design services for mobile phones &amp; telecom/networking software&lt;br&gt;• Manufactures TV tuners, set top boxes, energy meters, networking cards, drug delivery devices, diagnostic equipment</td>
</tr>
<tr>
<td><strong>Centum</strong></td>
<td>• Offers state-of-the-art solutions for Frequency Control Products (FCP), Electronic Manufacturing Service (EMS) &amp; Hybrid Micro Circuits (HMC), also has presence in Defence &amp; Aerospace, Space industry</td>
</tr>
<tr>
<td><strong>Jabil</strong></td>
<td>• Acquired Celetronix, one of the largest electronic equipment manufacturers in India, in 2006&lt;br&gt;• Offers printed circuit boards, enclosure integration and distribution and repair services with in-region design services support</td>
</tr>
<tr>
<td><strong>Samtel</strong></td>
<td>• Largest Indian integrated manufacturer of a wide range of display devices such as TV picture tubes, CRT guns, heaters and cathodes and deflection yokes&lt;br&gt;• Operates a facility in Germany to manufacture high-tech, high-resolution CRTs for demanding applications such as aircraft avionics and medical monitors</td>
</tr>
</tbody>
</table>

**Source:** Company websites; Dataquest; Corporate Catalyst India; TechSci Research  
**Notes:** CRT – Cathode Ray Tube
Consumer electronics

- Increased presence of organised retail and affordability due to technological advancement
- Under Union Budget FY17, government exempted parts and components, subparts for manufacturing of routers, broadband modems, set-top boxes for internet and TV, CCTV camera/IP camera, lithium-ion battery except mobile handsets from the purview of BCD, CVD, SAD duties.

Industrial electronics

- Application of state-of-the-art systems such as Decision Analysis, 3-D coordinate systems, smart image processing, Nanotechnology, Nanoscale assemblies, DCS, etc., across various sections of the industry
- Artificial Intelligence has been made available which would help the sector to improve its quality control thereby making it more efficient

Computers

- One of the fastest-growing IT systems and hardware market in Asia Pacific
- Expansion of server market into smaller cities and small and medium businesses

Electronic components

- Semiconductors lead segmental growth
- High growth in key determinants for electronic components, namely consumer electronics, telecom, defence and IT verticals

Source: Department of Information Technology Annual Report; Corporate Catalyst India; TechSci Research.
Notes: BCD – Basic Custom Duty, CVD – Counter veiling Duty, SAD – Special Additional Duty, TV – Television
Strategic electronics

- The production in strategic electronic segment in India increased from USD 2.68 billion in FY15 to USD 3.08 billion in FY16
- Nuclear power to play a large role in India’s energy security needs
- Companies such as Bharat Electronics Ltd, Hindustan Aeronautics Ltd, Electronics Corporation of India Ltd, Bharat Dynamics Ltd dominated this segment

C&B equipment’s

- Growing broadband subscriber base
- As on 9th January, 2017, the total number of telephone subscribers in the country was 1,102.94 million, covering wireless subscriber base of 1,078.42 million & wireline subscriber base of 24.52 million, respectively

E – Waste Management

- Increasing Adoption of Electronic Waste Management Scheme supported by the regulatory framework has improved the electronics sector to a large extent

Major Contributors to Employment

- Major segments such as Consumer Electronics, Telecom Equipment and IT Hardware can be major contributors to employment

Increasing Consumption and potential for production

- Increasing PFCE on Recreational and Educational services and Home appliances are expected to contribute to the rise in consumption and production of Electronics and IT Hardware.
- Growth of 17 per cent is expected with major contributors being Consumer Electronics, Telecom and computers

Source: Department of Information Technology Annual Report; Corporate Catalyst India; TechSci Research, TRAI
Notes: C&B – Communication and Broadcasting; DTH – Direct-to-Home (Satellite Television Broadcasting)
**PORTERS’ FIVE FORCES ANALYSIS**

