

Electronics Manufacturing Industry in India



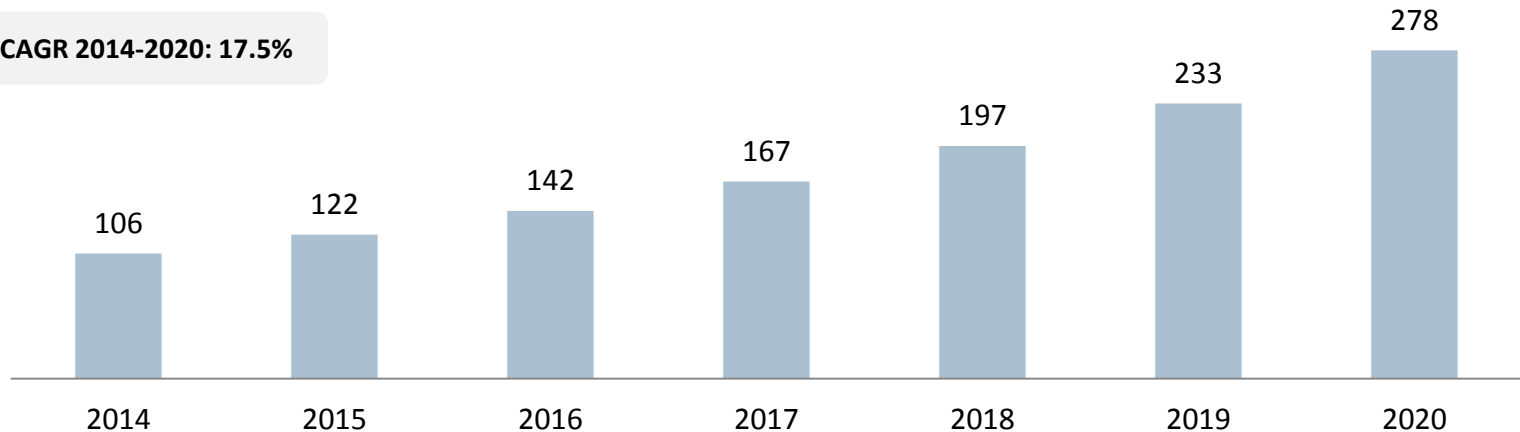
October 2017

Indian Electronics System Design Manufacturing (ESDM) Market Overview

Consistent local demand for electronic products, along with increasing manufacturing investment, is anticipated to catapult the industry into a high growth phase. Overall industry growth is also a reflection of the ecosystem development.

Total Indian ESDM Industry, Forecasts (\$ Billion)

CAGR 2014-2020: 17.5%



- In comparison to the global ESDM industry that exhibits below 5% year-on-year growth trends, the Indian ESDM industry is expected to have one of the highest growth rates, representing a CAGR of 17.5% from 2014 to 2020.
- The Indian ESDM industry currently characterized by the low value addition is expected to witness investment in manufacturing and thereby is likely transform to a high value-adding sector by 2020.

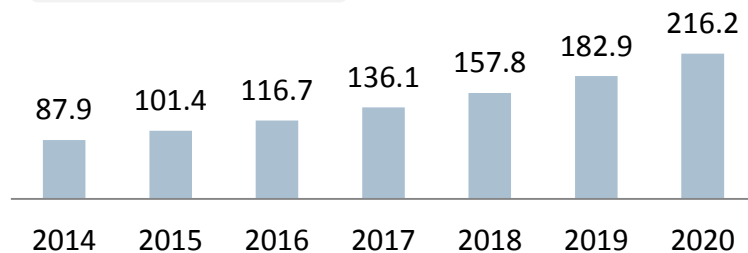
Source: Frost & Sullivan

Indian ESDM Industry Segments

The electronic product market dominates with approximately 81% share in the ESDM industry in 2017, whereas component and Electronic Manufacturing Services (EMS) markets are expected to witness high growth rates between 2014 and 2020.

