A CALL TO ACTION FOR BROADENING AND DEEPENING ELECTRONICS MANUFACTURING

BY THE
HON'BLE PRIME MINISTER NARENDRA MODI

$300 BN SUSTAINABLE ELECTRONICS MANUFACTURING & EXPORTS BY 2026

ROADMAP AND STRATEGIES

#MakeInIndia

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INDIA CELLULAR & ELECTRONICS ASSOCIATION
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Vision Document **Volume 2**

Table of Contents

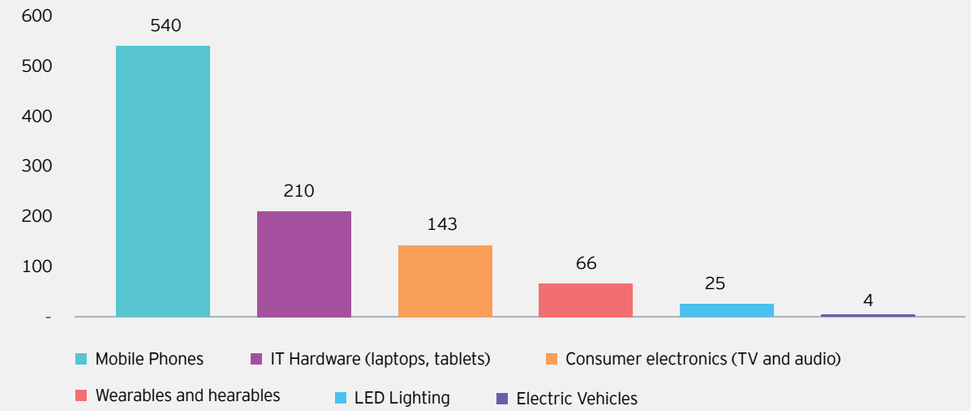
01

Introduction

The electronics industry is one of the largest and fastest growing industries in the world[1]. Electronic products continue to impact and shape our lifestyle prominently in today's digital era. With the world being more connected than ever and the digital push induced by COVID-19 pandemic; the demand for electronic devices is expected to grow steadily and continue to be a major economic driver across the globe.

The global electronics industry is estimated at US$ 2.9 trillion in 2020[2]. For comparison, the global value of electronics industry is almost equal to the economy size of India, which currently stands at US$ 2.9 trillion[3].

Exhibit 1: Global market size of key product segments in 2020-21 (US$ billion)[4]



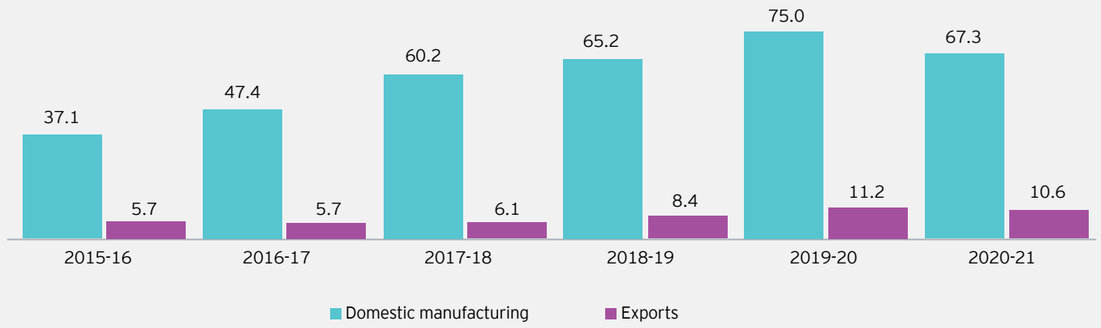
The growth potential and strategic importance of the electronics industry has been widely acknowledged by the Government of India in the National Policy for Electronics, 2019 ('NPE'). NPE was launched with a vision to position India as a global hub for Electronics System Design and Manufacturing (ESDM) by creating an enabling environment for the industry to compete globally amongst others.

Moreover, ESDM industry has been included among 25 priority sectors in the Make in India initiative of the government[5] and thus, is an important pillar to contribute to India's economic growth.

Therefore, policymakers have laid emphasis to encourage sustainable manufacturing and export of electronics in India. On an overall basis, electronics manufacturing had grown from US$37.1 billion in 2015-16 to US$ 67.3 billion in 2020-21[6]. However, COVID-19 related disruptions impacted the growth trajectory in 2020-21 and led to a decline in the manufacturing output to US$67.3 billion[7]. Against this backdrop, the historical trend of electronics manufacturing in India is summarized in Exhibit 2.

1 https://www.jeita.or.jp/english/topics/2018/1218.pdf.
2 https://www.jeita.or.jp/english/press/2020/1216.pdf; https://m.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=18172#F3
3 CEBR World Economic League Table 2022, Page 111 https://cebr.com/wp-content/uploads/2021/12/WELT-2022.pdf
4 IDC, Allied Market Research and ICEA estimates
5 https://pib.gov.in/newsite/PrintRelease.aspx?relid=116091
6 ICEA estimates
7 ICEA estimates

Exhibit 2: Value of electronics manufacturing in India and exports from 2015-16 to 2020-21[8] (US$ billion)



Coupled with the above, increasing labour costs in China, the geopolitical trade and security environment, and the Covid-19 outbreak are compelling many global electronics majors to look at alternative manufacturing destinations and diversifying their supply chains. India is one of the leading contenders for alternate solutions for global electronics companies. The electronics sector has the potential to become one of the top exports of India in the next 3-5 years[9]. Electronics exports may account for significant contributions to the Indian economy in terms of foreign exchange earnings and employment generation.

The National Policy on Electronics (NPE) 2019 set a target of achieving a turnover of US$ 400 billion by 2025. However, the COVID-19 pandemic brought with it unforeseen and unprecedented challenges. In light of this, the NPE 2019 targets for electronics production in 2025-26 at US$ 300 billion appears to be more realistic considering the disruption on account of COVID-19 in the past 18 months which has been aggravated with the new variants of the COVID-19 virus such as the Omicron. In keeping with the targets envisioned in the NPE 2019, there have been numerous consultations and deliberations between industry, industry bodies and the Government to reach at the above revised target for the electronics sector[10]. In view of the above, the revised target of US$ 300 billion forms the basis for research and detailing in this document.

However, the reduced target still aims for a 400% increase from the current level. This will still require significant and persistent policy initiatives, through incentives and efforts to create a conducive electronics manufacturing ecosystem. Removing cost disabilities to ensure global competitiveness in order to be able to manufacture products at scale is also critical to achieve this target. Considering the relatively small size of India's domestic market of US$75 billion[11] vis-à-vis global markets for electronics, India should set its sight on expanding its share in the global markets to reach the target figure of US$ 300 billion by 2025-26.

The Hon'ble Prime Minister, Shri Narendra Modi, on 6 August 2021 gave a clarion call on 'Local Goes Global'. He emphasized on the need to 'increase India's share in the global supply chains in exports manifold [. . .] set up export hubs in the states [. . .] build a seamless and high-quality supply chain within the country [and achieve] growth of our share in the global value chain. The Hon'ble Prime Minister also recognized the importance of stable policies for exports. This requires that for a reasonable period of time, policies that adversely affect investment and business plans (of GVCs, e.g. tariff increases) shall be avoided.[12]

This report ("Vision Document – Volume 2") is in continuation to the the "Vision Document - Volume 1" for broadening and deepening electronics manufacturing titled "Increasing India's Electronics Exports and Share in GVCs – Towards an Atmanirbhar Bharat" released on November 2, 2021. The Vision Document – Volume 1, was a strategic report prepared to achieve the Hon'ble Prime Minister's vision detailed in his address on August 6 2021[13]. The vision document addressed the specific steps needed to transform India into an export led economy and place itself as a key global supply chain partner.

8 ICEA estimates
9 ICEA estimates
10 https://pib.gov.in/PressReleasePage.aspx?PRID=1743434 and ICEA
11 ICEA estimates
12 https://pib.gov.in/PressReleasePage.aspx?PRID=1743434
13 https://pib.gov.in/PressReleasePage.aspx?PRID=1743434

The present report sets out an ambitious target of achieving US$300 billion worth of electronics manufacturing by 2026. It also deep dives into specific segments which are estimated to contribute significantly to this target including contribution from exports. The report presents an execution strategy by recommending short and long term actions required to achieve the target. This Vision Document - Volume 2 is in continuation of the Vision Document - Volume 1, and read together provide a complete strategy for transforming India into a US$300 bn global hub for electronics manufacturing, exports including increasing India's share in Global Value Chains.

This vision document is an endeavor in this direction to broadly outline the vision and the policy measures required to achieve the vision by India's electronics industry – to achieve the US$300 billion electronics manufacturing target.