<table>
<thead>
<tr>
<th>Competitive Rivalry</th>
<th>Threat of New Entrants</th>
<th>Substitute Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Competitive rivalry is quite high in this sector, as players use innovation and product differentiation to beat peers</td>
<td>• Threat is low due to capital-intensive nature of the industry</td>
<td>• Threat is low because there is no substitute for electronics</td>
</tr>
<tr>
<td>• Each player adopts different strategies to capture market share; for example, one player innovates while another diversifies, thus intensifying the rivalry in the sector</td>
<td>• Evolving technology, brand loyalty block entry</td>
<td>• Threat is present within the industry due to product innovation by peers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bargaining Power of Suppliers</th>
<th>Bargaining Power of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low bargaining power of suppliers, as product differentiation is less</td>
<td>• High as buyers possess considerable product information these days, which helps in comparison</td>
</tr>
<tr>
<td>• Low switching costs for customers</td>
<td>• Availability of similar options</td>
</tr>
</tbody>
</table>

**Source:** TechSci Research

---

**ELECTRONICS**

**JUNE 2017**

For updated information, please visit [www.ibef.org](http://www.ibef.org)
• BPL Medical Technologies has manufactured a health and fitness monitoring device named as LifePhone+ used to record blood sugar levels.
• In May 2017, a group of Indian & American scientists have used recycled jute to fabricate high performance, flexible supercapacitors, which have a number of applications in consumer electronics.
• LG Electronics India is looking to sell around 10,000 units of super premium range of televisions in FY18. The brand is all set to launch 9 variants in OLED 4K TV range with plans to launch 52 new models of televisions in 2017 to grab more market share.

• Most companies are now diversifying into other profitable segments; for example: Samsung is focussing heavily on mobile phone manufacturing, while earlier it focussed more on consumer electronics. For instance, Videocon is also foraying into other segments such as TV Network and mobile phone manufacturing

• Most electronics companies, especially consumer electronics, are shifting towards popular ad campaigns to boost their sales, like embracing aggressive social strategies (e.g. by going online) to target young audience & build brand loyalty among them

• Most companies are forming strategic alliances and JVs for mutual benefits
  • LG and Sun Microsystems are jointly developing Java platforms to enable LG phones and TVs
  • LG and Siemens have collaborated to develop standard solutions for air conditioners

• Manufacturing technologies are exchanged with other countries for better knowledge of innovations
  • Being competitive on global platform is key to sustainability and growth for the sector
ELECTRONICS

GROWTH DRIVERS
STRONG DEMAND AND POLICY SUPPORT ARE DRIVING INVESTMENTS

Growing demand
- Higher real disposable incomes, easy consumer credit
- Falling prices, increasing penetration
- Growing consumer and industrial base

Policy support
- Setting up of EHTPs, SEZs, favourable FDI climate
- Increasing liberalisation, tariff relaxation
- National Policy on Electronics and National Electronics Mission

Innovation
- Expanding production & distribution facilities in India
- Increased R&D activity
- Providing support to global projects from India

Increasing investments
- Inflow of FDI in sector
- Increasing domestic investment
- Expansion by existing big companies in the sector

Source: TechSci Research

Notes: EHTP – Electronic Hardware Technology Park; SEZ – Special Economic Zone; FDI – Foreign Direct Investment; R&D – Research and Development
ELECTRONICS

KEY GROWTH DRIVERS ARE RISING INCOMES, CREDIT AVAILABILITY AND GOVERNMENT SPENDING

- Increase in discretionary income and credit availability has boosted demand for consumer durables
- The government is one of the biggest consumers of the sector and leads the corporate spend on electronics; this is not surprising given that electronics facilitates e-governance, developmental schemes and initiatives launched by the government
- Strong demand and favourable investment climate in the sector are attracting investments in R&D as well as manufacturing
- Increasing demand for defence equipments has boosted the production of electronics goods up to a considerable level
- Electronic Manufacturing Services and R&D based exports also drives the market. The increased value – addition would further increase the demand for sales, production, after – sales support and services. This would trigger the demand for skilled human resources in the country
- Rapid urbanisation have unravelled new markets for consumer goods; easy financing options have made consumer goods affordable

Rising per capita income in India (USD)

Source: IMF, World Bank, TechSci Research
Note: F – IMF Forecast

For updated information, please visit www.ibef.org
POLICY SUPPORT AIDING GROWTH IN THE SECTOR … (1/2)

Encouragement to FDI, SEZs
- 100 per cent FDI is allowed under the automatic route in the Electronics Systems Design and Manufacturing sector and is subject to all applicable regulations and laws.
- In case of electronics items for defence, FDI up to 49 per cent is allowed under the government approval route, whereas anything above 49 per cent is allowed through the approval of the cabinet committee on security.