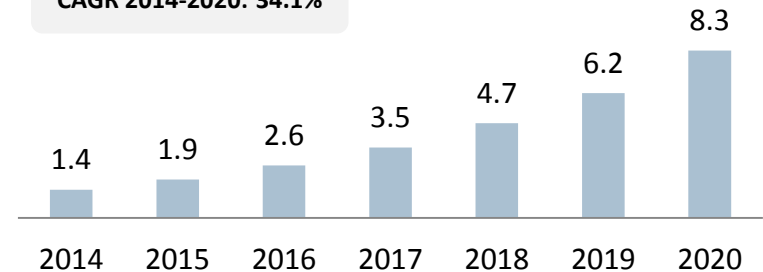
Electronic Product Market Forecasts (\$ Billion)

CAGR 2014-2020: 19.5%



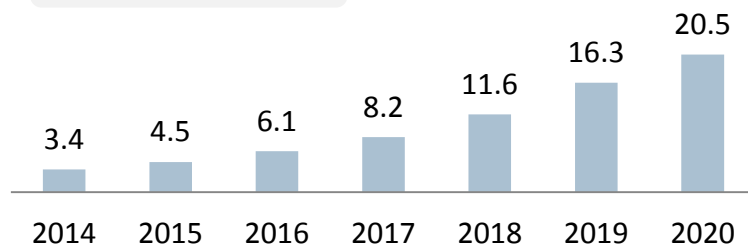
EMS Market Forecasts (\$ Billion)

CAGR 2014-2020: 34.1%



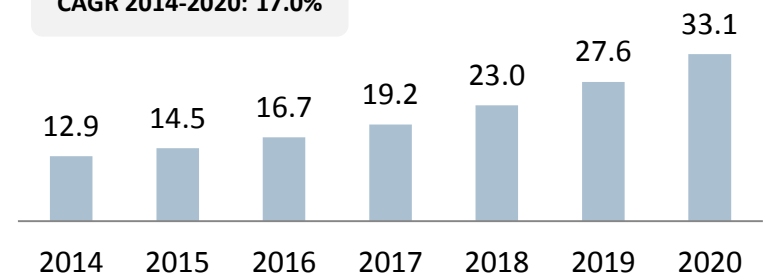
Component Market Forecasts (\$ Billion)

CAGR 2014-2020: 34.9%



Semiconductor Design Market (\$ Billion)

CAGR 2014-2020: 17.0%



Source: Frost & Sullivan

SWOT of ESDM Industry

Advantages

- Huge demand potential in the country
- Strong design and R&D capability in select product markets; resident design talent
- Government schemes such as NKN, NOFN, and Digital India initiative
- Adequately developed EMS industry to be a significant enabler



Opportunities

- Huge local demand to be an influencer in attracting investment
- Rising manufacturing costs in China leads to search for alternate manufacturing hubs
- Significant export potential in neighboring markets such as the MENA region
- “Make in India” initiative to accelerate investment activity in core and allied sectors

Weaknesses

- Reliance on imports for critical electronic components
- Convoluted duty structure; imports cheaper locally manufactured products in select cases
- Inadequate testing facilities and standards implementation leading to presence of low-quality grey market goods
- Debilitating Free Trade Agreements with Thailand and Japan



Threats

- Emergence of robust manufacturing ecosystems in East Asian countries and Mexico
- Inadequate local manufacturing ecosystems for components and other raw materials
- Infrastructure inadequacy for industries; lack of access to reliable power and clean water
- Depreciation of the Indian Rupee as a short-term threat