Need for Shift in Focus from the Traditional Approach

Till 2011, India was a major manufacturing and export hub for mobile phones. However, the pace of exports reduced significantly post shutdown of Nokia's manufacturing facility in 2014. Domestic manufacturing also suffered tremendously[14]. Imports grew and India's mobile industry became largely import dependent[15].

To push electronics manufacturing in general and mobile manufacturing in particular, the Government in consultation with the industry resorted to Phased Manufacturing Policy (PMP) in 2017. This was aimed at a duty-based import substitution effort that would largely depend upon imposing duties in a phased manner. It was an attempt to start generating domestic manufacturing primarily for domestic use. The exports were negligible[16].

Five years later in 2022, the approach and the entire strategy of the Government has undergone a change - from PMP (import substitution) to the Production Linked incentive (PLI) approach aimed at transforming India into a global hub for mobile and electronics manufacturing. This would bring competitiveness, scale and exports at the centre of the policy focus, replacing the earlier import substitution objectives and supportive policies.

This shift is evident as below:

- NPE 2019 envisages strengthening India's linkages with global trade, integration with global value chains and build policies and incentive framework to boost exports. The policy aims to transform India into a destination for manufacturing and exports.
- Hon'ble Prime Minister in his address on August 6 2021 to the Heads of Indian Missions abroad also made a clarion call to focus on export led policies from India for increasing India's share in global value chains. In particular, he cited the example of mobile manufacturing and exports.
- The Ministry of Commerce and Industry is undertaking a major restructuring exercise to support India's outlook towards exports and Free Trade Agreements (FTAs). The trade policy is exploring half a dozen new bilateral FTAs with UAE, UK, Australia, Canada and EU in 2022. It has also launched a revitalised India-US Trade Policy Forum in November 2021.

In summary, there has been a complete shift in strategy which goes beyond the vision of import substitution to "Make in India for the World". This fresh outlook as noted above is aimed at transforming India's manufacturing prowess by focusing on competitiveness, scale and exports.

Furthermore, continuing on the path of import substitution, India's domestic electronics market is estimated to reach at best US$ 150-180 billion from the current US$65 billion over the next 4-5 years[17]. Thus, exports of US$ 120-140 billion is critical to reach the US$300 billion mark for electronics manufacturing. This in turn is key for the US$5 trillion economy, US$1 trillion digital economy and the US$1 trillion export target envisaged by the Ministry of Electronics and Information Technology (MeitY) and the Ministry of Commerce and Industry respectively.

Moreover, given the shorter timeframe wherein electronics manufacturing has to nearly quadruple from present US$67 billion to US$300 billion by 2025-26, it is imperative that specific product segments with high potential for scale are shortlisted and catered to by way of incentives and policy measures. Such products segments cover mainly mobile phones, Information Technology hardware ('IT hardware'), consumer electronics, wearables and hearables, LED lighting, electronic components in electric vehicles etc. and have been elaborated in the ensuing sections of this document.

14 CEA estimates
15 Ministry of Commerce data (https://tradestat.commerce.gov.in/eidb/default.asp)
16 Ministry of Commerce data (https://tradestat.commerce.gov.in/eidb/default.asp)
17 ICEA estimates

These product segments hold significant potential from demand perspective as well as their feasibility to make in India for the world through adequate policy initiatives. These shall assist India to achieve its target of US$300 billion manufacturing of electronics[18].

Mobile phones

The Production Linked Incentives ('PLI') scheme coupled with the presence of a large global market being over $550 billion[19] in 2021 (and estimated to grow to US$650 billion (approx.) by 2026[19]) provides a viable opportunity to achieve the substantial share of manufacturing targets. Moreover, India's domestic mobile sales are in line with industry estimates and likely to grow faster in the coming few years[20] due to increasing digital lifestyle and COVID related disruptions. Thus, it shall be crucial for the electronics industry to align itself with NPE 2019 and leverage the market opportunity.

Laptops and tablets

Despite the overall growth of the Indian electronics industry, that of the computer hardware segment has remained largely insignificant over the years, with more imports (being an Information Technology Agreement-1 category product) and negligible exports[21]. India is relatively a small market, but significant enough with an estimated market size of US$ 6.8 billion per annum[22]. It is also estimated to be 20-25% higher by 2025, due to Information Technology ('IT') and services growth, Digital India push, and work and study from home on the rise.[23]

Considering that global market is well over US$200 billion+ in 2021[24] and likely to remain stable, tech-enabled manufacturing process and skilled local personnel become crucial for companies looking to invest and move production outside their territories. The reorganization of domestic labour, local talent pool and digitalization of supply chains may enable more export-oriented growth for laptops and tablets manufacturing.

Hearables and Wearables (and related accessories)

The penetration of hearables and wearables has accelerated post COVID creating more dependence on digital products. With the world still struggling through the pandemic and acclimatizing itself to the new normal, the penetration of hearables is estimated to grow. **Hearables market is estimated to account for more than 60% of the overall market share among Wearables by 2024**[25].

The hearables and wearables market is estimated to have overall production of ~US$ 8 billion by 2024, if large scale hearables manufacturing could be aimed to address 10% of the Global market by 2024.[26]

Similarly, the electronics accessories market (such as mouse, keyboard, pencil, pad etc.) is estimated to be significant in global size and is also labour-intensive in nature. India may capitalize on its inherent strengths in labor-intensive segments to undertake manufacturing and Make in India for the World.

18 ICEA estimates
19 https://www.idc.com/getdoc.jsp?containerId=US44916519
20 ICEA estimates
21 Ministry of Commerce data (https://tradestat.commerce.gov.in/eidb/default.asp)
22 Source: IDC tracker
23 ICEA estimates
24 Source: IDC tracker
25 ICEA estimates
26 ICEA estimates on hearables and wearables along with industry inputs collated by ICEA

Consumer and industrial electronics

The combined market for electronics such as washing machines, refrigerators, air conditioners and heaters, smart TVs, audio devices, video and music streaming devices etc. is estimated at around US$ 280 billion[27] in 2021 and is estimated to grow to US$ 368 billion[27] by 2026. This provides a significant opportunity for India to capitalize on its inherent strengths and undertake manufacturing of electronic components and parts to meet the global demand of these products. This shall assist in achieving the US$300 billion manufacturing target and align with NPE 2019 objectives.

Printed Circuit Board Assembly ('PCBA')

PCBA is the core of every electronic device such as mobile phones, tablets, computers, routers, televisions, washing machines, refrigerators, air conditioners etc. The average contribution of PCBA to the Bill of Materials (BoM) is at around 40% and presents a US$600 billion global PCBA market[28]. Given that PCBA is a critical piece of electronics manufacturing and is omnipresent in electronic products, it is crucial for India to gain a significant foothold in the manufacturing of PCBA as well as serving the demand for global markets. The growing scale, *inter alia*, of mobile phones and IT hardware manufacturing shall act as a catalyst in undertaking manufacturing of PCBAs by the industry.

Others (such as auto electronics, LED lighting, telecom equipment and electronic components)

With the gradual development of an electronics manufacturing ecosystem for above product categories and being globally competitive is estimated to open avenues for capturing a market share of other associated product segments such as automotive electronics, LED lighting, telecom equipment. Moreover, backward integration into the ecosystem may also assist India with manufacturing of electronic components and create a standalone market for them to cater to the global demand.

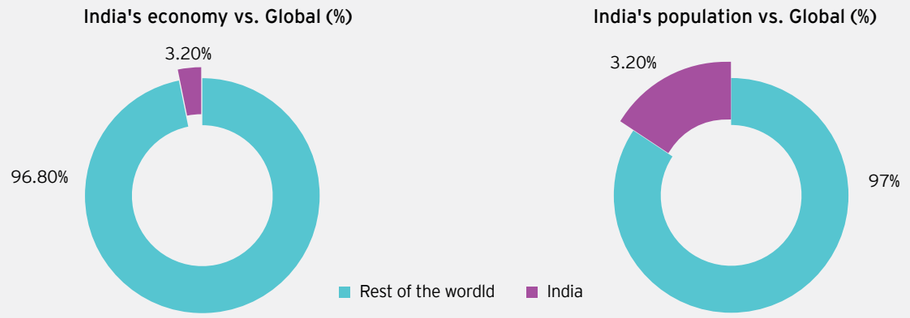
Therefore, these product categories may also help achieve the manufacturing objectives and contribute towards the US$300 billion target by 2025-26.

27 "Global household appliances market - Opportunity Analysis and Industry Forecast, 2018-2025," Allied Market Research report, Jan 2019, via EMIS
28 ICEA estimates

Moreover, though India's market size does present a sizable opportunity to the electronics manufacturing industry, it is relatively smaller and may not be incentivizing enough vis-à-vis the global market opportunity especially given the economies of scale needed in electronics manufacturing.