Customs duty relaxation
- No customs duty on 217 tariff lines covered under the Information Technology Agreement (ITA-1) of the WTO. Peak rate for basic customs duty is 10 per cent

Reduced central excise
- Mean rate of excise duty (CENVAT) is 12.5 per cent
- Microprocessors, hard disc drives, CD ROM drives, DVD drives/DVD writers, flash memory sticks and combo-drives are exempt from excise duty payment and SAD. Components and accessories of mobile handsets are exempt from excise duty and SAD

Electronic Development Fund Policy
- Under Union Budget 2017, government has increased the allocation of the Modified Special Initiative Package & the Electronics Development Fund to US$ 110.81 million to create an eco-system to make India a global manufacturing hub.

Inverted Duty
- Inverted Duty has been rationalised for various electronics products including tablets, mobile phones, LED lights, LCD/LED TVs, telecom equipment etc.

Goods & Services Tax
- GST rollout on July 1, 2017 is expected to have a positive impact on small electronic devices market like mobile phones due to a drop in tax to 12 per cent from the current 13.5 per cent.

Source: Department of Commerce, Government of India; Department of Electronics and Information Technology; TechSci Research
Notes: FDI – Foreign Direct Investment; SAD – Special Additional Duty of Customs, R&D – Research & Development
• EHTP provides benefits, such as duty waivers and tax incentives, to companies which replace certain imports with local manufacturing
• Cabinet approved the Modified Special Incentive Package Scheme (M-SIPS) to boost electronics manufacturing in India, under which the firms achieving a turnover of US$1.48 billion within a timeframe of 5 years from the approval date would be incentivised.

• Intellectual Property Rights (IPR) are a key determinant of progress in R&D and innovation in the electronics sector
• GOI has amended relevant IPR-related acts (like the Copyright Act, Trademark Act, New Designs Act) from time to time to help spruce up innovation and new technologies in the sector

• The scheme was notified on July 27, 2015 to attract investments in electronics manufacturing. Incentives would be provided under MSIPS on the investment proposals being received. Till September 2015, investments of USD17.5 billion has been received
• In December 2016, the IT and Electronics Ministry is planning to take forward a reworked flagship incentive scheme MSIPS (Modified Special Incentive Package Scheme) for electronics manufacturing, to be presented to the Cabinet, with an objective to fast-forward investments

• As of July 2015, investments of USD13.96 million for 2 EMCs have been approved. Total number of EMCs approved in the last 1 year have become 21; 16 for Greenfield EMCs, 3 for Brownfield EMCs in 7 states
• As of December 2015, investments of USD18.67 billion has been allocated in the electronics manufacturing sector

Source: Department of Commerce, Government of India; Department of Information Technology Annual Report; TechSci Research
Notes: EPCG – Export Promotion Capital Goods Scheme; EHTP – Electronic Hardware Technology Park Scheme; IPR – Intellectual Property Rights; GOI – Government of India
For updated information, please visit www.ibef.org
### Favourable business conditions
- As of April 2017, Haryana government plans to introduce a new policy on electronics, communication & information sector. With an aim to create an investor friendly environment in the state, the government plans to provide incentives for IT & ITEs/BPO/ electronics manufacturing and develop the reliable infrastructure.

### Focus on new technologies
- To build on the emerging chip design & embedded software industry for achieving global leadership in Very Large Scale Integration (VLSI), chip design and other frontier technical areas and to achieve a turnover of USD55 billion by 2020, also focus on handling e-waste in an environment friendly policies
- The Ministry of Electronics and IT has revised policy to make India a global semiconductor hub to attract private sector companies, the Government will play an active role in it

### Promote exports
- To increase export in the electronic system design and manufacturing sector from USD5.5 billion to USD80 billion by 2020

### Improving supply chain
- To build a strong supply chain of raw materials, parts and electronic components for raising the indigenous availability of these inputs from the current 20–25 per cent to over 60 per cent by 2020

### Building competencies
- To develop core competencies in strategic and core infrastructure sectors like telecommunications, automotive, avionics, industrial, medical, solar, information broadcasting and railways

