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Telecom Regulatory Authority of India

Consultation Paper

on

Promoting Local Telecom Equipment Manufacturing

New Delhi

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Telecom Regulatory Authority of India

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Written comments on the consultation paper are invited from the stakeholders by 16th October 2017. Counter comments, if any, may be submitted by 30th October 2017. Comments and Counter-comments will be posted on TRAI's website www.trai.gov.in. The comments/ counter-comments in electronic form may be sent by e-mail to arvind@trai.gov.in and bharatgupta.trai@gmail.com . For any clarification/ information, Shri Arvind Kumar, Advisor (BB&PA) may be contacted at Tel. No. +91-11-23220209; Fax: +91-11-23230056.

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Chapter I

Introduction and Background

1. Telecommunication has supported the socio-economic development of India by narrowing the rural-urban digital divide. India has witnessed a tremendous growth in the telecom sector in the past two decades wherein the telecom subscriber base has grown steadily over the years and had 1,210 million subscribers on 31 July 2017[1]. It is the second largest in the world while continuing to grow at a Compounded Annual Growth Rate (CAGR) of 19.6% during FY 2007-17[2]. Collaborative efforts by Telecom Service Providers (TSPs), Infrastructure companies and Government have helped in the growth of the Telecom sector which is likely to cross INR 6.6 trillion[3] revenue mark by the year 2020.

2. The Telecom industry ecosystem comprises of Telecom Service Providers (TSPs), Telecom Infrastructure Providers, Handset Manufacturers and Telecom Equipment Manufacturers. Some of the major achievements of the telecom industry are as listed below:-

   (a) Over 400 million internet users[4].

   (b) Contributes 6.5% to India's GDP[5].

   (c) Rural Tele density increased by 30% over the last five years[6].

   (d) Telecom Industry generates over 4 million (direct and indirect) jobs[7].

   (e) 38 new mobile manufacturing units set up since September 2015[8].

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1 http://www.trai.gov.in/sites/default/files/PR_TSD130917_0.pdf
2 https://assets.kpmg.com/content/dam/kpmg/in/pdf/2017/08/Accelerating-growth.PDF
3 IBEF telecommunication report-June 2017.
https://ibef.org/industry/telecommunications.aspx dated June 2017.
4 http://www.internetworldstats.com/top20.htm
5 http://indianexpress.com/article/technology/tech-news-technology/mobile-industry-to-contribute-8-2-to-gdp-by-2020-govt-report-4394308/
6
http://www.careratings.com/upload/NewsFiles/SplAnalysis/Telecom%20Report%20March%202017.pdf
7 IBEF telecommunication report-June 2017.
https://ibef.org/industry/telecommunications.aspx dated June 2017.
8 http://www.business.standard.com/acrticle/pti-stories/cos-set-up-38-new-mobile-handset-units-since-sep-2015-116110701941_1.html

(f) FDI in the industry has increased from USD 8,637 million in 2015-16 to USD 37,435 million in 2016-17[9].

3. While the Mobile handset manufacturing industry has shown good progress in the past five years, the telecom equipment manufacturing industry has not been able to match the performance of mobile handset manufacturing industry. A phased manufacturing program for promoting indigenous manufacturing of mobile handsets its sub-assemblies and parts/sub-parts was notified by MeitY on 28 April 2017, however no such plan/ road-map has been developed for the telecom equipment manufacturing industry. In the past two decades, the Telecom services sector has grown at a much faster rate than other sectors of the economy like agriculture and industry. Today, the services sector commands nearly 60 % of India's gross domestic product (GDP) whereas the share of manufacturing, which is a major contributor to the Infrastructure domain, has been stagnating at around 16% on average since 1990.[10] Initiatives under the 'Digital India' programme coupled with the 'Smart Cities', 5G deployment, Machine to Machine(M2M), Internet of Things(IoT) which require advanced and robust IT and telecom infrastructure have played an important role in making telecommunication a necessity in India. Key sectors such as agriculture, banking and financial services, public services, e-commerce, healthcare, education, entertainment etc utilise the backbone of telecommunication infrastructure and services. The exponential growth witnessed by the telecom sector may also be attributed to rapid technological developments (2G, 3G, 4G, and LTE etc), population growth and economic growth etc. Despite all the initiatives and the potential and growth numbers, significant enhancements have to be made in the IT and Telecommunications ecosystem for greater efficiencies and sustained growth.