While the global economy is estimated to exceed US$ 100 trillion by 2022, India's economy is estimated to be at US$3.2 trillion[29]; thus, merely accounting for ~3% of the global economy while having ~18% of global population[30].

Exhibit 3: India's share of world economy vis-à-vis share of population



Therefore, to achieve economies of scale, being globally competitive and to viably manufacture and market US$300 billion worth of electronic products vis-à-vis domestic market size, export-oriented focus is critical (detailed in Exhibit 4 and 5 of this document). This is in line with the specific emphasis by the Hon'ble Prime Minister on exports and Ministry of Commerce & Industry laid due emphasis on promoting bilateral free trade agreements. This shall also assist with achieving economic growth, job creation and increased foreign exchange reserves on account of exports.

India's aim of being a US$ 5 trillion economy by 2025-26 includes a US$1 trillion digital economy aim during the same period[31]. This is estimated to drive the demand for electronic products in India which may stand at approx. US$180 billion by 2025-26[32]. If India is able to achieve the manufacturing target of US$300 billion for electronics, the domestic market demand may be met in full by such manufacturing. This necessitates that US$120 billion worth of electronic products would be required to be exported to global market.

As stated in the above paragraphs, being globally competitive with adequate scale would be the key to achieve the aforesaid exports target. Resultantly, it is imperative to remove the cost disabilities faced by electronics manufacturing ecosystem in India and bring in adequate policy measures coupled with fiscal incentives to meet the objectives of NPE 2019.

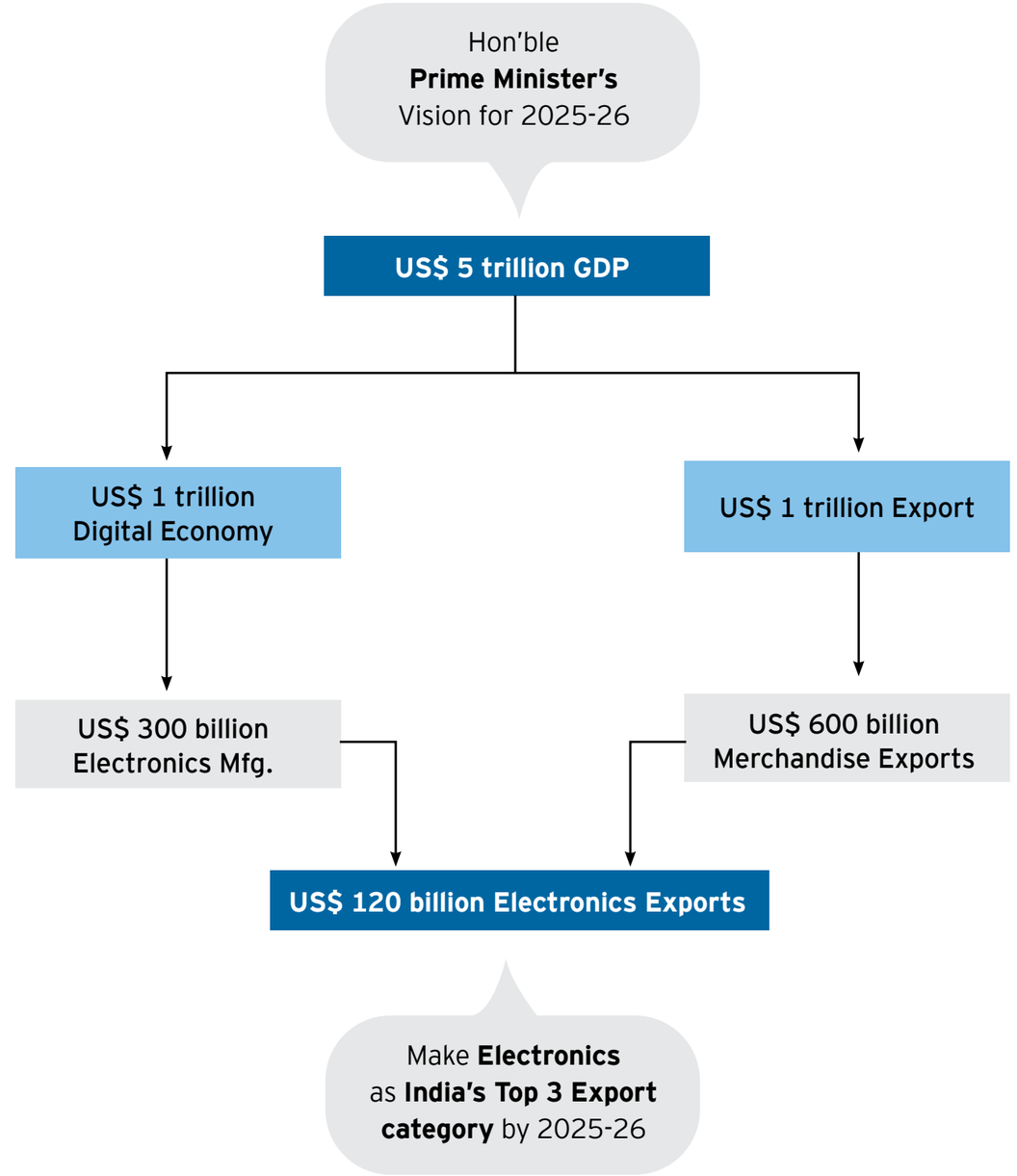
29 https://www.business-standard.com/article/international/world-economy-to-top-100-trillion-in-2022-for-first-time-report 121122700054_1.html CEBR World Economic League Table 2022 https://cebr.com/wp-content/uploads/2021/12/WELT-2022.pdf

30 https://data.worldbank.org/indicator/SP.POP.TOTL?locations=IN

31 https://economictimes.indiatimes.com/news/india/india-can-become-1-trillion-digital-economy-in-5-years-mos-for-it/articleshow/86828210.cms

32 ICEA estimates

Exhibit 4: India's vision for electronics manufacturing and exports by 2025-26



02

Key product segments

For the purpose of this vision document, we have identified certain 'key product segments' which are the focus area of manufacturing as they represent more than 80% of the overall electronics industry.[33]

Product segment	Size of domestic manufacturing 2020-21 (US$ billion)
Mobile phones	30
IT Hardware*	3
Consumer electronics (TV and audio)	9.5
Strategic electronics	4
Industrial electronics	10.5
Wearables and hearables	-
PCBA	0.5
Auto electronics	6
LED Lighting	2.2
Telecom equipment	-
Electronic components	9
Total	**74.7**