### Electronic Manufacturing Clusters (EMCs)
- Provide incentives for setting up of 200 Electronic Manufacturing Clusters (EMCs) - setting up of greenfield EMCs and up gradation of brownfield EMCs

*Source: Department of Information Technology; TechSci Research*
### Magnetic Heads
- BCD of 7.50/10.00 per cent would be imposed on ceramic/magnetic cartridges and stylus, level meters/level indicators/tuning indicators/peak level meters/battery meter/VC meters/tape counters, antennas, EHT cables, tone arms, electron guns

### Road Construction Machinery
- CVD of 12.50 per cent would be charged on specified machinery required for construction of roads

### Mobile Phones
- BCD of 10 per cent, CVD of 12.50 per cent and SAD of 4 per cent will be imposed on charger/adapter, battery and wired headsets/speakers for manufacture of mobile phones
- Whereas, no duty will be charged on inputs, parts & components, subparts for manufacturing of charger/adapter, battery and wired headsets/speakers of mobile phones
- SAD of 2 per cent on populated PCB for manufacturing of mobile phones

### Telecommunication Equipment
- BCD of 10 per cent on specified telecommunication equipment (Soft switches and VoIP equipment namely VoIP phones, media gateways, etc.)
- BCD of 10 per cent on preform silica to manufacture telecom grade optical fibre/cables

### Tablet & Desktop Computers/Laptops
- SAD of 4 per cent on populated PCBs for manufacture of personal computers (laptop or desktop)
- SAD of 2 per cent on populated PCB for manufacture of tablet computers

## Electrical Equipments
- Exemption of BCD & SAD from machinery, electrical equipment, instrument & parts, thereof (except PCBs) for semiconductor wafer fabrication/LCD fabrication units
- Machinery, electrical equipment & instrument & parts thereof (except populated PCBs) imported for Assembly, Test, Marking & Packaging of semiconductor chips (ATMP) would be exempted from BCD & SAD
- Under Union Budget 2017, the government has set aside US$ 1.01 billion towards seed capital to build a corpus for the electronic development fund, which will support innovation & entrepreneurship in electronics sector.

## Capital Goods
- Exemption of BCD on specified capital goods & inputs used in manufacturing of Micro fuses, sub-miniature fuses, resettable fuses & thermal fuses
- CVD would be exempted from capital goods/spare: raw materials, parts, material handling equipment and consumable for repairs of ocean-going vessels by a ship repair unit.

## Medical Equipments
- All type of duties will be exempted from disposable sterilized dialyzer & micro barrier of artificial kidney
- Exemption of BCD from Medical Use Fission Molybdenum-99 imported by Board of Radiation and Isotope Technology (BRIT) for manufacture of radio pharmaceuticals

## Digital Electronics
- All duties exempted from parts & components, subparts for manufacture of routers, broadband Modems, Set-top boxes for gaining access to internet, set top boxes for TV, digital video recorder (DVR) / network video recorder (NVR), CCTV camera / IP camera, lithium ion battery, other than those for mobile handsets

Source: Department of Electronics and Information Technology (DeitY); TechSci Research, Notes: BCD – Basic Custom Duty, CVD – Counter veiling Duty, SAD – Special Additional Duty, PCB – Printed Circuit Board
Incentives provided by government to attract investors

* To provide subsidy of up to USD10 million per 100 acres of project in electronics manufacturing clusters
* Reimbursement of excise duties for capital equipment in non-SEZ units
* No central taxes & duties for 10 years in high-tech facilities such as semiconductor fabricating units
* Preferential market access to domestically manufactured electronic products
* Various export incentives such as 2–5 per cent of duty credit on exports of different products
* Create a completely secure cyber ecosystem in the country
* Implementation of e-waste (Management & Handling) Rules, 2011
* Moreover, the government proposed an Electronics Development Fund worth USD2 billion to promote innovation, R&D, product commercialisation & nano–electronics

Source: Department of Information Technology; TechSci Research

For updated information, please visit www.ibef.org
THE ELECTRONICS SECTOR IN INDIA HAS ATTRACTED STRONG FDI INFLOWS

- Cumulative FDI inflows into the electronics sector, including computer hardware & software, increased at a CAGR of 14 per cent, with the value increasing from USD9.8 billion in FY10 to USD24.66 billion in FY17.

- Demand growth, supply advantages & policy support have been instrumental in attracting FDI.