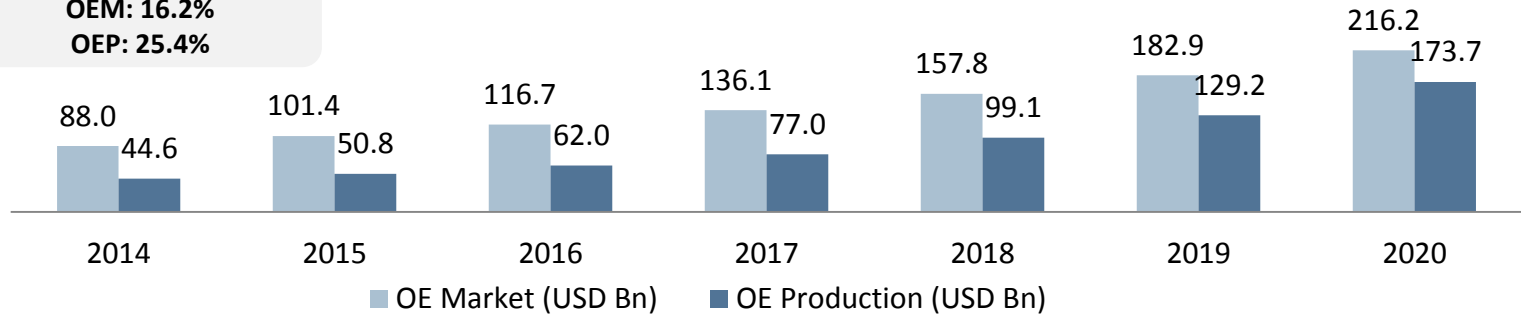
Source: Frost & Sullivan

Indian Electronics Product Market

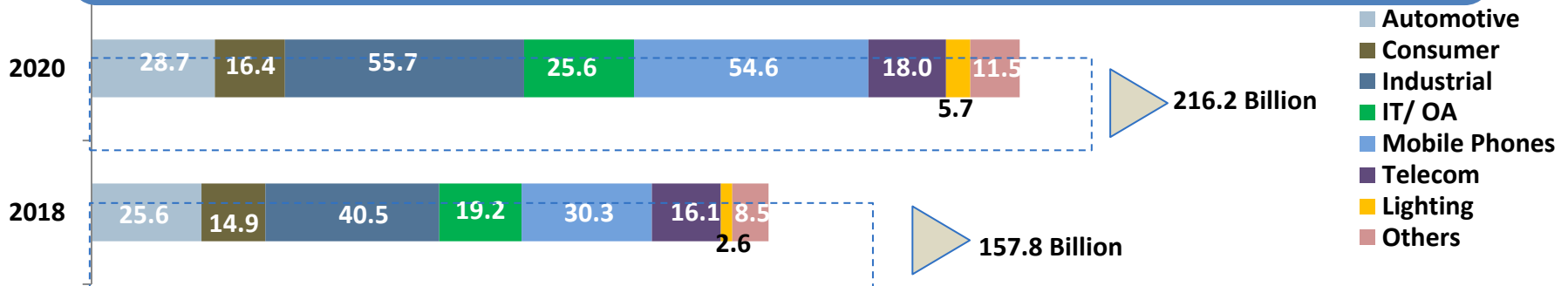
Original Equipment production (OEP) expected to grow at 1.6X the Original Equipment Market (OEM). Effective implementation of policy measures is expected to be a crucial element defining the electronic product manufacturing market's growth.

Electronics Product Market Forecasts (\$ Billion)

CAGR 2014-2020
OEM: 16.2%
OEP: 25.4%



Key Electronics Product Market Segments (\$ Billion)