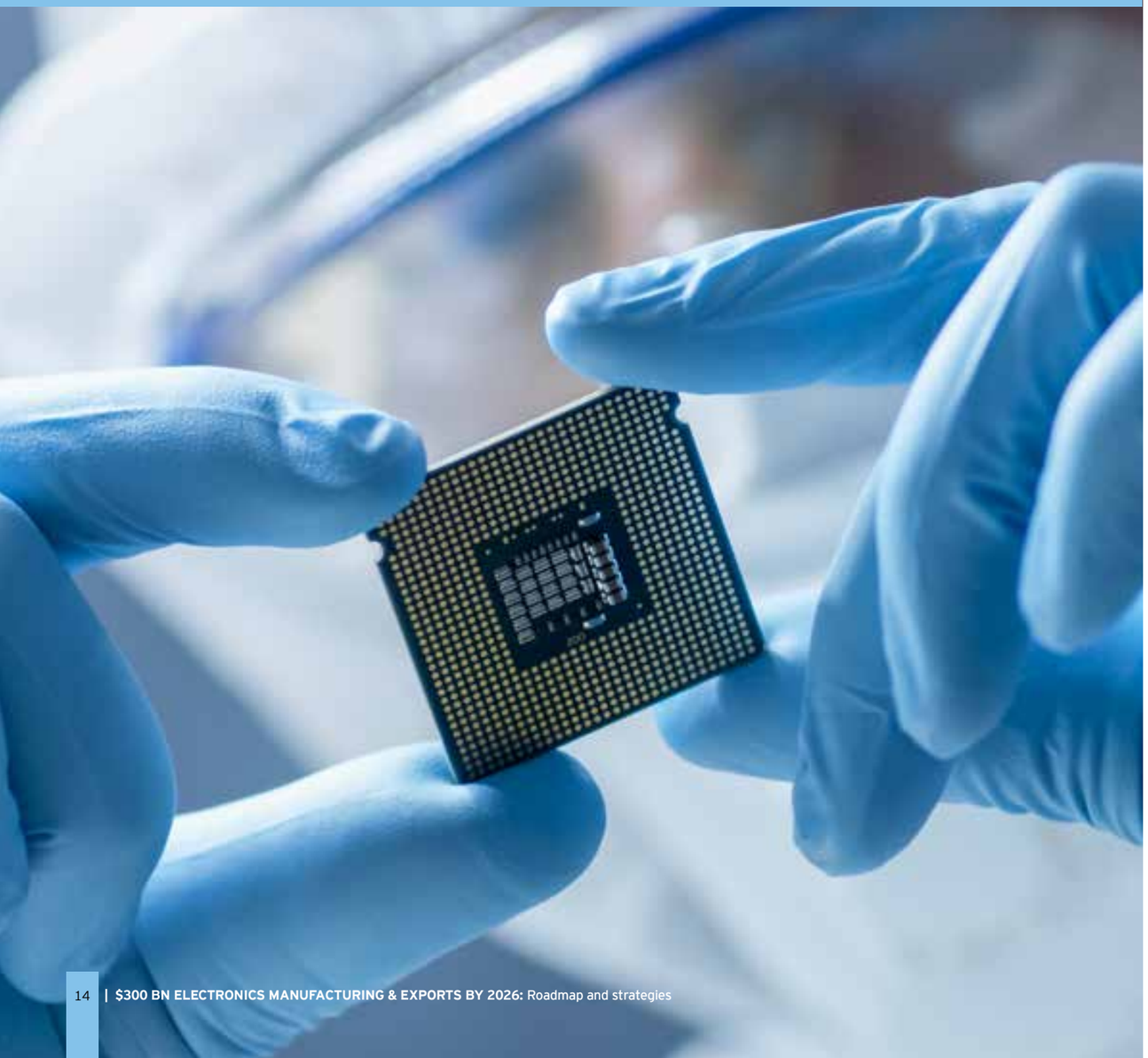
*includes laptops, tablets and desktops

The potential demand and growth prospects of above product segments coupled with the existence of a manufacturing or mere assembly base in few segments and policy push may provide the required impetus to help achieve the target manufacturing of US$300 billion worth of electronic products by 2025-26.

33 ICEA estimates

03

Vision for electronics industry – Short-term and long-term

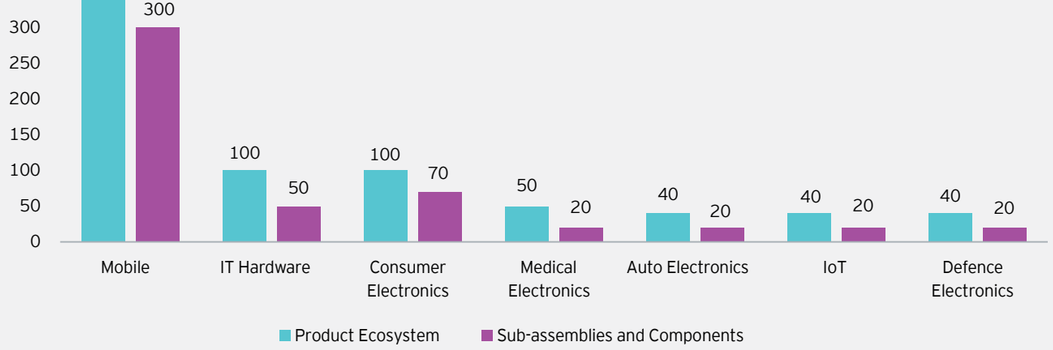


Technology is the key driver of all industries and influences all spheres of our lives. Accordingly, India continues to strive to emerge as a leader in the segment by capturing a sizable pie of the electronics manufacturing ecosystem that propels the technology sector. For India to be the global electronics manufacturing hub of the future, there needs to be a clear long-term vision which must be achieved by means of the short-term goals. In order to become a US$ 5 trillion economy by 2025-26, (or 2027-28 considering allowance for the two year loss on account of the pandemic), India shall strive to be a US$1 trillion digital economy given its omnipresence across all spectrums of life. Moreover, a special emphasis shall be laid on exports to achieve this objective.

The long-term vision may be covered primarily under four broad categories:

- **A** Make in India for the world
- **B** Make India the No. 1 electronics manufacturer and exporter.
- **C** Become a significant player in the global value chain.
- **D** Build ecosystem comprising of primarily mobile phones, IT hardware, and consumer electronics of US$ 1 trillion+ in the next 10 years.

Exhibit 5: Target electronics ecosystem of US$ 1 trillion+ in the next 10 years[34]



The long-term vision shall be followed-up with credible short-term goals (1-4 years) aimed at realizing the vision to its fullest. These goals shall be:

- **A** Build competitiveness and scale
- **B** Shift and develop sub-assemblies and components ecosystem
- **C** Build design ecosystem
- **D** Nurture Indian champions
- **E** Steadily remove disabilities in India

34 ICEA estimates.

Make in India for the world

- The Global Value Chain ('GVC') spans across the globe and various countries control/specialize in certain specific elements of the ecosystem. While development of complete ecosystem may take time in India, it to start with, shall strive to capture a significant share of the assembling ecosystem across entire electronics manufacturing industry.
- Abundance of labor at lower costs vis-à-vis China and Vietnam may provide India an advantage in any labor-intensive process and thus, assembly operations may be naturally synergistic for the country.
- The aim shall be to attract global lead firms to undertake assembly operations in India for almost anything that requires assembling in the electronics industry.
- The Union Budget economic survey 2019-20 has duly highlighted the importance of assembling in India for the world. The relevant extract from the survey is as follows[35]:

> "By importing components and assembling them in China for the world, China created jobs at an unprecedented scale. Similarly, by integrating "Assemble in India for the world" into Make in India, India can raise its export market share to about 3.5 per cent by 2025 and 6 per cent by 2030, which is highly feasible. In the process, India would create about 4 crore well-paid jobs by 2025 and about 8 crore by 2030. The incremental value added in the economy from the target level of exports of network products, which is expected to equal $248 billion in 2025, would make up about one-quarter of the increase required for making India a $5 trillion economy by 2025"

- It is also noteworthy that this would require a paradigm shift in the policy objectives – move away from being focused only on import substitution, impose higher tariffs to discourage imports and measures such as import authorization. Instead, the focus shall be on enabling unhindered import of goods for assembly operations and enabling quicker lead time to gain a significant foothold in the assembling value chain.
- The past trend of frequent and unpredictable increases in tariff is another dampener for the investment climate including by making the products uncompetitive and impacts the investment plans of GVCs. Therefore, the need of the hour is to provide stability in tariffs coupled with a predictable downward trend to enable investment decisions by GVCs into India.
- The motto shall be to assemble anything and everything in India for the world and become a dominant player in the domain to gain foothold of the GVC.
- This shall have a positive impact on India being able to handle large volumes of electronics assembly, higher volume turnaround and resultantly, more assembly operations to gain further scale and competitiveness.
- At the same time, it is also to be noted that during the COVID-19 pandemic, China has yet again proven to be a reliable global supply chain partner coupled with the United States' decision not to impose new tariffs as part of the trade policy. It is estimated that China has been able to maintain a better grip on retaining investments than two years ago (when tariffs were imposed). The current environment of growth in China appears to be positive[36]. In the second wave during April-May 2021, by going ahead with routine manufacturing activities, India's reputation as a resilient manufacturing destination was substantially strengthened. While China reacted by complete shutdowns even with small number of cases, India kept going. Other manufacturing destinations like Vietnam, Malaysia, Thailand etc. also reacted similarly as China.

35 echap05_vol1.pdf (indiabudget.gov.in), pg. 101-102.
36 Eurasia survey on companies operating in China

Short-term goals (1-4 years)

The primary short-term strategy must revolve around incentivization of scale in the next 1,000 days (2025-26). Increase in scale may set the stage for India to become a major value addition player subsequently. After the initial 1,000 days, incentivization of value addition may be prioritized.

For the purpose of building scale, it is imperative to increase exports that may be achieved by virtue of the following set of small-term targets:

Build competitiveness and scale

- The creation of a robust domestic manufacturing ecosystem is likely to be a result of export-oriented focus of the policy and bringing in the much-needed scale required to attract global lead firms.
- Scale can be achieved only if we are able to cater to global market.
- Economies of scale is a must to enjoy global competitiveness and gain a sizable pie of the market share by making in India for the world.
- Therefore, steps to promote scale shall be of paramount priority in next 3 years.
- Assembling in India may act as a catalyst in this direction

Shift and develop sub-assemblies and components ecosystem

- Building a sub-assemblies and components ecosystem is at the heart of electronics manufacturing and is a naturally extended outcome towards assembling finished products.
- India still needs to develop its capability in manufacturing parts and components that meet global quality standards.
- An electronic device contains a high density of components and the manufacturing of these components holds immense job and value addition potential.
- Components such as battery packs, chargers, USB cables, connectors, inductive coils, magnetics, flexible PCBAs, charger enclosures active and passive components etc. can be manufactured in India within existing capabilities with modest policy support.