Cumulative FDI inflows to the electronics sector (USD billion) (FY17)

<table>
<thead>
<tr>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>0.89</td>
<td>1.16</td>
<td>1.19</td>
<td>1.34</td>
<td>1.49</td>
<td>1.64</td>
<td>1.72</td>
</tr>
</tbody>
</table>

Cumulative FDI inflows to electronics sector (combined)¹ (USD billion) (FY17)

<table>
<thead>
<tr>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.8</td>
<td>10.7</td>
<td>11.2</td>
<td>11.69</td>
<td>12.82</td>
<td>17.29</td>
<td>21.02</td>
<td>24.66</td>
</tr>
</tbody>
</table>

Source: Department of Industrial Policy and Promotion (DIPP); TechSci Research
Notes: FDI – Foreign Direct Investment; FY – India Financial Year (April – March)
¹ – Includes computer software & hardware sector inflows
The sector has witnessed a number of key M&A deals:

- Of the M&A deals in the sector since 2010, acquisition of Harman International by Korean electronic giant Samsung Electronics was one of the highest in terms of value in FY17.

- In 2015, Intel Corporation acquired Altera Corporation in an all-cash transaction for USD54 per share. The deal is valued at approximately USD16.7 billion.

- In 2016, Centum Electronics Ltd acquired 51 percent controlling stake in France based Adetel Group SA.

- In 2016, Samsung Electronics has merged with Harmon international for an amount of US$ 8000.

Source: Thomson One Banker; Grant Thornton; CMIE Business Beacon; TechSci Research

Note: NA is Not Available, M&A – Mergers and Acquisitions

### Key Mergers and Acquisitions (M&A)

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Target</th>
<th>Deal date</th>
<th>Deal value (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samsung Electronics</td>
<td>Harman International</td>
<td>14th November, 2016</td>
<td>8000</td>
</tr>
<tr>
<td>Mitsubishi Electric Corp</td>
<td>Messung Group</td>
<td>23rd January, 2012</td>
<td>NA</td>
</tr>
<tr>
<td>Crompton Greaves Ltd</td>
<td>ZIV Group</td>
<td>27th July, 2012</td>
<td>192</td>
</tr>
<tr>
<td>Toshiba Mitsubishi-Electric</td>
<td>AEG Power Solutions India</td>
<td>28th April, 2014</td>
<td>12.40</td>
</tr>
<tr>
<td>MSR Telecom Pvt Ltd</td>
<td>Bloom Mobiles Pvt Ltd</td>
<td>19th May, 2014</td>
<td>NA</td>
</tr>
<tr>
<td>UrbanClap Technologies India Pvt. Ltd.</td>
<td>Handy Home Solutions Pvt. Ltd.</td>
<td>25th January, 2016</td>
<td>NA</td>
</tr>
<tr>
<td>Centum Electronics Ltd.</td>
<td>Adetel Group SA.</td>
<td>17th June, 2016</td>
<td>NA</td>
</tr>
</tbody>
</table>

For updated information, please visit [www.ibef.org](http://www.ibef.org)
May 05: LG Electronics launches latest series of Cinema 3D Smart TVs with marketing spend of USD20.8 million
Jan 17: Samsung to raise its investments to USD41.4 billion for consolidation in its position in mobile chips & flat screens
Videocon plans to invest around USD12.5 million in Research & Development during FY13
Oct 31: Sony to invest USD100 million in expansion & marketing
• Mar 13: Reliance & Videocon are in talks to invest USD5.2 billion to set up a chip manufacturing plant
• Jul 13: Panasonic plans to invest USD250 million over the next 3 years to launch a range of smart phones in India
• Sep 13: Mitsubishi Electric plans to invest about USD55 million in India by 2016 for setting up manufacturing elevators & making air conditioning equipment
• Apr 14: Toshiba Mitsubishi Electric acquired complete share capital of AEG Power Solutions

Source: India Electronic News; Assorted News articles; TechSci Research
Note: R&D – Research and Development

For updated information, please visit www.ibef.org
MULTIPLE FACTORS FAVOUR INVESTMENT IN ELECTRONICS

Growing customer base: Market for electronics is expected to expand at a CAGR of 66.1 per cent during 2015–20. The demand for electronics hardware in India is projected to increase to USD139 billion by 2018.