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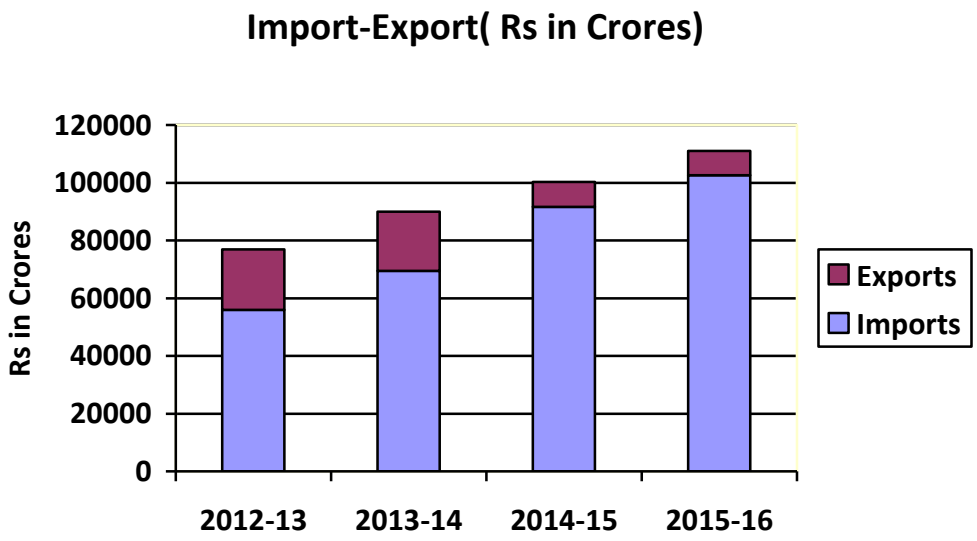
9 http://dipp.nic.in/sites/default/files/FDI_FactSheet_June2017_2_0.pdf
10 World Bank National accounts data available at:
http://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=IN

4. The initiatives taken, both by the government and the industry, have resulted in extensive spread of communication networks across the country and subsequent emergence of an important information economy within India. While a liberal trade policy enabling import of telecom equipment with low or no duty has kept both service providers and consumers happy, the lack of capacity building for domestic production poses a serious challenge to India's continued success in the telecom sector. Apart from economic reasons, the security concerns arising out of excessive reliance on foreign manufactured products also suggest that India should aim at achieving self-sufficiency in telecom equipment manufacturing.

5. The graph below depicts the Import-Export of telecom equipments in India from 2012 to 2016. It can be inferred that the Import bill has increased at a rate of 16.3% annually while the Exports have declined at an annual rate of 17.98%.



Source: Annual reports, Department of Telecommunication (DoT)

Graph: Import and export of telecom equipments

6. According to a report, over 90% of the demand of telecom equipments in India was met through imports in year 2013-14[11]. One of the primary

11 "Over 90% of telecom gear in India's Rs 50,000-cr market is imported", Business Standard, April 29, 2014, available at http://www.business-standard.com/article/companies/over-90-of-telecom-gear-in-india-s-rs-50-000-cr-market-is-imported-114042900254_1.html

reasons for Increasing Import and decreasing Exports is the relentless competition from China which is known for large scale production and export of low cost telecom equipments besides imports from other countries like Sweden, Finland and USA.

7. TRAI had floated a consultation paper titled "Encouraging Telecom Manufacturing in India" on 28 December, 2010. Recommendations on "Telecom Equipment Manufacturing Policy" were published and forwarded to DoT on 12 April, 2011 (Annexure I).

8. In the past five years, there has been an exponential growth in the technology in the telecom sector. A need has therefore been felt to revisit the issue of "Promoting Local Manufacturing in Telecom Sector". The present consultation paper has therefore been aimed to realistically assess India's true potential in equipment manufacturing with the aim to arrive at recommendations that would enable Indian telecom industry to transition from an import-dependent industry to a global hub for manufacturing.

9. The consultation paper consists of four chapters, the first chapter gives the Introduction and the background, the second chapter is based on the present concerns of the local telecom manufacturing industry, the third chapter brings out the various initiatives taken by the government to boost the local telecom manufacturing while the fourth chapter is based upon the issues on which response from the stake holders has been sought for the present consultation paper.

Chapter II

Present Concerns of the Local Telecom Manufacturing

1. Present Concerns: Though large number of initiatives have been undertaken by the Government since liberalisation(1991), relevant concerns still exist ,the same are summarised below:

   (a) Heavy Reliance on Imported Equipments Before the entry of private operators and advent of mobile telephony, there were several Indian manufacturers of landline equipment. The C-DOT ANRAX (Access Network Rural Exchange), MARR (Multi Access Rural Radio), switches, FWT (Fixed Wireless Terminal), EPBT (Electronic Push Button Telephone), OFC (Optical Fibre Cables), telecom towers, batteries and power-supplies, test instruments etc were all manufactured in India. In the pre-mobile era, when PSU's were the only operators; procurement of telecom equipment from locally manufactured sources was an essential clause in most of the tenders. This clause necessitated even foreign firms to start manufacturing in India may be at SKD (Semi Knock Down) level. However, post the advent of mobile era, mobile phones and telecom equipment were permitted to be imported duty free, while this has provided the consumers with better choices and bargaining power, it has also restricted growth of mobile phone and telecom equipment manufacturing in India.

   (b) Rapid Technological Advancements in Telecom Sector Telecom sector being dynamic in nature, both in terms of technology and the services, requires sustained heavy investments on Research and Development (R&D) . Major telecom equipment manufacturing companies of the world are therefore rolling out equipments manufactured as per the latest standards and quality to maintain their relevance and dominance in the sector. India being the second most populated nation of the world is also the biggest market for the telecom equipment vendors. Increasing per-capita income, large population of youth and the need to remain

connected 24 X7 has fuelled the growth of telecom in India. Rapid growth of telecom in India has attracted foreign telecom players to invest in our country. Indian manufacturers find it difficult to meet the pace of rapidly changing technologies, expenditure on Research and Development as well as marketing strategies as compared to their foreign counterparts.

