

A close-up photograph of a person wearing white gloves holding a square microchip. The background is a blurred white lab coat.

ATMANIRBHARTA IN

Study report on -
**TELECOM &
MOBILE HANDSET INDUSTRY**

A close-up photograph of a red printed circuit board (PCB) with various electronic components, including capacitors, resistors, and integrated circuits. A person's gloved hand is visible, working on the board.

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Investors and Media

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Introduction

'Atmanirbharta' (Self-sufficient in Hindi) is an attractive catchword. In fact, for almost half a century post-independence, India has been talking of self-sufficiency – in food, industrial inputs, key scientific and defence areas, etc. Given the foreign exchange position of India, the amount of money available for imports was anyway very limited. However, the policy makers were also aware of the limitations of such a policy, particularly in certain sophisticated technological fields. Later, in the 90s, as multilateralism became the *mantra* of a globalised world, India also had to make choices. With a gradual increase in the Forex kitty, thanks to increasing exports, software prowess post the Y2K phenomenon and large inflow of remittances by Indian diaspora, imports got liberalised. The flood-gates for the import of cheaper goods, particularly in certain fields like bulk drugs and consumer electronics, got opened. It is only in the context of Chinese aggression against India in the last couple of years that the policy makers have once again taken stock of the situation and started talking of 'Atmanirbharta'.

China has been a difficult country to deal with to most democracies in the world. It has problems with USA, Canada, Western Europe, Japan, India, ASEAN countries and Australia. As it has become the world's manufacturing hub for a large number of items, the second largest economy, as also one of the most powerful armies of the world, China is rewriting the rules of the game. In the context of the Covid pandemic, which started in China, and the disruptions caused, all countries are realising the perils of 'concentration risk', and India is no exception. India has the advantages of a large domestic market, favourable demographic position, cheaper labour and a supportive infrastructure in terms of investment and finance and hence, is definitely in a position to increase its own manufacturing base and be reasonably self-sufficient in most areas. The Government of India's policies are aimed at facilitating this.

Brickwork Research Team has come out with two Study Reports – one on Bulk Drugs and Medical Devices, and another on Telecom, and hopes readers find these interesting. Readers' comments are welcome.

Vivek Kulkarni IAS (Retd)
Managing Director



TELECOM AND MOBILE MANUFACTURING

Under the Atmanirbhar Bharat initiative, the following four schemes broadly impact the telecom and networking products, and mobile manufacturing sector:

- Production-Linked Incentive Scheme (PLI),
- Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECES)
- Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme
- Phased Manufacturing Program (PMP)

Goals of Policy Initiatives

'Self-reliance' in telecom, networking products and mobile manufacturing: The PLI scheme is to boost the domestic large-scale manufacturing of electronic goods, particularly mobile phones and networking products. The focus of the policy is to increase local value addition. The PMP is also aimed at increasing value addition for mobile phones and sub-assemblies manufactured in India and reducing overdependence on any particular country.

Import substitution: Boost the local production of telecom and networking products, and reduce dependence on Chinese suppliers and create alternative supply sources, while also reducing foreign exchange outgo.

Increasing exports: The policy initiatives are aimed at creating a roadmap for India's long journey from being a net importer to an exporter of telecom and electronics.

Direct and indirect employment generation: A rise in investments will lead to sustained employment generation throughout the value chain. Mobile assembling is a labour-intensive process, and therefore, India can benefit from its lower-cost labour over China, Taiwan, Korea, and others.

Indian Mobile Manufacturing Landscape

Over the last decade, the Indian mobile market has transitioned from a predominantly feature phone market to a smartphone market, in line with the global trajectory of the mobile handset industry. The local feature phone market declined by 42% between 2018 and 2019, whereas the Indian smartphone market grew by 7% in 2019, making India the #2 market for smartphones (with 400 million smartphone



users) after China at #1, and the US slipped to #3 in the pecking order.