Incentives & concessions under schemes: Export Oriented Unit (EOU) Scheme, Electronics Hardware Technology Park (EHTP) Scheme, Software Technology Park (STP) Scheme & EOU/EHTP/STP Schemes
- IESA (India Electronics & Semiconductor Association) announced the launch of new chapters to strengthen & improve the supply chain. Chennai, also known as Electronic Manufacturing Services (EMS), is one of the fastest growing manufacturing cities, with easy accessibility to seaports.

Targeted reduction in import bill: Domestic electronic production accounts for around 45.0 per cent of the total market demand. Therefore, in order to reduce the import bill, the government plans to boost the domestic manufacturing capabilities & is considering a proposal to give preference to Indian electronic products in its purchases.

Increasing penetration in the consumer durables segment: Consumer durables market in India is characterised by low penetration in various product segments, viz. 1 per cent in microwaves, 3 per cent in ACs, 16 per cent in washing machines, 18 per cent in refrigerators, etc. Higher disposable incomes are leading to realisation of penetration potential in various product segments, especially in rural areas.

Policy & investment support: As per the targeted reduction in import bill, the government has proposed an investment of USD555.0 million for semiconductor manufacturing plants & USD222.0 million. In Union Budget 2016–17, inputs, parts, components & subparts for manufacturing of charger/adapter, battery & wired handsets / speakers of mobile phones are fully exempted from Basic Customs Duty (BCD), Counter Veiling Duty (CVD) & Special Additional Duty (SAD).

Source: Department of Information Technology Annual Reports; A Report by Corporate Catalyst India (CCI) on ‘Electronics Industry in India’; Dataquest India; Electronics Industries Association of India, TechSci Research
ERA OF DIGITISATION OPENS NEW OPPORTUNITIES … (1/3)

Households with TVs in India

2017
- 183 million households (as of 2017)
- 181 million TV sets (as of 2017)
- 64 per cent TV penetration in total HHs (as of 2017)
- 85 per cent C&S penetration of TV HHs (as of 2016)

2020F
- 306 million households (as of 2020F)
- 202 million TV sets (as of 2020F)
- 66 per cent TV penetration in total HHs (as of 2020F)
- 87 per cent C&S penetration of TV HHs (as of 2020F)

The government announced the digitisation of cable television in India in 4 phases, which would be completed by December 2016

Digitisation will lead to complete switchover from analogue cable to Digital Addressable Systems in a phased manner

The number of DTH subscribers in India is expected to increase from 97.05 million in December 2016 to 200 million by 2018

The number of active DTH subscribers in FY17, was recorded at 62.25 million.

Source: Department of Information Technology, Dish TV Investor Presentation, TRAI, TechSci Research

Notes: TV – Television, HHs – Households, C&S – Cable & Satellite, FY17: Data is as on December 2016, F – Forecast
Dish TV accounted for the largest share in the DTH market with 25 per cent in FY17, followed by Tata Sky & Airtel Digital with shares of 23 per cent & 20 per cent, during the same year, respectively, based on gross subscribers.

Dish TV is considered to be the 1st company to achieve a break-even point in the Indian DTH market.

Market Share of Leading Companies (FY17¹)

- Dish TV: 25%
- Tata Sky: 23%
- Airtel: 20%
- Videocon D2H: 20%
- Sun Direct: 10%
- Reliance: 2%

Source: Dish TV, TechSci Research
FY17¹: Data till December 2016
The digitisation of cable television has led to increased demand for set-top boxes, dish, cables & other electronic component; this has resulted in many opportunities for local & foreign players to enter the market.

Digitisation will lead to increased broadband penetration in India & open up new avenues for companies offering value-added services such as online gaming, HD television Internet, music & radio.