(c) Tariff Structure: The Indian electronics industry is caught in a vicious circle of zero duty imports, high domestic production costs and manufacturing ecosystem challenges.The salient features of tariff structure presently applicable to Electronics Hardware Industry in India are as under:

(i) Peak rate of Basic Customs Duty (BCD) is 10%.

(ii) BCD on 217 tariff lines covered under the Information Technology Agreement (ITA) of WTO is 0%.

(iii) All goods required in the manufacture of ITA items are exempted from BCD subject to actual user condition. Special Additional duty of Customs (SAD) has been reduced from 4% to Nil for all goods except populated PCBs, falling under any Chapter of the Customs Tariff, for use in manufacture of ITA bound goods vide Notification No. 11/2015-Customs dated 01.03.2015.

(iv) BCD on specified raw materials / inputs used for manufacture of electronic components and optical fibres and cables is 0%.

(v) BCD on specified capital goods used for manufacture of electronic goods is 0%.

(vi) To promote indigenous manufacturing of Mobile Handsets and Tablet computers, BCD and Excise Duty has been exempted on all parts, sub-parts, components and accessories for the manufacture of these items.

(vii) Differential Excise Duty dispensation is available to Mobile Handsets and Tablet Computers i.e. Countervailing Duty (CVD) @12.5% and Excise Duty @1% without CENVAT credit or 12.5% with CENVAT credit.

However, the extent of benefit accrued to the domestic manufacturers arising out of these measures needs to be ascertained. As per the inputs available on GST, the GST rate for telephones for cellular networks or for other wireless networks and parts for their manufacture has been fixed at 12%.TRAI's Recommendations on Telecom Equipment Manufacturing Policy in 2011 had suggested an income tax holiday for 10 years, as applicable to the software industry, for domestic telecom manufacturers having annual turnover of less than Rs 1000 crore. Further, it was recommended that telecom equipment manufacturers be exempted from payment of Minimum Alternative Tax. However, these benefits are yet to be allowed under the Income Tax Act, 1961.

(d) Performance of PSU's: In the absence of large volumes of orders, over years, the PSU's like ITI and R&D organisations like C-DOT have not been able to upgrade their capabilities to match the dynamic requirements of the telecom industry.

(e) Intellectual Property Rights(IPRs):

(i) Innovation: There are multiple IPR issues concerning the Indian telecom manufacturing sector. First, there are not many IPRs generated in the electronics segment due to poor state of innovation. It should be noted that electronic equipments include telecom equipments because they consist of electronic parts.[12] As per the United Nations Development Program Report, 2016, for the period 2005-14, India's total research and development expenditure was only 0.8% of its GDP. Other countries such as the Republic of Korea and Israel's expenditure on research and development are 4.3% and 4.1% of their respective GDPs[13]. Since IPR's are not held with the Indian

12 http://niti.gov.in/writereaddata/files/document_publication/Electronics%20Policy%20Final%20Circulation.pdf

13 http://hdr.undp.org/en/2016-report

telecom manufacturers, they incur higher expenditures on royalty payments which ultimately results in increase in price of locally manufactured telecom equipments. Further, a recent survey studying the patent ownership for 50 entities noted that 38 were non-Indian while only12 were Indian. The findings showed that out of approximately 23,500 total patents identified, only 18 patent applications have been filed by 3 Indian entities (Spice Digital, HCL, and Videocon), but no successful patents were issued. The data below clearly shows the grim state of innovation in the segment of telecom equipments.[14]

Telecommunications Firms, Indian Patents and Patent Applications (2000–2015)[15]

Top 10 firms

S. No	Assignee	Nationality	Patents Issued
1.	Qualcomm	United States	5,954
2.	Ericsson	Sweden	1,843
3.	Samsung	South Korea	1,827
4.	Nokia	Finland	1,744
5.	Microsoft	United States	1,557
6.	Philips	Netherlands	1,460
7.	Sony	Japan	1,235
8.	Alcatel Lucent	France	971
9.	Motorola	United States	842
10.	LG	South Korea	791

14 https://www.vanderbilt.edu/jotl/wp-content/uploads/sites/78/6.-Contreras-Web.pdf

15 Ibid.

Indian Firms

S. No	Assignee	Patent Applications
1.	HCL	11
2.	Spice Digital	6
3.	Videocon	1

(ii) Standard Essential Patents (SEP) The concept of SEPs does not have any statutory recognition in the Patents Act, 1970, however, by virtue of its practical implication, it has been recognized by the Delhi High Court and the Competition Commission of India.16 A patent which is accepted as a standard (for instance 3G, 4G technology standards) for any equipment acquires the status of SEP. This is determined by the Standard Setting Organisations like European Telecommunications Standards Institute (ETSI) and Institute for Electrical and Electronics Engineers (IEEE). SEP has a direct bearing on cost of equipments. For example, if Company A wants to manufacture 3G, 4G compliant devices (hand phones, tablets, etc.) it has to obtain license from the SEP holder having patent over the said standards. Therefore, once a patent holder acquires the status of SEP holder, it is bound by the obligation to grant the license on Fair, Reasonable and Non-Discriminatory (FRAND) terms. Presently, calculation of royalty on FRAND basis remains a challenge and is the bone of contention in the ongoing SEP disputes. Therefore, there is a need to devise formula/mechanism to determine the basis on which SEPs can

16 http://lobis.nic.in/ddir/dhc/VIB/judgement/30-03-2016/VIB30032016CW4642014.pdf

be licensed on FRAND. The term 'reasonable' used in the expression FRAND is often interpreted differently by a patent licensor as opposed to patent licensee. While royalty determination is primarily a commercial negotiation, but lack of any guiding factors and asymmetric bargaining capacity between licensor and licensee often ends up in litigation. Issues pertaining to the basis for determination of royalty i.e., whether on the value of the Smallest Saleable Patent Practicing Component (SSPPC) or on the net price of the downstream product, or some other criterion remains open ended.