Build design ecosystem

- To become an integral part of the global supply chain, it is highly necessary to be a leader in the design ecosystem and move forward in the innovator category.
- -India is well placed to capitalize on its strength in the domain of design capabilities and focus on R&D. However, design ecosystem is usually feasible with appropriate manufacturing scale to aid its growth.
- Meaningful gains in the value chain can be achieved through creation of a robust design ecosystem in India.
- Currently, most of the design aspect and high-end technology innovation is limited to countries such as the USA, South Korea, Japan and Taiwan. It is high time that we promote the creation of design ecosystem in India and foster innovation.

Nurture Indian champions

- To succeed at the global stage in the long-term and ensure the country remains at the forefront of the electronics industry, it is necessary that due focus is accorded on creation of domestic champions.
- In order to do the same, the initial success in mobile phone sector with Indian champions such as Lava, Dixon, and Micromax may be replicated across the electronics industry.
- Financial incentives provided under the respective PLI schemes may act as a major booster for increasing the presence and manufacturing activities in India.
- Apart from the above, adequate policy support should be provided such as assistance in design capabilities, preference in government orders, concessional and priority finance, rebates for skill acquisition etc.

Steadily remove the disabilities in India

- There are a multitude of facts that impede creation of a sizable manufacturing ecosystem in India.
- These disabilities impact the competitiveness of manufacturing electronics in India vis-à-vis China and Vietnam in the global market.
- Removal of these difficulties or providing equivalent incentives must be the primary objective for the government.

Policy predictability

- The policy environment shall be conducive for promoting investments in the electronics manufacturing sector.
- Predictable and non-contradictory policies shall go a long way in boosting investor confidence and ensuring that prominent industry players commit significant investment in the sectors.
- These may be in the form of clear guidelines, longer duration of incentives, consistent tariffs etc.

Exhibit 6: Roadmap to manufacture US$300 billion electronic products[37]

Product segment	2020-21 (US$ billion)	2025-26 (US$ billion)
Mobile Phones	30	126
IT Hardware (laptops, tablets)	3	25
Consumer electronics (TV and audio)	9.5	23
Strategic electronics	4	12
Industrial electronics	10.5	25
Wearables and hearables	-	8
PCBA	0.5	12
Auto electronics	6	23
LED Lighting	2.2	16
Telecom equipment	-	12
Electronic components	9	18
Total	**74.7**	**300**

Parallelly, the exports of electronic products are estimated to reach approx. US$120 billion by 2025-26, which is almost eleven times the current exports of the country.[38]

37, 38 ICEA estimates

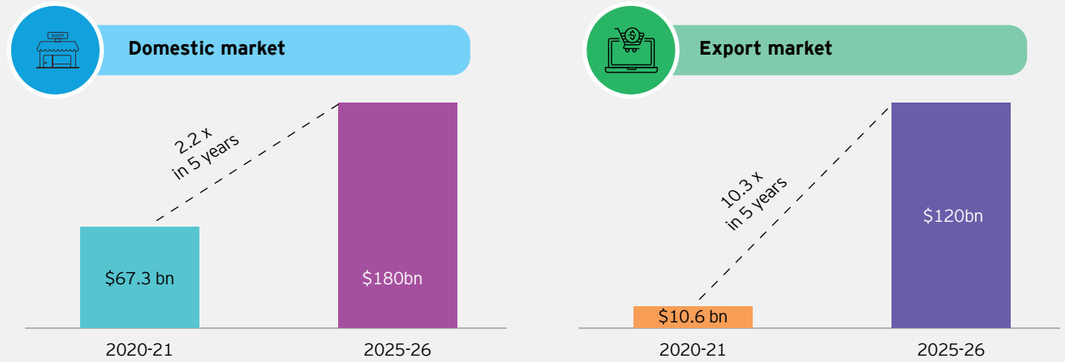
Exhibit 7: Electronics industry – Estimated exports trend over next five years[39]

Product segment	2020-21 (US$ billion)	2025-26 (US$ billion)
Mobile Phone	3.1	52 - 58
IT Hardware	0.2	12 - 17
Consumer electronics (TV and audio)	-	2 - 3
Wearables and hearables	-	2 - 3
PCBA	0.3	9 - 12
Electric Vehicles	-	-
LED Lighting	-	9 - 12
Other miscellaneous products	-	-
- Industrial Electronics & Components	6.3	14 - 17
- TV	-	-
- Sub-Assemblies	0.2	2 - 3
- Electronic Fans	-	1 - 2
- AC Components (Controller, BLDC Motor, etc.)	-	1 - 2
Total	**10.1**	**105 - 130**

Exhibit 8: Components & Modules Breakup as part of US$300 bn market size by 2025-26[40]

Commodity	Description	Type	Export potential	Global Spend	Production potential in India
Enclosures	Phone Enclosure Housing	Assembly	Medium	US$210.5 bn	US$25 bn (approximately 12% of the global spend)
Adapters	Power Adapters for Charging	Assembly	Very high		
Cables	USB Charging Cable	Assembly	Very high		
Flexes	Flex Circuit PCBA	Assembly	Small		
Battery packs	Battery pack	Assembly	Small		
Inductive coil	Inductive Charging Coil Modules	Assembly	Very high		
Magnetics	Transformer & CMC modules for Power Adapter bill of materials & independent export	Assembly	Medium		

Exhibit 9: Scale required for manufacturing for domestic and export markets to reach US$300bn target[41]

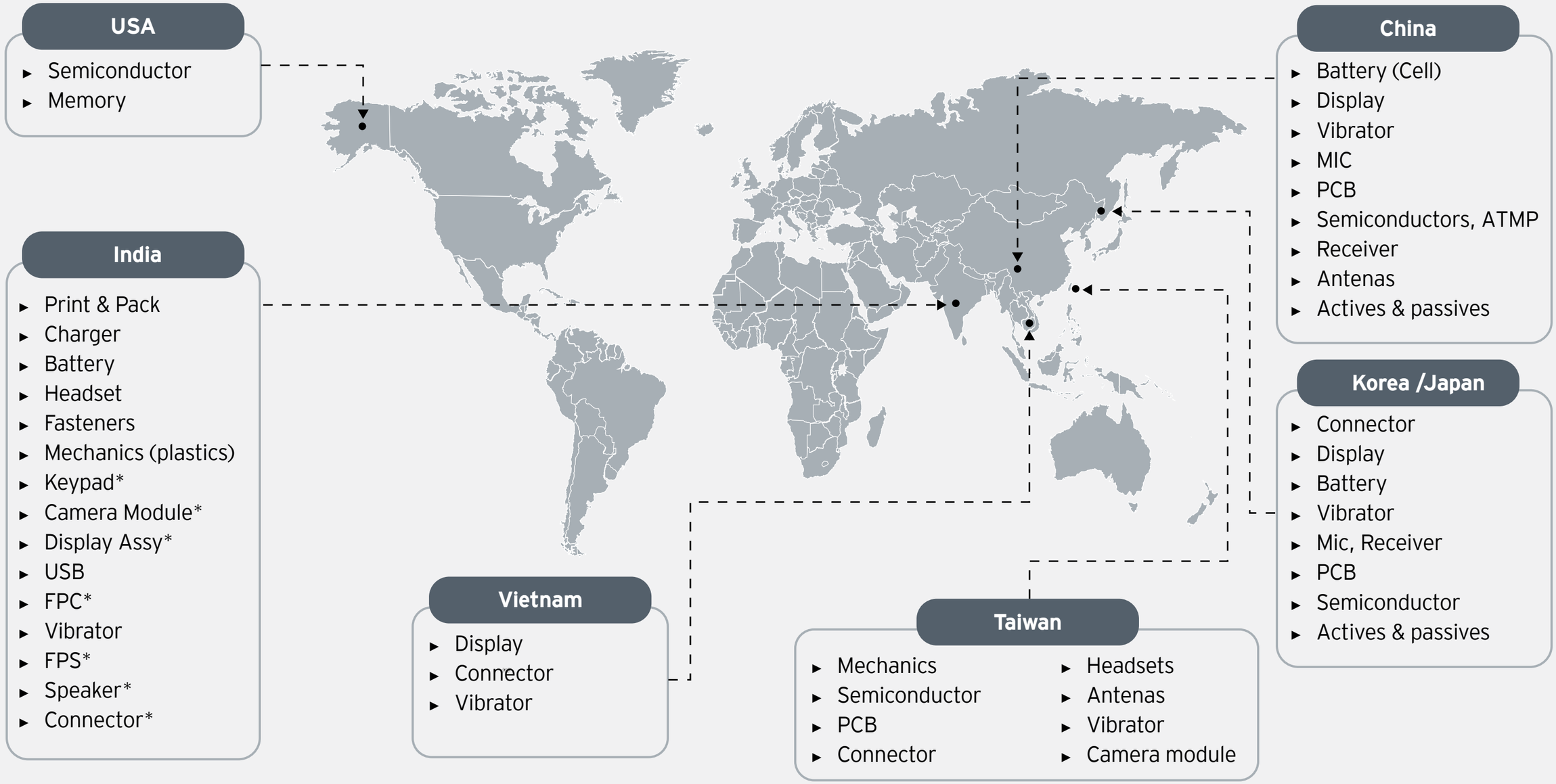


Source: ICEA estimates

39, 40, 41 ICEA estimates

Exhibit 10: Value chain analysis as to how various elements like design, manufacturing and others are spread across the world

Current state of play reg. Supply Chain eco-system of Smart phone Manufacturing



* Under development

04

Increasing aggregate domestic value addition in electronics exports

Hitherto, the policy emphasis for various incentive schemes has been to create ecosystem, build scale, achieve exports and increase value addition in the long run. The said policy objectives have been met with mixed success primarily on account of lack of scale and the absence of a developed ecosystem enabling the same. It is also imperative to analyse the practices adopted by our Asian peers, viz., China and Vietnam wherein, the focus has been on capturing market share as against the sole objective of increasing value addition.