The key catalysts for growth in the mobile phone market in India have been as follows:

- **Proliferation of mobile Internet:** India has 1153.77 million wireless subscribers as of December 2020, according to the Telecom Regulatory Authority of India (TRAI). Of these, mobile Internet subscribers are 724.46 million, which in turn constitute 96.9% of the total Internet subscribers, reflecting mobile phones being used as the key medium to access Internet in India. The mobile Internet subscribers were 370 million in December 2016, when Reliance Jio Infocomm just launched its services and offered free data, which disrupted the Indian telecom market.
- **Surge in data usage: Low data tariffs:** The average data usage per subscriber per month was 11.96 GB in September 2020, surging ~10x from 1.2 GB in June 2017. The average data Average Revenue Per User (ARPU) in the quarter ending September 2020 was Rs.10.95, which is also still one of the lowest in the world.
- **Digitisation of economy:** With mobile as the key enabler for accessing Internet, rapid technology adoption and the digitisation of the economy are directly linked with the higher sales of smartphones, tablets, and so on.
- **Covid-19 impact on mobile sales:** In the current year FY21, India's smartphone shipments grew strongly, led by pent-up demand due to the lockdown, strong sales through online platforms, savings on leisure activities translating into higher spends on smartphones which form an integral part of our lifestyle in the changed environment that encompasses working from home and consuming content of all kinds including entertainment, education, banking and payments, all from home.
- **Anti-China consumer sentiments:** China dominates global smartphone shipments (nearly 70% of the market), and so far, anti-China sentiments have not fully translated into significant market share loss for the country, although some tactical gains for Korean counterpart Samsung can be witnessed. Purchase decisions by consumers are based on value buying and the latest technology and features.

Trajectory of Indian Brands vs. Global Counterparts

The Indian mobile handset market remains hypercompetitive, with more than 20 players, evolving technology, changing consumer preferences and the price sensitiveness of Indian consumers leading to the pertinence of low-cost production to survive in this business. The market share in the Indian handset segment is volatile and changes swiftly based on a combination of the aforesaid factors.

The Indian mobile handset players lost significant market share to their Chinese and Korean counterparts over FY15-FY20. The top five players garnered a market share of 90% based on shipment



volumes recorded during Q3CY20. The rest of the 10% market share is distributed over the remaining 15 players, and hence, Indian manufacturers have a fringe market share of less than 5%. Indian manufacturers may need technology and innovation support from their global counterparts to succeed in large-scale manufacturing at competitive prices.

Lava plans to increase its capacity to 100 million smartphones per year by making investments under the PLI scheme. Micromax Informatics Limited (Micromax) has lost significant market share and has been facing sharp decline in the mobile handset business owing to stiff competition with Chinese players. Although it plans to launch models, the product acceptance risk remains high.

Player	Origin	*Latest Market Share (based on Q3CY20 shipments)	Strategy
Xiaomi	China	25.0%	Aggressive online channel presence, aggressive product strategy
Samsung	Korea	22.3%	Effective supply chain, aggressive push in online channel sales,
Vivo	China	16.7%	Significant presence in offline channel
RealMe	China	14.7%	Focus on the budget segment to leverage pent up demand
Oppo	China	11.3%	Focus on budget segment and offline presence
Others		10.0%	

*Source: IDC Quarterly Mobile Phone Tracker, October 2020

Capacity Addition may Remain Long-Drawn Phenomenon; Value Addition may Happen in Phases

India is the second largest mobile manufacturing country, with over 200 manufacturing units (including mobile components and assembling), and has the second largest user base of mobile handsets after China. Gradually, Indian mobile manufacturers have transitioned from being pure assemblers to adding a higher degree of value, although there is still dependence on China, Taiwan and Vietnam for critical components. The smartphone market in India is witnessing increasing interest from global firms for producing mobile phones and key components in India. Smartphone manufacturers have already begun investing in expanding capacities and their manufacturing capabilities to move beyond just assembling phones, to a more integrated manufacturing approach



that includes software and hardware design and product specifications. Backward integration into components will be a logical extension to capacity enhancement, but is likely to happen gradually in phases.

Dominance of Imports

Mobile instruments imported from outside India:

Parts of smartphone	Country
Battery and camera modules	Vietnam
Displays and connectors	China
Silicon chip	Taiwan with final development in China

Impact Assessment of Policy Initiatives

PLI Scheme for Mobile Manufacturing

In April 2020, the government launched the PLI scheme for boosting large-scale electronics manufacturing in India and attracting large investments in mobile manufacturing and allied components.