(iii) Information on patents/licenses: Availability of information on the number of patents and licenses required for manufacturing a product, royalties to be paid and the quantum of these royalties etc in a transparent and time bound manner can facilitate the local telecom equipment manufacturers. The Indian Patent Office (IPO), under the Ministry of Commerce and Industry has the administrative authority to examine and grant patents in India. However, there is no single window like structure in place, which can provide clarity in terms of patent licensing requirements at the time of commencement of manufacturing activities.

(iv) Non Disclosure Agreements may result in differential in royalties to be paid. Rate of royalty differs substantially from one potential licensee to another. This results in higher costs for the local manufacturers and therefore higher purchase costs for the consumers. A need therefore exists to transparently mention the range of royalties to be paid in percentages wherever feasible.

(v) TRIPS Agreement: TRIPS (Trade Related Aspects of Intellectual Property Rights) agreement (Article.51) requires that the member countries should provide the power of seizure for Trademark and Copyright infringements at the border, In Indian context, patent infringements have also been included over and

above the mandatory Trademark and Copyright infringements under Intellectual Property Rules, 2007. This has resulted in large number of litigations and is seen as a bottleneck for the local telecom equipment manufacturers.

(f) Standardization, Specifications and Testing: Major IT/telecom products being used across markets are primarily based on global standards. For example, mobile/ broadband devices and network infrastructure products are based on global standards like GSM, LTE, Wi-Fi etc. Harmonization of these standards to work across networks is critical. India being a large market for such products, it may therefore be necessary that India specific requirements / specifications are incorporated considering our local needs. In view of the same, need for domestic specification factoring these requirements in the national standards becomes critical.

(g) Certification of Telecommunication Equipments: Draft "Procedure for Certification of Telecommunication Equipment" was published by TEC (Telecommunication Engineering Centre) on 24 May 2017, once finalised the issues pertaining to certification of Telecom Equipments may be resolved.

(h) Export Incentives: Currently the only export incentive available to handset manufacturers is 2% incentive under the Merchandise Exports from India Scheme (MEIS) introduced in the Foreign Trade policy 2015-20. Lower incentives are reported to be detrimental to the growth in exports from India.

(i) E-Waste Management Rules, 2016: India is the fifth largest producer of e-waste in the world and had generated 18 metric tonnes of e-waste in 2016(12% of global e-waste)[17].As per a study conducted by United States Environmental Protection Agency(EPA)[18], by 2020 e-waste generation in India would increase by 500% for old computers and by 1800% for old mobiles as

17 India's e-waste growing at 30% annually, issued by The Hindu Business line on 03 June 2017.

18 E-Waste management in India current scenario report issued by the United States Environmental Protection Agency(EPA)

compared to the levels of 2007. India recycles less than 2% of the total e-waste annually[19], the Ministry of Environment Forest and Climate Change had issued the E-Waste Management Rules, 2016 with the aim of reducing e-waste production and increasing recycling in the most efficient manner. Under these rules, the government introduced Extended Producers Responsibility (EPR) which makes producers liable to collect 30% to 70 %(over seven years) of the e-waste that they produce. Since the e-waste collection is carried out mostly by the unorganised sector, hence the telecom equipment manufacturers find it difficult to comply with these rules. Non compliance of existing rules act as deterrent for the entrepreneurs/existing players to venture/operate in the telecom equipment manufacturing industry.

Questions:

Q.1 Large number of initiatives have been taken by the government to promote electronics manufacturing, while these initiatives have succeeded in attracting significant investments in other sectors like LED, consumer electronics, mobile handsets, automotive electronics etc, they have failed to attract investments in telecom equipment sector e.g PMA has worked very effectively in LED sector but did not work so effectively in telecom. Please enumerate the reasons with justifications for the poor performance of local telecom manufacturing industry inspite of numerous initiatives by the government/industry.

Q.2 what policy measures are required to be instituted to boost Innovation and productivity of local Telecom manufacturing in our country? Please provide details in terms of Short-Term, Medium-Term and Long-Term objectives.

Q.3 Are the existing patent laws in India sufficient to address the issues of local manufacturers? If No, then suggest the measures to be

19 India's e-waste growing at 30% annually, issued by The Hindu Business line on 03 June 2017.

adopted and amendments that need to be incorporated for supporting the local telecom manufacturing industry.

Q.4 Is the existing mechanism of Standardisation, Certification and Testing of Telecom Equipments adequate to support the local telecom manufacturing? If not, then please list out the short-comings and suggest a framework for Standardisation, Certification and Testing of Telecom Equipments.

Q.5 Please suggest a dispute resolution mechanism for determination of royalty distribution on FRAND (Fair Reasonable and Non Discriminatory) basis.