It is important to note that given adequate scale, even if the domestic value addition ratio ('DVAR') is lower but the overall volume being high, the aggregate amount of value addition being made by the domestic manufacturing ecosystem would be higher and symbiotic of the policy goals to achieve a higher share of the global value chain ('GVC').

Therefore, due emphasis shall be **on the aggregate value addition as against the DVAR** on account of below factors:

A. Scale coupled with exports shall assist in DVAR in long-run

- Policies aimed at increasing aggregate value addition is estimated to have a positive impact on the domestic ecosystem due to economies of scale and related efficiencies.
- Higher scale of production is expected to lead to reduction of cost and increase competitiveness of India vis-à-vis other major countries forming part of GVCs.
- Resultantly, on account of the competitiveness higher volume exports may also be achieved.
- While an increase in aggregate domestic value addition will eventually lead to an increased domestic value addition ratio, the opposite will not be true.

B. Lessons from China and Vietnam

- As per ICEA analysis, both China and Vietnam have had enormous impact due to the emphasis on aggregate domestic value as against solely focusing on DVAR.
- Subsequently, an increased volume of export has eventually led to an increased DVAR through the course of time. Therefore, the impact of increased aggregate value addition is estimated to positively impact the DVAR with time.
- For reference, even after achieving the vast economies of scale and attaining a leadership position in electronics manufacturing, China's DVAR has been hovering in the range of 25% to 40% across different product categories despite manufacturing US$1 trillion worth electronic products[42]. Thus, China's imports continue to be significant despite such scale and competitiveness. China's electronic exports are estimated to the tune of US$ 700 billion[43] while its imports are close to US$ 500 billion[44]. Therefore, increased value addition may still require imports on a large scale. It may be imperative to note that no country in the world has ever achieved zero imports through value addition. This shall not be pursued as it may not be possible for a country to manufacture all products on its own.

Way forward

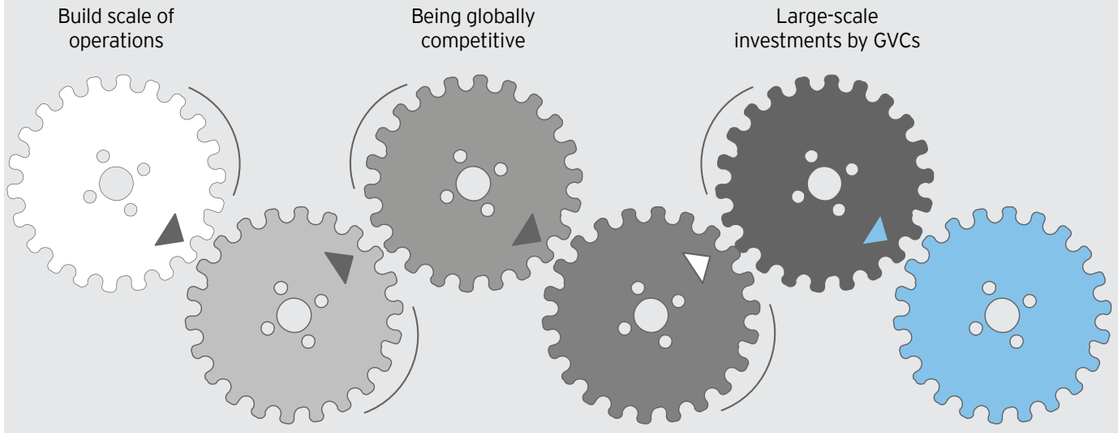
- To realise the vision of attaining a significant global market share, the policy impetus would require a paradigm shift from being heavily focused on increasing DVAR to attaining higher aggregate value addition in absolute terms. To summarise, the economies of scale may assist in achieving the vision and objectives as against achieving a specific DVAR devoid of any scale. DVAR has to be linked to a level of output. Therefore, achieving scale / output is imperative as DVA cannot be aimed in isolation.
- In case India aims at increasing domestic value addition through various tariff and non-tariff restrictions on imports, it may prove to be counterproductive. This may inflate the costs of production and make the products less competitive in the global market. Additionally, frequent tariff changes brings unpredictability resulting in shying away of GVCs to / from India.

As per ICEA analysis of the major players in the GVC of the electronics industry, it has been observed that the DVAR initially dips and consequently starts going up moderately as the ecosystem is developed in a country.

India shall thus aim at increasing aggregate domestic value addition through scale rather than focusing solely on increasing DVAR.

42 ICEA estimates
43 ICEA estimates
44 ICEA estimates

Increasing **Domestic Value Addition**



Two concepts critically important

1. Aggregate Domestic Value Addition (DVA)
2. Domestic Value Addition Ratio (DVAR)

- If DVAR is low, DVA can still be high if scale of exports is large. This strategy has been followed by China and Vietnam.
- India's initial production will have to rely more on imports than domestic input.
- Policies stipulating high threshold for DVAR:
  - Lock India's technological development
  - Reduce the potential for scale and exports in the initial phase

05

Indian Champions will play a key role

The electronics manufacturing ecosystem is reflected by presence of both lead firms and global value chains (GVCs) spread (tier 2 and 3) across the world. Various countries specialise in the parts and components across the spectrum of electronics. As India strives to capture a meaningful market share of the electronics manufacturing ecosystem, it is critical to follow the below objectives:

1. **Attracting global lead firms to manufacture electronics in India**
2. **Encourage shifting / relocation of tier 2 and 3 companies to help expand the base and create eco-system.**
3. **Developing local manufacturing firms that can sustainably retain the manufacturing ecosystem and simultaneously, capturing a pie of the global market share.**

In order to attract any global investor, the cost advantages that a country offers are of paramount importance. However, as the ecosystem develops and the cost advantage starts to wane, the global lead firms may scout for an alternate attractive manufacturing destination to retain the competitive advantage. Moreover, the supply chains are spread across the world with countries or regions specializing in a certain aspect of the product ecosystem. Therefore, no country in the world manufactures all products or components and instead, works towards integrating itself in the supply chain by manufacturing products/components wherein it possesses competitive advantage.

Thus, imports are highly likely to remain an integral part of a manufacturing process and instead, are crucial to achieve scale of manufacturing/assembly operations in India. Even if there is domestic value addition, imports are bound to continue considering the globalized nature of supply chains.

Therefore, while the role of global lead firms in establishing a manufacturing ecosystem cannot be disregarded, the sustainability of continued domestic manufacturing may require creation of local companies that are well entrenched in the country in the long run.

Such companies may be termed as 'Indian Champions'. These Champions (be it in any sector) may create a multitude of advantages for the home country - augmenting GDP, employment, and foreign exchange - and also cement the home country's position in global business and reduces reliance on imports of few inputs / components to a certain extent, paving the way for sustainable growth. Large companies, when they operate in a competitive environment, play a significant part in terms of employment and wealth creation. This may be achieved only if the country's productivity and efficiency is the best in the world – and this presents an unprecedented opportunity for India to make itself highly competitive in manufacturing and design for the whole world.

It is at this juncture that the role of Indian champions is estimated to become significant to catapult India to be a dominant player in the global value chain. One may take cues from global examples such as China, Japan, Korea, Taiwan and USA which have all nurtured their national champions into global champions. On an average, 38% of a country's economy is dependent on its national champions – significantly higher than India's 13%[45].

Thus, Indian Champions shall be nurtured to not only take on the global market players but also to create a sustainable Indian manufacturing ecosystem. The success of our Asian peers is a proof that creating Indian champions is the key to India achieving economic self-reliance and global success.