The PLI scheme focuses on encouraging both global and domestic players to invest in development of the manufacturing ecosystem in India. Mobile phones constitute a key sector covered under the PLI scheme, which has an umbrella allocation of Rs.409,000 crore towards large-scale electronics manufacturing. The envisaged scope of investment is Rs.110,000 crore to manufacture incremental mobile phones worth Rs.84,000 crore over the next five years.

The Ministry of Electronics and Information Technology (MeitY) released detailed guidelines for the Operation of the PLI scheme for large-scale electronics manufacturing on 1 June 2020. The scheme provides for incentives on incremental sales over base year (FY20) for products manufactured in domestic units. Subsequently, supplementary guidelines for the second round of the PLI scheme were announced on 11 March 2021, with specified electronic components as the target segment.

Broad Contours of the PLI Scheme for Mobile Phones and Specified Electronic Components

Eligible Products	<p>Goods manufactured in India and covered under target segments, i.e., mobile phones and specified electronic components</p> <p>Global companies: Mobile phones with invoice value Rs.15000 and above;</p> <p>Domestic companies: No threshold on mobile phone value. Specified electronics components include SMT components, discrete semiconductor devices, passive components, printed circuit boards, sensors, micro/nano electronic components, among others</p>																								
Eligible Applicants	<p>Global companies: consolidated manufacturing revenue of the applicant in the target segment > Rs.10,000 crore in the base year (i.e., FY20).</p> <p>Domestic companies: consolidated revenue in target segment >Rs 100 crore in the base year</p> <p>For specified electronic components, consolidated manufacturing revenue to be >Rs 50 crore in the base year; Under the second round of the PLI scheme, 30 applicants with the highest consolidated revenue in the target segment in the base year shall be eligible.</p>																								
Incremental Investment for Determining Eligibility	<p>Global companies: Rs.1000 crore over four years Minimum Investment (cumulative):</p> <table border="1" data-bbox="503 1205 1471 1339"> <thead> <tr> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> </tr> </thead> <tbody> <tr> <td>Rs.250 crore</td> <td>Rs.500 crore</td> <td>Rs.750 crore</td> <td>Rs.1000 crore</td> </tr> </tbody> </table> <p>Domestic companies: Rs.200 crore over four years Minimum Investment (cumulative):</p> <table border="1" data-bbox="503 1472 1471 1606"> <thead> <tr> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> </tr> </thead> <tbody> <tr> <td>Rs.50 crore</td> <td>Rs.100 crore</td> <td>Rs.150 crore</td> <td>Rs.200 crore</td> </tr> </tbody> </table> <p>Specified electronics components Rs.100 crore over four years Minimum Investment (cumulative):</p> <table border="1" data-bbox="503 1738 1471 1803"> <thead> <tr> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Year 1	Year 2	Year 3	Year 4	Rs.250 crore	Rs.500 crore	Rs.750 crore	Rs.1000 crore	Year 1	Year 2	Year 3	Year 4	Rs.50 crore	Rs.100 crore	Rs.150 crore	Rs.200 crore	Year 1	Year 2	Year 3	Year 4				
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	Year 3 & Year 4	5%
	Year 5	4%

Source: Ministry of Electronics & Information Technology (MeitY)

Incentive on Incremental Sales for Both Domestic and Global Manufacturers

Under the PLI scheme for handset manufacturing, approved companies are eligible for

- 6% incentive on incremental sales of handsets over the base year, i.e., FY19-20 for the first two years
- 5% for the third and fourth year
- and 4% for the fifth year

Global manufacturers need to invest minimum Rs.1,000 crore cumulatively over four years and produce handsets of invoice value above Rs.15,000. Domestic manufacturers have an investment target of Rs.200 crore cumulatively over a four-year period for expanding production without any bar on the value of phones produced. Companies will also be eligible for incentives linked to the cost of capex, and research and development.

Approvals and Progress Under PLI Scheme for Mobile Phones

So far, 16 applicants have been approved under the PLI scheme by the Ministry of Electronics and Information Technology. Apple and Samsung together account for nearly 60% of the global sales revenue of mobile phones, and this scheme is expected to increase their manufacturing base manifold in India.