Chapter III

Initiatives taken by Government to boost Local Telecom Manufacturing

1. Initiatives taken by the Government: The telecom market in India has been characterised by a gradual shift from significant governmental regulations and control towards open market competition. This shift has both enabled competition among Indian service providers and carriers and fostered the opening of India's telecom equipment markets to foreign competitors. Sustained initiatives have been taken by various governments post liberalisation (1991), the same are summarised below:

   (a) National Telecom Policy 1994 The first step in this direction of liberalisation of Telecom Sector was announcement of the National Telecom Policy in 1994 (NTP 94). This provided for opening up the telecom sector to competition in Basic Services as well as Value Added Services like Cellular Mobile Services, Radio Paging, VSAT Services etc. It also set target for provision of telephone on demand and opening up of long distance telephony. NTP 94 spelt out five basic objectives of which two objectives of availability of telephone on demand and universal service (connecting all villages) were targeted to be realized by 1997. Two other objectives were to make the country a major manufacturing base and exporter of telecom equipment and to ensure the country's defence and security needs. The powers of licensing and spectrum management were retained by the Government on the ground that both need to be strictly monitored in order to protect the strategic interests and security of the country.

   (b) New Telecom Policy, March 1999 Objectives laid down under NTP 99 were as under:-

      (i) Availability of affordable and effective communications for the citizens was the core of the vision and goal of the telecom policy.

(ii) Provide a balance between the provision of universal service to all uncovered areas, including the rural areas, and the provision of high-level services capable of meeting the needs of the country's economy.

(iii) Encourage development of telecommunication facilities in remote, hilly and tribal areas of the country.

(iv) Create a modern and efficient telecom infrastructure taking into account the convergence of IT, media, telecom and consumer electronics and thereby propel India into becoming an IT Superpower.

(v) Convert PCO's, wherever justified, into Public Tele-info centres having multimedia capability like ISDN services, remote database access, government and community information systems etc.

(vi) Transform in a time bound manner, the telecom sector to a greater competitive environment in both urban and rural areas providing equal opportunities and level playing field for all players.

(vii) Strengthen research and development efforts in the country and provide an impetus to build world-class manufacturing capabilities.

(viii) Achieve efficiency and transparency in spectrum management.

(ix) Protect Defense and security interests of the country.

(x) Enable Indian Telecom Companies to become truly global players.

(c) National Telecom Policy 2012 ("NTP 2012") Following objectives for promoting Research and Development, Telecom Equipment Manufacturing and standardization of Telecommunication Equipment were laid down in the NTP 2012:-

(i) To make India a global hub for telecom equipment manufacturing and a centre for converged communication services.

(ii) Promote innovation, indigenous R&D and manufacturing to serve domestic and global markets, by increasing skills and competencies.

(iii) Create a corpus to promote indigenous R&D, IPR creation, entrepreneurship, manufacturing, commercialization and deployment of state-of-the-art telecom products and services during the 12th five year plan period.

(iv) Promote the ecosystem for design, Research and Development, IPR creation, testing, standardization and manufacturing i.e. complete value chain for domestic production of telecommunication equipment to meet Indian telecom sector demand to the extent of 60% and 80% with a minimum value addition of 45% and 65% by the year 2017 and 2020 respectively.

(v) Provide preference to domestically manufactured telecommunication products, in procurement of those telecommunication products which have security implications for the country and in Government procurement for its own use, consistent with our World Trade Organization (WTO) commitments.

(vi) Develop and establish standards to meet national requirements, generate IPRs, and participate in international standardization bodies to contribute in formulation of global standards, thereby making India a leading nation in the area of international telecom standardization.

(vii) Put in place appropriate fiscal and financial incentives required for indigenous manufacturers of telecom products and R&D institutions.

(d) National Policy on Electronics (2012) National Policy on Electronics was formulated by the Government of India in October 2012 to boost India's electronics systems and design manufacturing industry and improve its share in global market.

The electronic industry, at about $1.75 trillion, is one of the largest and fastest growing industries in the world. In 2014-15, imports accounted for around 58% of the total consumption of electronic goods. Important objectives of this policy were as follows:

(i) To set up an Institute for Semiconductor Chip Design to satisfy the demand for skilled workers in the sector, the policy aimed to put special focus on increasing postgraduate education. To incubate a $400 billion in Electronic System Design and Manufacturing (ESDM) sector which would generate employment for more than 28 million people till 2020.

(ii) To build a strong supply chain of raw materials, parts and electronic components to raise the indigenous availability of these inputs from the present 20-25 % to over 60 % by 2020.

(iii) Set up National Electronics Mission with industry participation and renaming the Department of Information Technology as Department of Electronics and Information Technology (DeiTY).

(iv) To build on the emerging chip design and embedded software industry to achieve global leadership in Very Large Scale Integration (VLSI), chip design and other frontier technical areas and to achieve a turnover of USD 55 billion by 2020.

(v) To create long-term partnerships between ESDM and strategic and core infrastructure sectors – Defence, Atomic Energy, Space, Railways, Power, Telecommunications, etc.

(e) <u>Steps to boost Semiconductor Industry</u>

(i) In the Union Budget 2017-18, the Government of India increased the allocation for incentive schemes like the Modified Special Incentive Package Scheme (M-SIPS)

and the Electronic Development Fund (EDF) to Rs 745 crore for providing a boost to the semiconductor as well as the electronics manufacturing industry.