However, the industry in India presently faces a multitude of challenge that pose a hindrance to achieving its vision of becoming a dominant global player in the electronics manufacturing industry. These have been outlined in the ensuing chapter

45 ICEA estimates

06

Challenges faced by the industry

US$ 300 billion by 2026

While the policy initiatives of the government have had a positive impact on the manufacturing ecosystem, the disabilities have persisted by and large. There are various challenges being faced by the industry across qualitative (non-tariff, infrastructure related) and quantitative (tariff, Free Trade Agreements etc.) aspects and need to be addressed in toto to ensure that manufacturing in India is resilient, globally competitive and able to undertake operations at massive scale.

6.1 Cost disabilities vis-à-vis China and Vietnam

There are a multitude of factors that impede creation of a sizable manufacturing ecosystem in India. These disabilities impact the competitiveness of manufacturing electronics in India vis-à-vis China and Vietnam.

As per a report published by ICEA , Exhibit 11 summarizes the disabilities in India vs. China and Vietnam for manufacturing of mobile phones. Further, such disabilities are common across electronic products accommodating for minor variations, if any.

However, the aforesaid Exhibit relates to the analysis undertaken in 2018. The disability gap is estimated to have narrowed down since China is having challenges of its own in certain areas such as power. Additionally, there have been marginal improvements on the India side. A fresh deep dive is being initiated by ICEA to update the disability stack.

As we strive for higher value addition, the disability presently encapsulated in the table below is estimated to further increase[46] (and may negatively impact the ambition to increase domestic value addition) since the sub-assemblies and components will face the same cost disabilities which an investor while manufacturing in India.

Exhibit 11: Factors that lead to cost reduction in Electronics manufacturing[47]

S. No.	Factor resulting in cost-reduction	India	Vietnam	China
1	Corporate income tax exemption/reductions	0.73 - 0.95%	1.5 - 2%	2%
2	Subsidy for machinery and equipment	Nil	0.2%	3%
2A	State subsidies in India for capital investments	0.6 - 1.2%	NA	NA
3	Cost of power	0%	1%	1%
4	Interest subvention on working capital	0%	1.5 - 2%	3 - 3.5%
5	R&D subsidy	0.15%	0.4 - 1%	2%
6	Incentive for supporting industry	0%	0.5 - 1%	0%
7	Manufacturing incentives	-	0%	1 - 2%
8	Exemption/reduction of land rental	0%	0.5%	0.6%
9	Industrial land development support	0.4%	0.5%	0.6%
10	Building (or plug and play)	Negligible	0.3%	1%
11	Labor subsidy	Negligible	0.5%	2%
12	Logistics	0%	0.5%	1%
13	Factors aecting "Ease of doing business"	-	1.5 - 2.5%	2 - 3%
14	Duty free imports for creating fixed assets, and of inputs not available domestically	0%	0.5%	-
Total		**1.88 - 2.7%**	**9.4% - 12.5%**	**19.2% - 21.7%**
Cost disability differential for India vs. Vietnam and China		**-**	**7.5% - 9.8%**	**17.3% - 19.0%**

46 ICEA estimates

47 Report titled "Making India a global hub for handset manufacturing" by ICEA

6.2 Lack of Component Ecosystem

- Electronics components form the fundamental backbone of manufacturing ecosystem. In the absence of a full-fledged component ecosystem in India, these components are required to be imported that results in increased costs and lead time for the manufacturers.
- Absence of electronic component ecosystem may be a major deterrent to bolstering electronics manufacturing in India.[48]
- Moreover, India lacks in manufacturing of even components that are labour intensive and are feasible to manufacture in India given the availability of cheap and skilled manpower. An active policy support to promote local manufacturing including through domestic players appears to be missing at present.

6.3 Ease of Doing Business

- Industrial land development support – In the policy initiatives and schemes of the government, the cost of land is not factored in. While Department for Promotion of Industry and Internal Trade (DPIIT) has instituted measures such as launch of e-madhyam portal to ease the identification and acquisition process, the cumbersome process of land acquisition overall acts as a deterrent for quick setting up of a manufacturing unit.
- Moreover, while some states such as Karnataka, Telangana, Tami Nadu etc. have made significant progress in providing land banks and related information to potential investors; it calls for a uniform and speedy implementation of such initiatives across the country.
- Plug and play infrastructure – Competing nations such as China and Vietnam readily provide the infrastructure support in the form of buildings and related permits to manufacturers, i.e., the regulatory compliances are undertaken by the government authorities and readymade facilities (including dormitories on the site) are handed over to the manufacturers. Lack of such plug and play model hampers the attractiveness of India and may prejudice manufacturers' decision to set up units in India.
- Compliance requirements – The compliance requirements and scrutiny from the authorities coupled with the time-consuming process impact the business environment and acts as a dampener to attracting the investments in India.
- Lack of Free Trade Agreements ('FTAs') with developed economies – Compared to its Asian peers, India does not have many FTAs in place and instead, loses out on lower duty benefits on exports to major economies such as United States, European Union, United Kingdom, Middle East region, Australia, Japan etc.

6.4 Punitive duty structures and tax levies

- India is a signatory to various FTAs which enables global manufacturers to manufacture at scale in such FTA partner countries and sell the goods in India.
- However, it is also important to note that placing sole reliance on the policy of import substitution through higher tariffs may not be desirable. Brazil is a case in point where high tax levies had forced manufacturers like Sony and Xiaomi to shut their units in Brazil.[49]
- The lead time and hassles in customs clearance creates another non-tariff barrier that impacts the turnaround time in the industry and creates inefficiencies in the system
- Corporate tax – In comparison to China and Vietnam, India provides for lower income tax exemptions and reductions to electronics manufacturers.[50] No income tax holidays are being provided in India unlike those provided in Vietnam, making the latter the preferred choice for manufacturing.[51] Vietnam also offers very long term predictability of 10-30 years of Income Tax holiday/concessional rates tailor-made for global GVCs.

48 https://www.meity.gov.in/esdm/SPECS.
49 ICEA report titled "Making India the global manufacturing powerhouse for mobile handsets and components"
50 ICEA
51 ICEA

6.5 Restrictive PLI Conditions

- Although the financial incentives by the PLI schemes have been a step in the right direction, the eligibility criteria and sales target-based incentives may be deterrent to Small and Medium Enterprises or any new entrant.
- Absence of any fallback mechanism – The present schemes are premised on a hit or miss basis, wherein incentives may be denied to a manufacturer on failure to meet the targets even by a small margin. Therefore, the conditions in the PLI scheme may not achieve the desired results due to the stringent limits and criteria to be eligible for the scheme
- PLI scheme do not account for flexibility in terms of higher tenure (for sectors with nascent manufacturing ecosystem such as IT hardware), increased incentives to offset tariff hikes (including in near future) as well as a mechanism to ensure timely payment of PLI incentives to applicants.

6.6 Regulatory uncertainty

- The financial incentives under various policies issued by the Indian Government have been provided for a period of 5 years only.
- Owing to the COVID-19 related disruptions and general economic environment, absence of continued incentives after the initial scheme period may impact the entry of probable manufacturers and investors in India.

6.7 High import tariff on electronic components

- In the absence of an existing component ecosystem in India that ensures manufacture of quality inputs that are to be subsequently used in the manufacture of high quality finished products, the manufacturers have no alternative but to import the requisite inputs.
- As per ICEA analysis, the present customs tariff regime in India is prejudicial to the domestic electronics manufacturers vis-à-vis competing economies such as China, Vietnam, Thailand and Mexico. In fact, increased tariffs may ultimately lead to inflated costs of the products and thereby reducing their competitiveness in the global markets. Additionally, a less competitive product is estimated to eventually defer investments from the electronics sector.
- When compared to its Asian peers, India imposes the highest tariffs on inputs of electronic products and such tariffs continue to be subject to amendments frequently[52]. These unpredictable tariff measures may significantly impact the positive impact of PLI policies.

Exhibit 12: Comparison of percentage share of electronics Most Favoured Nation ('MFN') tariffs (as a % of total tariff lines)[53]

MFN tariffs	India	China	Mexico	Thailand	Vietnam
0%	23.3%	41.7%	60.8%	43.3%	49.2%
Above 5% and up to 5%	1.7%	17.5%	19.2%	7.5%	10.0%
Above 5% and below 10%	6.7%	25.8%	3.3%	2.5%	0.8%
10%	37.5%	14.2%	4.2%	44.2%	7.5%
Above 10% and up to 15%	15.0%	0.8%	11.7%	0.0%	19.2%
Above 15% and up to 20%	12.5%	None	0.8%	1.7%	6.7%
Above 20% and up to 25%	3.3%	None	None	None	5.8%
Above 25%	None	None	None	None	0.8%
Specific Tariff	None	None	None	0.8%	None

In view of the challenges being faced by the industry, India should look towards removing the existing roadblocks in addition to the fiscal incentive policies for attracting electronics manufacturers to set up manufacturing or assembly facilities in India.