Among the larger players, Samsung has announced its plans to relocate its mobile and IT display production unit from China to Noida, Uttar Pradesh. Samsung currently has a capacity to manufacture 120 million units in a year. Xiaomi already manufactures 99% of its smartphones in India and has partnerships with Foxconn, Flex and Hi-Pad. Xiaomi has also planned to expand its Indian production capacity by 20% by sourcing devices and components from local partners and manufacturers.

Among domestic companies, Micromax plans to make a comeback in the market under the PLI scheme with its 'IN' series, which would range between Rs.7000- Rs.15000. Dixon Technologies Limited has set-up its facility and has already invested in capex to meet the eligibility criteria to avail incentives under the PLI scheme. Dixon Technologies has also tied-up with global brands



Motorola and Nokia, and would be catering to a reasonable portion of these brands' global smartphone requirements over the medium term.

For global companies, the investment may be funded majorly by parent companies, as evidenced in the past investments. The incremental requirements of working capital are also sometimes funded by overseas entities in the form of payables.

Since the minimum eligibility investments under domestic category are low, at Rs.50 crore, funding could be met by internal accruals and/or bank debt. The major funding requirements would be in the form of working capital limits for enhanced production, largely in the form of non-fund-based limits.

	Companies/brands approved by MeitY for PLI scheme	Companies/brands approved for Specified Electronic Components Segment
Global	<ul style="list-style-type: none"> ● Samsung, ● Hon Hai and Rising Star (Foxconn companies), ● Wistron and Pegatron (both are Taiwanese contract manufacturers for Apple iPhones) 	<ul style="list-style-type: none"> ● AT&S, ● Ascent Circuits, ● Visicon, ● Walsin, ● Sahasra and ● Neolync
Domestic	<ul style="list-style-type: none"> ● Lava, ● Bhagwati (Micromax), ● Padget Electronics (Dixon Technologies) , ● UTL Neolyncs(Karbons) and ● Optimus Electronics 	



PLI Scheme for Telecom and Networking Products Manufacturing in India

The PLI scheme for telecom and networking product manufacturing was announced in February 2021, with a total outlay of Rs.12,195 crore and will be effective from 1 April 2021 for a period of five years. The investment under the scheme needs to be made in four years, subject to qualifying incremental annual thresholds.

The fine print of these investments is yet not declared, and may take time, but the policy announcements are a sentiment booster.

Broad Contours of the PLI Scheme for Telecom and Networking Products

Eligible Products	<ul style="list-style-type: none"> ● Core transmission equipment, ● 4G/5G, next-generation radio access network and wireless equipment, ● Access and Customer Premises Equipment (CPE), Internet of Things (IoT), access devices and other wireless equipment ● Enterprise equipment: switches, routers ● Any other product as decided by the EGos 																
Investment for Determining Eligibility	<p>MSMEs: minimum threshold investment of Rs.10 crore, excluding land and buildings</p> <p>Other than MSMEs: minimum threshold investment of Rs.100 crore, excluding land and buildings</p>																
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Incremental Sales of Manufactured Goods	MSMEs: minimum incremental sales and maximum eligible sales of manufactured goods net of taxes over base year					
		Year 1	Year 2	Year 3	Year 4	Year 5
	Minimum	Rs.6 crore	Rs.12 crore	Rs.21 crore	Rs.30 crore	Rs.30 crore
	Maximum	Rs.120 crore	Rs.240 crore	Rs.420 crore	Rs.600 crore	Rs.600 crore
Incremental Sales of Manufactured Goods	Other than MSMEs: minimum incremental sales and maximum eligible sales of manufactured goods net of taxes over base year					
		Year 1	Year 2	Year 3	Year 4	Year 5
	Minimum	Rs.60 crore	Rs.120 crore	Rs.210 crore	Rs.300 crore	Rs.300 crore
	Maximum	Rs.1200 crore	Rs.2400 crore	Rs.4200 crore	Rs.6000 crore	Rs.6000 crore
Incentive Rate on Incremental Sales		Year 1	Year 2	Year 3	Year 4	Year 5
	MSMEs	7%	7%	6%	5%	4%
	Other than MSMEs	6%	6%	5%	5%	4%

Source: Ministry of Communications (Department of Telecommunications)

Phased Manufacturing Program

The PMP was launched in April 2017 to promote the indigenous manufacturing of mobile handsets and its sub-assemblies, through fiscal and financial incentives with an intent to substantially increase value addition within India. With the implementation of the PMP, the value addition or share of indigenously procured components in the manufacturing of feature phones was supposed to go up from about 15% to 37% and the same for smartphones to increase from 10% to 26%.