**Dish TV revenues (USD million)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FY08</td>
<td>102.5</td>
<td>159.9</td>
<td>228.4</td>
<td>314.5</td>
<td>417.6</td>
<td>399</td>
<td>414.6</td>
<td>460.1</td>
<td>340.3</td>
<td>455.43</td>
</tr>
</tbody>
</table>

**Sun TV revenues (USD million)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FY08</td>
<td>213.8</td>
<td>218.5</td>
<td>294.2</td>
<td>374.9</td>
<td>347.8</td>
<td>372.2</td>
<td>392.57</td>
<td>402.17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Department of Information Technology; Company Websites, TechSci Research
Bharat Electronics (BEL): A Public Sector Icon … (1/2)

Salient features:

- An Indian state-owned aerospace & defence company.
- Established in 1954 under the Ministry of Defence to meet specialised electronic needs of the Indian defence services.
- The company has a strong commitment to quality & innovation, with 2 dedicated central research laboratories.
- During FY16, R&D expenditure was 9.6 per cent of the company’s total turnover.
- The company has 9 manufacturing units; each unit has its own Development & Engineering (D&E) division.
- Joint Venture with General Electric Medical System & Multitone, UK.

Revenues (USD million)

Source: BEL website; Annual Reports; Business Standard; TechSci Research.

<table>
<thead>
<tr>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1008.3</td>
<td>1028.8</td>
<td>1092.5</td>
<td>1199.4</td>
<td>1205.2</td>
<td>1103</td>
<td>1015.6</td>
<td>1107.4</td>
<td>1114.4</td>
<td>1369.4</td>
</tr>
</tbody>
</table>
BHARAT ELECTRONICS (BEL): A PUBLIC SECTOR ICON … (2/2)

<table>
<thead>
<tr>
<th>Key success factors</th>
<th>Financial highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Focus on innovation &amp; R&amp;D</td>
<td>• As of 31st March 2016, BEL’s order book was around USD4.9 billion</td>
</tr>
<tr>
<td>• Key technological collaborations with leading European, American &amp; Israeli companies</td>
<td>• During FY08–16, BEL’s revenue increased at a CAGR of 1.26 per cent, from USD1008.3 million in FY08 to USD1114.4 million in FY16</td>
</tr>
<tr>
<td>• Rising defence spending in India</td>
<td>• During the same period, BEL’s net profits decreased at a CAGR of 0.13 per cent, from USD205.29 million in FY08 to USD207.4 million in FY16.</td>
</tr>
<tr>
<td>• Governmental emphasis on indigenisation &amp; reduction of import bill</td>
<td>• In 2016, GOI announced its plans to buy back 25 per cent shares of Bharat Electronics Ltd (BEL)</td>
</tr>
<tr>
<td>• Diversification in the civilian &amp; export market</td>
<td></td>
</tr>
<tr>
<td>• Under the Navratna category in 2016, Bharat Electronics Ltd (BEL) won 4 PSE Excellence Awards 2015</td>
<td></td>
</tr>
</tbody>
</table>

Source: BEL website; Annual Reports; TechSci Research
Note: GOI – Government of India
Micromax started out as an IT software company in 2000

Micromax began manufacturing mobile phones in 2010; besides sourcing from China & became one of the largest Indian domestic mobile handsets company operating in low cost feature phone segments by 2010

With presence across 14 countries, the company manufactures mobile handsets, tablets & LED televisions

The company’s share in the mobile handset market in India increased from 5 per cent in 2011 to 8.7 per cent in 2013

In April 2016, Micromax entered into strategic partnership with TranServ & Visa to offer a digital payment infrastructure platform to consumers.

In August 2016, has launched its 1st ever smart LED television in 32, 40 & 50 inches to be exclusively available on Flipkart. The range is to offer an inbuilt Smart OS, wireless smartphone control, preloaded Google Play Store and built-in WiFi, enabling the consumers to access the internet and run their favourite applications.

In December 2016, Micromax has joined hands with Uber offering the app in-built in close to 100 million of its smartphones for the next 3 years.

In February 2017, Micromax is to set up an independent fund worth US$100 million, in which the investments will be used to finance 10-12 start ups.
USEFUL INFORMATION
Electronics Industries Association of India (ELCINA)
ELCINA House, 422 Okhla Industrial Estate,
New Delhi – 110 020, India
Phone: 91 11 26924597,26928053
Fax: 91 11 26923440
E-mail: elcina@vsnl.com
Website: www.elcina.com/

Telecom Equipment Manufacturers Association (TEMA)
4th Floor, PHD House, Opp. Asian Village,
New Delhi – 110 016, India
Tel: 91 11 26859621
Fax: 91 11 26859620
E-mail: tema@del2.vsnl.net.in
Website: http://www.tfci.com/cni/tema.htm
Manufacturers Association for Information Technology (MAIT)
4th Floor, PHD House, Opp. Asian Games Village,
New Delhi 110 016, India
Tel: 91 11 26855487
Fax: 91 11 26851321
E-mail: contact@mait.com
Website: www.mait.com