52 ICEA
53 ICEA analysis of tariff schedules of individual countries

07

Policy recommendations

In line with the long-term vision of making India the number one manufacturer and exporter of electronic products, it is quintessential to aim for economies of scale, ensure all challenges are addressed and a conducive policy framework is in place for prolonged dominance in the sector. The policy recommendations are aimed at bolstering India's capability and ensuring global competitiveness in the electronics manufacturing industry.

Easing the cost of doing business

Build scale through incentives and removal of cost disabilities

For achieving the target of US$ 300 billion in electronics manufacturing by 2025-26 primary focus must be building of scale. In order for India to fulfill these objectives, following major recommendations are required to be implemented:

Winner takes all

- Capitalize on our strength, suitably incentivize the industry and remove bottlenecks to gain significant footholds in electronics manufacturing.
- Nurture and promote domestic champions that are capable to compete at a global level, efforts must be aimed at creating a conducive environment for such local champions to emerge.

Economies of Scale and Global Competitiveness

- India needs to address cost disabilities and promote exports from the country.
- Focus should be on making in India for the world, become an integral part of the global supply chain and capture 15% share of the global market by 2025-26 and 40% by 2031-32..
- The need of the hour is to facilitate an infrastructure that is conducive to cater to large-scale manufacturing of electronics. This includes labor policies that allow for business friendly, flexible and large-scale workforce to operate; low cost of capital, duty concessions, prioritized logistics and adequate infrastructural support.

Providing incentives and removing cost disabilities

- The tangible push in enhancing manufacturing capabilities has not yet come in India due to the ability of our Asian peers (China and Vietnam) to provide wide-ranging fiscal and non-fiscal incentives.
- It is estimated that India suffers from various disabilities like high cost of power, tax, and ease of doing business, which renders it almost 10% and 20% less competitive than Vietnam and China, respectively. India must address these issues in the long run.
- The development of core industries like display, semiconductors, advanced chemistry cells etc. which are expected to take shape with the current slew of policies by 2024-25 are likely to give core cost advantages. We shall be very cautious that these industry players do not fall prey to a protectionist import substitution mindset and thus, policymakers shall be exceptionally watchful of it.
- The government should endeavor to offset these disabilities by aggressively providing incentives such as Production Linked Incentives ('PLI') that are WTO-compliant, easy to implement and help India take off from the export runway.

A dedicated effort on Ease of Doing Business ('EoDB') under the aegis of MeitY

Electronics is a strategic sector and holds immense potential to position India as a key player in the global supply chain. It is therefore important that the EoDB issues which industry faces on a regular basis are resolved by the Government urgently.
These issues relate to different ministries like;

1. Tariffs - Ministry of Finance
2. Duplication of compliances on testing and certifications - Ministry of Electronics and Information Technology and Ministry of Communications

3. Onerous marking and labelling requirements under the legal metrology rules - Ministry of Consumer Affairs
4. Compliance obligations under Plastics and E-waste rules - Ministry of Environment, Forest and Climate Change

The industry is working towards preparing a comprehensive EoDB report capturing ministry wise EoDB issues along with specific recommendations. These will be submitted to the nodal ministry - Ministry of Electronics & Information Technology.

A dedicated effort on EoDB led by MeitY for sustainable electronics manufacturing and exports, is the need of the hour.

Other recommended measures towards Ease of Doing Business include:

- Policy for building large-scale labour-intensive factories and hiring of 40,000 – 1,00,000 workers
- Faster clearance time on ports
- Lower the cost of logistics for domestic as well as global operations
- Availability of uninterrupted electricity at competitive rates (at under INR 5 per unit)
- Financing at nominal rate
- Conducive labour environment for large-scale operations

A concerted effort is needed to address these concerns and further increase the Ease of Doing Business in India.

Shifting of ecosystem

While the major recommendations should be implemented during the next few years, India warrants for swift changes in respect of existing policies that must be undertaken immediately to provide a nascent boost to electronics manufacturing. The following short-term policy recommendations must be implemented within the next 1,000 days:

Stability in import tariffs (for existing ecosystem)

- Stable tariff policy should be brought in place vide which inputs are not taxed. This may lead to a stable investment regime and may attract relocation of global manufacturing players.
- Changes to import tariff rates (especially increase in tariffs) should be avoided throughout the course of a PLI policy.
- Stability in interpretation of tariff rates should also be provided.

Decrease in import tariffs (for components with no manufacturing base in India)

- Stability in import tariffs should be coupled with decrease in import tariffs for the initial period of establishment of ecosystem in India. This shall assists in decreasing cost for setting up components ecosystem in India.
- Considering the absence of ecosystem capable of manufacturing components as per international quality standards, import duties on components that are currently not being manufactured in India shall not be imposed.

Encourage major foreign manufacturers to set up components ecosystems in India

- The global demand for components is currently being met by manufacturers located outside India, specifically in China and Vietnam.
- Considering their expertise in setting up component ecosystems and investment abilities, these foreign manufacturers (including from China) must be encouraged to set up component ecosystems in India for the initial years.
- This may grant India with a platform from which the Indian eco-systems may take over in the later years.

Clarity in foreign investment policies

- The Foreign Direct Investment ('FDI') investment norms may need greater clarity with respect to the electronics sector manufacturing.
- The policy may envisage lucrative tax breaks and incentives coupled with Ease of Doing Business and lesser travel restrictions.
- Investment and set-up from Chinese entities shall be treated at par and encouraged as from any other player across the globe.

Development of skillset

- Research & Development should be promoted within the country while focusing on skillset development during the initial period of 1,000 days.

Infrastructure support for plug and play facilities including dormitories for large scale manufacturing

Electronics manufacturing requires large scale operations to be globally competitive. Moreover, various processes in electronics manufacturing are labour-intensive and thus, would require labour in abundance creating the need for plug and play facilities including dormitories with adequate facilities.

To reduce turnaround times and to ensure quicker operationalization of electronics manufacturing units, the need of the hour is that the government builds dormitories on the lines of plug and play model. This shall facilitate electronics manufacturing units to utilize these pre-built dormitories and quickly commence the manufacturing operations.

Deemed approval on regulatory filings and compliances

Considering the numerous compliances and regulatory filings needed to be done by a manufacturing unit, the need of the hour is to permit deemed approval of the documents/permits/filings, especially by large firms and corporations.

Ease in regulatory permits and filings is the need of the hour to enable a conducive business environment for the industry in India and to enhance the attractiveness of India as a credible manufacturing destination. Deemed approval shall go a long way in this endeavour and shall further assist the EoDB.

Improving PLI scheme and other policy measures

A Segment specific inputs for PLI revitalisation

The launch of PLI schemes is a step in the right direction. However, to ensure that maximum potential is attained by way of such incentives and to make India an electronics manufacturing powerhouse, it is highly crucial that the PLI schemes are effective and produce desired results.

For this purpose, an in-depth review and consultation with industry players of each segment is required with respect to the desired tenure of the scheme, incentives value, production and exports targets, tariff and non-tariff barriers etc. to extract maximum potential of the scheme and ensure highest participation from the industry players. Moreover, based on industry feedback, the PLI scheme for IT hardware sector may need to be revisited specifically.

B Encourage design ecosystem in India

Design aspect is a high value-add area in the electronics manufacturing ecosystem and plays a significant role in creating economic value for the industry. India's natural strength in design and R&D capabilities shall act as a catalyst in gaining significant foothold of the design ecosystem.

Although global players have started increasing their presence in India and commenced manufacturing/assembly of products, the design ecosystem has so far remained nascent. By designing products domestically, one automatically gains a better control of the supply chain. Thus, creation of a design ecosystem is a must. The value addition in India in terms of design content and integration is likely to be hugely beneficial.

In order to encourage electronics design ecosystem in India, the expense incurred towards design and R&D capabilities may be treated as qualifying under Corporate Social Responsibility ('CSR') limit.

C Investment roadshows across key destinations

The government of India shall consider organising roadshows across key destinations like United States of America, South Korea, Japan, Taiwan and select countries in west Europe to showcase India's ability and potential to make in India for the world, demonstrate success and facilitate investments from these regions in addition to existing ones.

D Hosting a global conference on electronics

A global level conference on electronics manufacturing in end 2022 / early 2023 may be contemplated by the government to attract international investors in making investments in the emerging technology, smart manufacturing semi-conductors and electronics space in the country.

E Greater access to markets through FTAs

In order to increase exports and presence in the global supply chain, India needs to open and explore markets such as the United States, Europe, western Europe etc. India also needs to align its ambitions of bilateral FTAs by taking into consideration electronics exports as a key item when selecting / negotiating. Equally important is to leverage and review existing trade pacts to provide more opportunities for investors.

Notes

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MAKE IN INDIA