Incentives under PMP include:

- Rationalised tariff structure
- Availing capex benefits under the Modified Special Incentive Package Scheme (M-SIPS)



- **Export benefit of 4% of export under the Merchandise Exports Incentive Scheme (MEIS)**
- **Duty protection for five years**
- **100% FDI permitted for mobile phones and their sub-assemblies**

Implementation Challenges and Bottlenecks

- **Supply chain issues and continued dependence for components:** The global supply chain disruption for handset components leading to a scarcity of components such as display, memory and electronic chipsets has impacted the production capability and launch schedule of Indian handset manufacturers such as Karbonn, Micromax and Lava. The shortage has also led to a sudden and sharp increase in the price of these components, which has made competition tougher in the entry-level basic smartphone segment. The Indian Cellular and Electronics Association (ICEA) has requested the government to rollover timelines for incentives under the PLI scheme in the backdrop of such shortages.

Hence, component self-sufficiency is viewed as a critical implementation challenge for handset players, especially smaller players, where sourcing volumes are lower. The risk of a higher cost of production that will hamper competitiveness could lead to the risk of slower returns on investment, which in turn will slowdown future investments and the development of the ecosystem.

- **Higher cost of production vis-a-vis Asian peers:** The Indian cost of manufacturing of mobiles stacks up higher than that of China and Vietnam on account of multiple factors ranging from a lack of subsidies for infrastructure, and research and development to a higher cost of working capital debt. Even with PLI incentives included, the Indian cost will remain on the higher side to the tune of 13%-15% compared to Chinese counterparts.
- **Slower-than-expected global growth leading to less scope for exports:** The rising adoption of artificial intelligence in smartphones and use of 5G could propel handset demand in the next five-year period. Rising disposable incomes and an increase in the launch of budget-centric smartphones and new variants are some of the significant factors that will drive smartphone market growth over the next five years. A risk to this assumption could be lesser economic growth, which could hamper smartphone demand and thereby lead to the underutilisation of capacities.
- **Risk aversion in lending and high cost of capital:** The higher cost of debt compared with Asian peers also leads to cost disadvantages for Indian peers. China and Vietnam have interest subventions on working capital, which renders the Indian cost of debt comparatively higher.



BWR STANDPOINT

Brickwork Ratings (BWR) believes that with policy initiatives such as 'Make in India', Production-Linked Incentive (PLI) Scheme and Phased Manufacturing Program (PMP), under the umbrella of 'Atmanirbhar Bharat' have a potential to boost large-scale telecom, networking products and mobile manufacturing in India over the medium to long term, thereby enabling India's inclusion in the global supply chain. The timing may be just pertinent as economies are looking at reorienting their supply chains while reducing overdependence on a particular country for sourcing mobile devices and components in the backdrop of disruptions led by Covid-19. For Indian manufacturers, ensuring component supplies, controlling the overall cost of production and securing timely funding for capex and working capital would be critical success factors.

The rising adoption of Artificial Intelligence (AI) in smartphones and use of 5G could propel handset demand in the next five-year period. Rising disposable incomes, an increase in online education and more launches of budget-centric smartphones and new variants are some of the significant factors that will drive smartphone market growth over the next five years. A risk to this assumption could be lesser economic growth, which could hamper smartphone demand and thereby lead to the underutilisation of large-scale capacities.

For global companies investing through contract manufacturers in India, these investments may be funded majorly by parent companies, as evidenced in the past. The incremental requirements of working capital are also sometimes funded by overseas entities in the form of payables. For domestic companies, the major funding requirements would be in the form of working capital limits for enhanced production, largely in the form of non-fund-based limits.

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