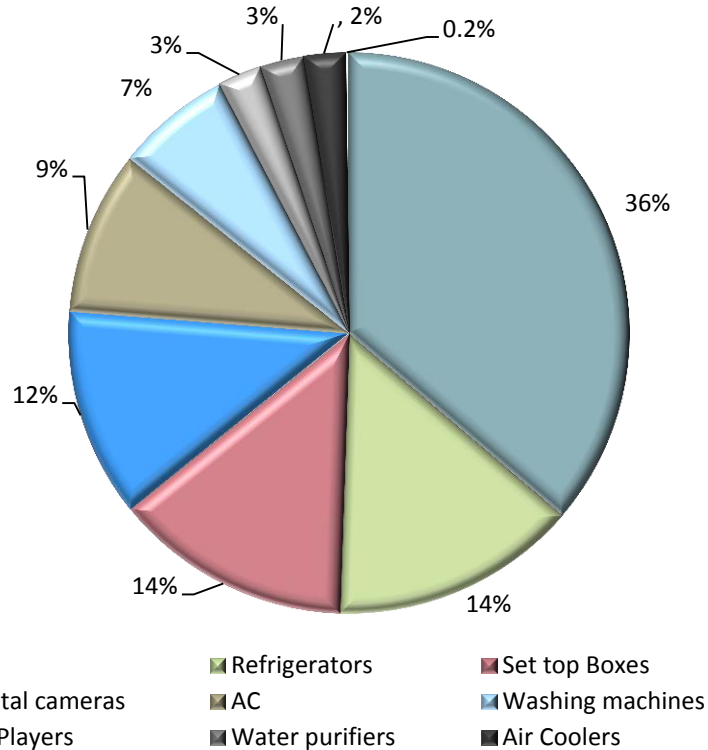


Source: Frost & Sullivan

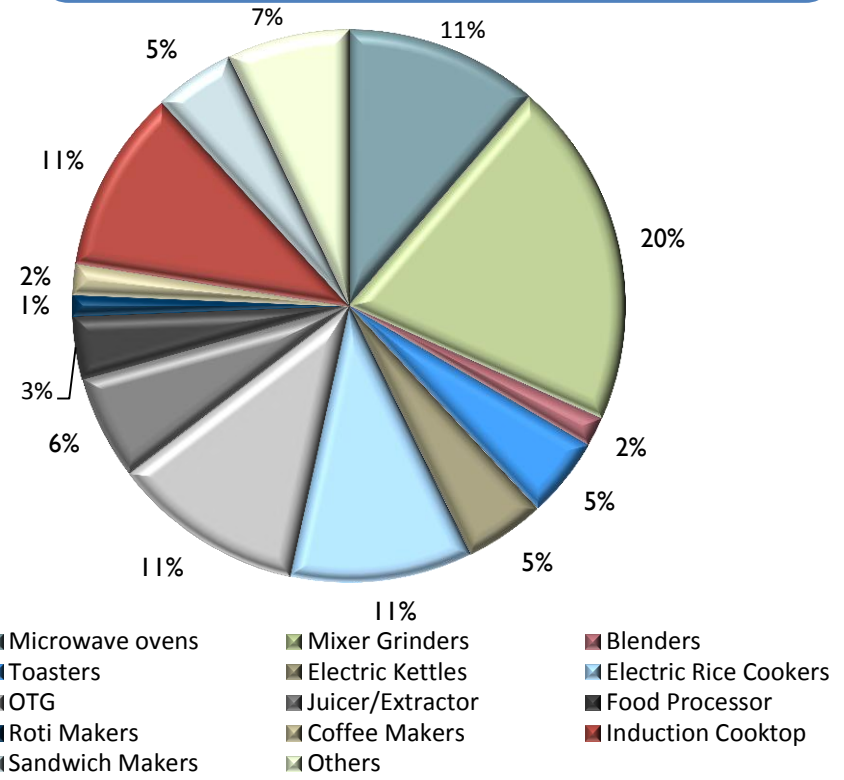
Indian Consumer Electronics Industry

The TV market represents the biggest category in the consumer electronics market with overall penetration of 60% in the country. The appliances market is a mix of high-volume, low-value products that have different levels of adoption across the country.