(ii) The Union Cabinet has approved incentives up to Rs 10,000 crore for investors by amending the M-SIPS scheme, in order to further incentivize investments in electronics sector, create employment opportunities and reduce dependence on imports by 2020.

(iii) The Ministry of Electronics and Information Technology plans to revise its policy framework, which would involve the government taking a more active role in developing the sector by providing initial capital, with the aim to attract more private players and make India a global semiconductor hub.

(iv) Electropreneur Park at University of Delhi's South Campus was inaugurated on 27 August 2016; the facility is aimed to incubate 50 early stage start-ups and create at least five global companies over a period of next five years.

(v) The Union Cabinet, on 28 January 2015 had re-constituted an empowered committee on setting up semiconductor wafer fabrication manufacturing facilities in the country.

(f) Modified Special Incentive Package Scheme(M-SIPS): The scheme was announced by the Government in July 2012 to offset disability and attract investments in electronic manufacturing. The scheme provides incentives on reimbursement basis for investment in capital expenditure i.e. 20% for investments in Special Economic Zones(SEZ) and 25% in Non-SEZ.It also provides for reimbursements of CVD/Excise for capital equipment for the non-SEZ units. The status of M-SIPS applications as on 30.06.2017 is as follows:

Status	No of proposals	Investments (Rs in crore)
Applications Approved	97	20,809
Applications under process	134	1,22,434
Applications recommended by Appraisal Committee and under process of approval	12	784
Applications under Appraisal	124	1,03,556
Incentive disbursed	4	40.99

Source: Ministry of Electronics and Information Technology[20]

(g) Electronic Development Fund(EDF) The government has established a single EDF to cater for the financial requirements for R&D. The EDF has been setup as a "Fund of Funds" to participate in "Daughter Funds" which will provide risk capital to companies developing new technologies in the area of electronics, nano-electronics and IT. The EDF policy was approved by the cabinet on 10.12.2014, notified on 09.01.2015 and launched on 15.02.2016.Twenty two daughter funds have been selected for investment through EDF. The cumulative commitment of EDF in June 2017 was Rs 1227 Crore.

(h) Joint Task Force on Mobile Manufacturing Eco-System: In December 2014, DeitY (now MeitY) had set up a Joint Task Force consisting of representatives from the industry and the government to re-establish and catalyse significant growth in the mobile handset and component manufacturing eco-system. The task force has been mandated to achieve manufacturing target of 500 Million handsets and generation of 15 Lakh jobs by 2019.

(i) The Government of India has allocated Rs. 10,000 crore for rolling out optical fibre-based broadband network across 150,000 Gram

20 http://meity.gov.in/writereaddata/files/e-newsletter-ElectronicsIndia-ApriltoJune2017.pdf

Panchayats and Rs.3,000 crore for laying optical fibre cable (OFC) and procuring equipment for the Network For Spectrum (NFS) project in 2017-18.

(j) Skill Development: The Ministry of Skill Development and Entrepreneurship (MSDE) had signed a Memorandum of Understanding (MoU) with DoT(Department of Telecommunication) on 22 January 2016 to develop and implement National Action Plan for Skill Development in telecom sector, with an objective of fulfilling skilled manpower requirement and providing employment and entrepreneurship opportunities in the sector. MeitY also provides support for skill development in telecom sector. This is at vocational level, graduate level, and PhD level. The skill development programs include Chip to System program, Chip designing etc.

(k) Preferential Market Access(PMA) Govt in a bid to encourage local manufacturers had promulgated the policy of PMA for procurements by Govt ministries and departments. PMA was notified by Department of Electronics and Information Technology (DeitY) vide Notification No. 8(78)/2010-IPHW on 10.02.2012. The Policy was revised and notified by DeitY vide Notification No 33(3)/2013-IPHW dated 23.12.2013. Further, guidelines for operationalization/ implementation of PMA policy were issued by DeitY, vide Notification No. 33(7)/2015-IPHW dated 16.11.2015.

In furtherance of the Policy issued by DeitY on 10.02.12, the Department of Telecommunications (DoT) laid down the policy for providing preference to domestically manufactured telecom products in Government procurement vide DoT's Notification No 18-07/2010-IP dated 05.10.2012. Further, value addition criterion for PMA to domestically manufactured telecom products was notified by DoT vide Notification No 18-07/2010-IP dated 11.01.2017, notified in the gazette of India on 12 .01. 2017.

The Government has issued Public Procurement Order 2017 vide the Department of Industrial Policy and Promotion(DIPP)

Notification No.P-45021/2/2017-B.E-II dated 15.06.2017 to encourage "Make in India" products and to promote manufacturing and production of goods and services in India with a view to enhance Income and Employment.