Consumer Electronics and Appliances Manufacturers Association
(CEAMA)
5th Floor, PHD House
4/2, Siri Institutional Area, August Kranti Marg
New Delhi-110 016
Telefax: 91- 11- 46070335, 46070336
e-mail: ceama@airtelmail.in
Website: www.ceama.in
GLOSSARY

- **C&B**: Communication and Broadcasting
- **CAGR**: Compound Annual Growth Rate
- **Capex**: Capital Expenditure
- **CENVAT**: Central Value Added Tax
- **EHTP**: Electronic Hardware Technology Park
- **EPCG**: Export Promotion Capital Goods Scheme
- **FDI**: Foreign Direct Investment
- **FY**: Indian Financial Year (April – March); for example FY10 means April 2009 – March 2010
- **PLC**: Programmable Logic Controller
- **R&D**: Research and Development
- **SCADA**: Supervisory Control and Data Acquisition
- **USD**: US Dollar

Wherever applicable, numbers have been rounded off to the nearest whole number.
### Exchange rates (Fiscal Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>INR equivalent of one USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004–05</td>
<td>44.81</td>
</tr>
<tr>
<td>2005–06</td>
<td>44.14</td>
</tr>
<tr>
<td>2006–07</td>
<td>45.14</td>
</tr>
<tr>
<td>2007–08</td>
<td>40.27</td>
</tr>
<tr>
<td>2008–09</td>
<td>46.14</td>
</tr>
<tr>
<td>2009–10</td>
<td>47.42</td>
</tr>
<tr>
<td>2010–11</td>
<td>45.62</td>
</tr>
<tr>
<td>2011–12</td>
<td>46.88</td>
</tr>
<tr>
<td>2012–13</td>
<td>54.31</td>
</tr>
<tr>
<td>2013–14</td>
<td>60.28</td>
</tr>
<tr>
<td>2014–15</td>
<td>61.06</td>
</tr>
<tr>
<td>2015–16</td>
<td>65.46</td>
</tr>
<tr>
<td>2016–17 (E)</td>
<td>66.95</td>
</tr>
</tbody>
</table>

### Exchange rates (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>INR equivalent of one USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>43.98</td>
</tr>
<tr>
<td>2006</td>
<td>45.18</td>
</tr>
<tr>
<td>2007</td>
<td>41.34</td>
</tr>
<tr>
<td>2008</td>
<td>43.62</td>
</tr>
<tr>
<td>2009</td>
<td>48.42</td>
</tr>
<tr>
<td>2010</td>
<td>45.72</td>
</tr>
<tr>
<td>2011</td>
<td>46.85</td>
</tr>
<tr>
<td>2012</td>
<td>53.46</td>
</tr>
<tr>
<td>2013</td>
<td>58.44</td>
</tr>
<tr>
<td>2014</td>
<td>61.03</td>
</tr>
<tr>
<td>2015</td>
<td>64.15</td>
</tr>
<tr>
<td>2016 (Expected)</td>
<td>67.22</td>
</tr>
</tbody>
</table>

Source: Reserve bank of India, Average for the year.
India Brand Equity Foundation (“IBEF”) engaged TechSci to prepare this presentation and the same has been prepared by TechSci in consultation with IBEF.

All rights reserved. All copyright in this presentation and related works is solely and exclusively owned by IBEF. The same may not be reproduced, wholly or in part in any material form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this presentation), modified or in any manner communicated to any third party except with the written approval of IBEF.

This presentation is for information purposes only. While due care has been taken during the compilation of this presentation to ensure that the information is accurate to the best of TechSci and IBEF’s knowledge and belief, the content is not to be construed in any manner whatsoever as a substitute for professional advice.

TechSci and IBEF neither recommend nor endorse any specific products or services that may have been mentioned in this presentation and nor do they assume any liability or responsibility for the outcome of decisions taken as a result of any reliance placed on this presentation.

Neither TechSci nor IBEF shall be liable for any direct or indirect damages that may arise due to any act or omission on the part of the user due to any reliance placed or guidance taken from any portion of this presentation.