Consumer Electronics Market – By Segment



Consumer Appliances Market – By Segment

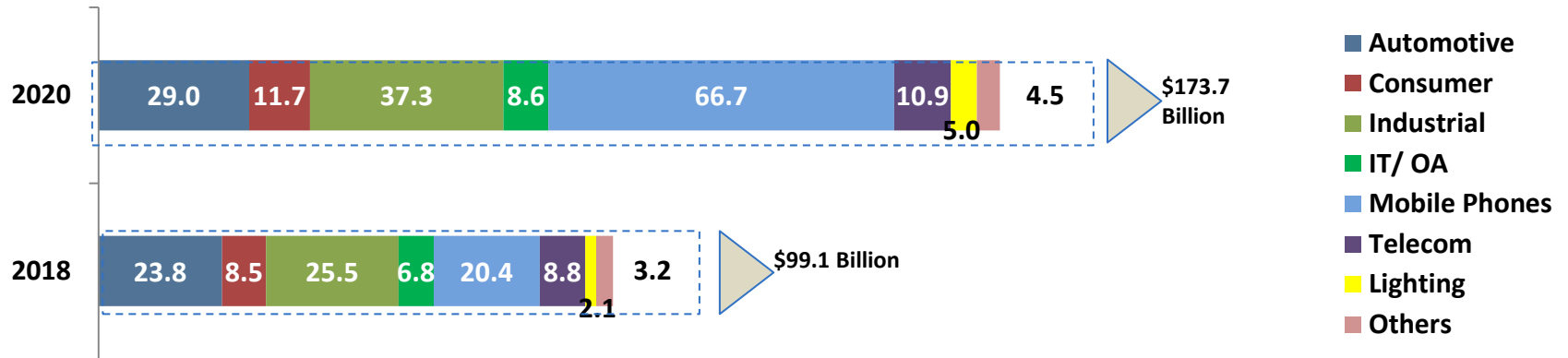


Note: This information is for base year 2016

Source: Frost & Sullivan

Growth of Domestic Manufacturing in India

Business-friendly policies of the Government of India, stable political leadership, and turmoil in certain economies around the globe have together created a conducive investment climate in India, further boosting the domestic manufacturing.



Electronics Segment	Key Products to Drive Manufacturing till 2020 and Beyond
Automotive	HVAC, ECU, Airbags, ABS, AMT
Consumer	FPD TVs, Washing Machines, Set Top Boxes
Industrial	Process Machinery, Boilers, Printing Machinery, Machine Tools
IT/ OA	Notebooks, Desktops, Servers
Mobile Phones	Feature Phones, Smart Phones
Telecom	Media Gateways, BTS, Enterprise Routers, IP PBX
Lighting	LED Lighting
Other Electronics	Smart Cards, PoS Terminals, Medical Devices, ATM

Source: Frost & Sullivan

Programs/Policies and Their Positive Impact on Electronics Manufacturing Growth in India

Program/Policies	Impact on Electronics Manufacturing
Make-in-India	Investment in downstream segments creating demand Industry 4.0/ Smart manufacturing practices and greater usage of electronic systems
Digital India	Demand for desktops, notebooks, mobile phones, telecom products
Jan Dhan Yojana	Boost to smart cards, ATMs, PoS terminals
Swachh Bharat Abhiyan	Automation systems, instrumentation for water and waste management
Domestic Efficient Lighting Programme	LED lighting
Smart Cities	IT/ OA products, automation systems, power management products, automotive and transportation systems
Modified Special Incentive Package Scheme	To bridge the viable gap in manufacturing investment levels
Higher Customs Duty on Key Products/Components	To encourage local sourcing and ecosystem development