(l) Export Promotion Import substitution policy is a strategy to bolster local manufacturing while import substitution is a strategy to tap the international market. The Niti Aayog Report on Make in India Strategy on Electronic Products, 2016 states that Chinese wages are increasing at the rate of 10% (in 2014 annual wage stood at Rs.5 lakh) which is rendering China uncompetitive in employment-intensive activities. Firms located in China are looking for an option to migrate and India could be one such option, if the Government provides a congenial atmosphere, like stable and certain taxation regime, basic infrastructure etc. The report has suggested dismantling the inverted duty structure and carefully negotiating the terms of free trade agreements (FTAs) to facilitate local manufacturers. While India has taken a stand not to sign the ITA-2, the global increase in demand for ICT products engendered by ITA expansion could boost global Chinese exports of ICT goods by as much as $12 billion annually.[21]

(m) Electronic Manufacturing Clusters TRAI, in its recommendations had highlighted the need for setting up telecom clusters to boost manufacturing in the telecom sector. It was recommended that ten telecom clusters be identified (**Refer recommendation at ser 20**). The recommendations stated that the Central/State Governments should make all efforts to develop infrastructural facilities in a time bound manner so that the infrastructure related disabilities are removed for the units that are located in the clusters. In October 2012, the Government notified the Electronics Manufacturing Cluster (EMC) Scheme to create and strengthen the infrastructure ecosystem for electronics

21 http://www2.itif.org/2014-ita-expansion-benefits-chinese-global-economies.pdf

manufacturing. Under the EMC Scheme, the assistance for the projects for setting up of Greenfield Electronics Manufacturing Clusters is 50% of the project cost subject to a ceiling of Rs. 50 Crore for 100 acres of land. For larger areas, pro-rata ceiling applies. At the lower end, the extent of support would be decided by the Steering Committee for Clusters (SCC) subject to the ceiling of Rs. 50 Crore. For setting up of Brownfield Electronics Manufacturing Cluster, 75% of the cost of infrastructure, subject to a ceiling of Rs.50 Crore is provided. Till March, 2017, MeitY had received 49 applications under EMC scheme, 45 applications for setting up of Greenfield EMCs and 4 applications for setting up Common Facility Centres (CFCs) in Brownfield Clusters, out these, MeitY has accorded final approval to 13 Greenfield EMCs and 2 CFCs in Brownfield Cluster and in Principal approval to 12 Greenfield EMCs and 2 CFCs in Brownfield Clusters. In addition, 11 Greenfield EMCs and 01 CFC in Brownfield EMC have been granted in-principle approval. Studies show that formation of telecom clusters is estimated to result in 15% improvement in profitability of domestic manufacturers through lower investment in common facilities, cluster financing and marketing expenses.[22] A case study by Organisation for Economic Cooperation and Development(OECD) shows the positive contribution of clusters in boosting both its production and innovation capabilities e.g. the mobile telecom cluster (referred to as Finland's Wireless Valley), which is a subset of the ICT cluster, includes many start-up companies which are niche leaders in mobile technology[23].

(n) Coastal Economic Zone India is contemplating the option of building coastal economic zones (CEZ) by setting aside a large area near the coast along the lines of special economic zones designated

22 "Realizing the potential of ICTE manufacturing in India - a Framework", CII, October 2010.

23 http://www.oecd.org/finland/41076976.pdf

in China.[24] The story of Shenzhen SEZ in China over the past two decades has contributed significantly to local manufacturing including in the electronics segment.[25] The NITI Aayog Report, 2016 has strongly recommended that such CEZ can facilitate a sound ecosystem for healthy growth of export-oriented firms. A CEZ may be up to 200 to 250 kilometres wide from the coastline, approximately equal distance in length and encompassing a modern deep dredge port. The report suggests that such CEZ must have relatively flexible labour and land-acquisition laws, easy entry and exit of firms and international best practices for custom clearances like turnaround time of ships. Within the CEZ, electronic-industry specific zones and clusters will need to be created. Currently, numerous incentives and exemptions applicable to electronic goods in and outside SEZs exist. It is however not known how much impact these incentives have had on investment and output. It is difficult to separate investors who decide in favour of investment as a result of the incentives from those who would have invested anyway even in the absence of the latter.[26] As on April 30, 2017 approvals have been granted for 421 Special Economic Zones (SEZs). Presently a majority of the SEZs operating in India are in the field of information technology and information technology enabled services (IT/ITES) and there is only a miniscule number of SEZs dedicated to telecom equipment manufacturing.[27]

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24 http://telecom.economictimes.indiatimes.com/tele-talk/how-shenzhen-style-coastal-economic-zones-can-start-a-manufacturing-revolution-in-india/1294

25 https://myweb.rollins.edu/tlairson/asiabus/sezshenzhen.html

http://china-trade-research.hktdc.com/business-news/article/Facts-and-Figures/PRD-Economic-Profile/ff/en/1/1X000000/1X06BW84.htm

26 http://niti.gov.in/writereaddata/files/document_publication/Electronics%20Policy%20Final%20Circulation.pdf

27 List of operational SEZs of India as on 30.04.2017 URL: http://www.sezindia.nic.in/writereaddata/pdf/ListofoperationalSEZs.pdf

(o) Research and Development Eight Telecom Centres of Excellence (TCOE) have been setup in Public-Private Partnership (PPP) mode. TCOE's have been created for promoting development of new technologies, generate IPR's, incubate innovations and promote entrepreneurship to position India as a global leader in telecom innovation and making India a hub of telecom equipment manufacturing.

(p) Goods and Services Tax (GST) The GST council has fixed 12 % tax rate on mobile phones. Under the new rule, all phones which are manufactured locally are likely to be costlier and imported phone may get cheaper. The downward price for the imported mobile handsets would be because they are currently attracting higher taxes than the proposed GST.