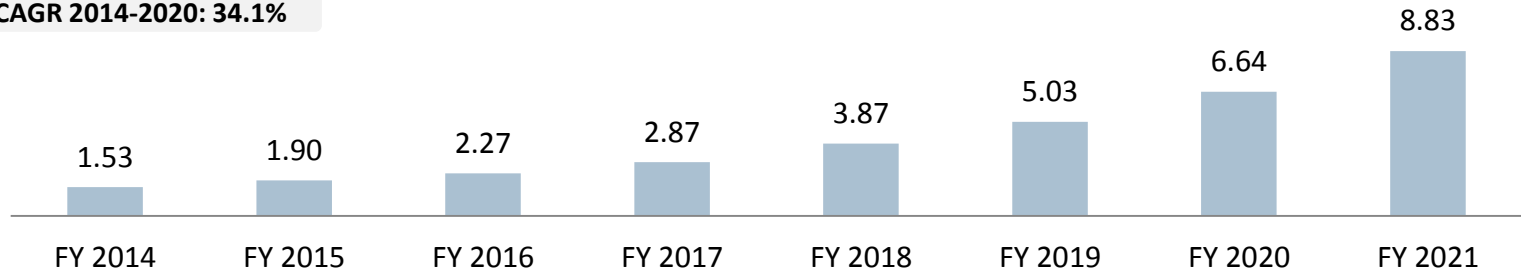
Source: Frost & Sullivan

Electronics Manufacturing Value Chain and Role of EMS

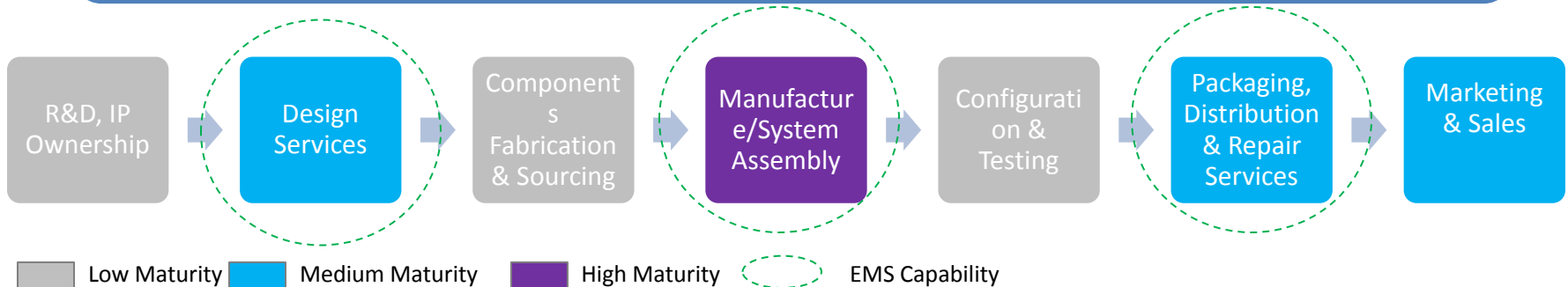
Favourable government policies, Make-in-India initiative, and rising costs in China are the key factors for rise in local outsourced manufacturing, especially in the consumer electronics segment.

Total EMS Market Forecasts (USD Billion)

CAGR 2014-2020: 34.1%



Presence of EMS companies across value chain



Source: Frost & Sullivan

India Versus China

India gaining traction as a competitive alternate to China for electronics manufacturing

	China	India	Ranking Based on These Factors	China	India
2016	High	Low	Component ecosystem	High	Medium
	High	Low	Economies of scale, profit margins	High	Medium
	Medium	High	Economic growth	Medium	High
	Low	High	Domestic market demand	Medium	High
	High	High	Regulations and policies	Medium	High
	High	Low	Logistics and infrastructure	High	Medium
	High	High	Design and engineering capabilities	High	High
	High	Low	Ease of doing business	High	Medium
	High	Medium	Testing facilities	High	High
	Low	High	Labor cost	Low	High
	High	High	Availability of skilled workforce	High	High
	High	Low	Currency fluctuation	Low	High
	High	Low	Export competitiveness	High	Medium
		High	Medium		Low

Source: Frost & Sullivan

Distinct Advantages Give India an Upper Hand



Manufacturing Competitiveness in China

- Stable and substantial supply chain in China with large economies of scale helped China maintain low costs and high margins production of electronic goods in the last two decades.
- Its dominance in electronic manufacturing arises from incredible government support the stakeholders receive primarily in the form of capital subsidy and relaxation of taxes.
- The economy transformed into an export destination for global electronic giants as the country supplied large qualified workers at low wages.
- As China's economy slows down, it struggles with currency devaluation and rising labor wages, the 'low-cost manufacturing' tag has started to lose its sheen, making other emerging economies, such as India, Vietnam, and Malaysia, more attractive for investment.



Manufacturing Competitiveness in India

- On the other hand, India's manufacturing competitiveness is set to soar further as the economy is on growth trajectory.
- Huge electronics domestic demand will be a key driver necessitating the development of local ecosystem.
- Growing investment and increasing local value addition levels will also see manifold jump as more OEMs look toward localization of their products from India.
- Regulatory framework made more investment and business friendly to attract investment through foreign and domestic investors.
- India possesses superior design capabilities and availability of talented workforce at approximately 150% lower wages than China, which strengthens its position as a futuristic domestic-cum-export-oriented manufacturing destination for the globe.

Source: Frost & Sullivan