(q) Information Technology Agreements (ITA)

(i) The Information Technology Agreement (ITA) is an agreement under WTO whose participants are committed to completely eliminating tariffs on IT products covered under the agreement. ITA-1 was concluded by 29 participants at the Singapore Ministerial Conference in December 1996. Since then, the number of participants has grown to 82, representing about 97 % of world trade in IT products. India joined the ITA on 25th March 1997. 217 tariff lines were brought to 0% duty since 2005 which has resulted in acceleration of ITA imports. Under the ITA-1, each member has agreed to eliminate custom duties and other duties and charges of any kind, within the meaning of Article II, Clause 1(b) of the General Agreement on Tariff and Trade 1994.

(ii) The ITA Agreement was based on Harmonised System classification 1996. Major changes in HS Codes for telecom products have been effected in the year 2007 by World Custom Organisation (WCO). The change was primarily in the description for 8517 which was modified

as follows in the light of technological progress in the telecom sector:

"Telephone sets, including telephones for cellular networks or for other wireless networks; other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network), other than transmission or reception apparatus of heading 8443, 8525, 8527 or 8528".

(iii) The scope of heading 8517 was expanded to include all the items of wire lines as well as wireless equipments. With revision of scope of 8517, products more than those committed initially by India have now been covered under 0 % duty. This results in rise in import of these items.

(iv) WTO has been strongly advocating including several items (like HS 851761- Base Station etc) under ITA 2. Incidentally, India is not the signatory of ITA-2 that was signed by the 24 members countries on 16 December, 2015 hence items covered under ITA-2 are treated differently by India.

Question

Q.6 Are the current fiscal incentives sufficient to promote the local telecom manufacturing? Please suggest the fiscal incentives required to be instituted along with the suitable mechanism for implementation of these incentives?

Q.7 Are there any issues under ITA which need to be addressed for making the local Telecom Manufacturing more competitive and robust

Q.8 Should an export oriented/promotion approach be adopted in the telecom equipment manufacturing sector? If yes, Please suggest the steps to be taken to create suitable environment to attract foreign investment players for setting up establishments which in turn can result in technology dissemination, innovation, generation of jobs, skilled labour force, etc.?

Q.9 Does the existing PMA policy require any change? If yes, then please provide complete details with justifications.

Q.10 Any other relevant issues that needs to be addressed to encourage local telecom manufacturing in our country.

Chapter IV

Issues for Consultation

The present consultation paper is aimed at identifying the bottlenecks for the Local Telecom Manufacturing Industry with a view to recommend mechanisms/policies and measures that would facilitate in making India a global hub of telecom manufacturing. It may please be noted that answers/ comments to the issues given below should be supported with justification. The stakeholders may also comment on any other issues related to Local Telecom Manufacturing along with all necessary details.

Q.1 Large number of initiatives have been taken by the government to promote electronics manufacturing, while these initiatives have succeeded in attracting significant investments in other sectors like LED, consumer electronics, mobile handsets, automotive electronics etc, they have failed to attract investments in telecom equipment sector e.g PMA has worked very effectively in LED sector but did not work so effectively in telecom. Please enumerate the reasons with justifications for the poor performance of local telecom manufacturing industry inspite of numerous initiatives by the government/industry.

Q.2 what policy measures are required to be instituted to boost Innovation and productivity of local Telecom manufacturing in our country? Please provide details in terms of Short-Term, Medium-Term and Long-Term objectives.

Q.3 Are the existing patent laws in India sufficient to address the issues of local manufacturers? If No, then suggest the measures to be adopted and amendments that need to be incorporated for supporting the local telecom manufacturing industry.

Q.4 Is the existing mechanism of Standardisation, Certification and Testing of Telecom Equipments adequate to support the local telecom manufacturing? If not, then please list out the short-comings and

suggest a framework for Standardisation, Certification and Testing of Telecom Equipments.

Q.5 Please suggest a dispute resolution mechanism for determination of royalty distribution on FRAND (Fair Reasonable and Non Discriminatory) basis.

Q.6 Are the current fiscal incentives sufficient to promote the local telecom manufacturing? Please suggest the fiscal incentives required to be instituted along with the suitable mechanism for implementation of these incentives?

Q.7 Are there any issues under ITA which need to be addressed for making the local Telecom Manufacturing more competitive and robust

Q.8 Should an export oriented/promotion approach be adopted in the telecom equipment manufacturing sector? If yes, Please suggest the steps to be taken to create suitable environment to attract foreign investment players for setting up establishments which in turn can result in technology dissemination, innovation, generation of jobs, skilled labour force, etc.?

Q.9 Does the existing PMA policy require any change? If yes, then please provide complete details with justifications.

Q.10 Any other relevant issues that needs to be addressed to encourage local telecom manufacturing in our country.

Appendix I

(Ref Chapter I, para 5,)

Summary of Recommendations by TRAI in 2011 with Present Status

Rationale and Objectives

1. The Telecom Equipment Manufacturing policy should be an integral and a significant part of the New Telecom Policy.

Status: The New Telecom Policy is being prepared. [28]

2. The proposed policy should have well defined objectives.

Suggested Measures for promotion of Domestic Manufacturing

3. Preferential market access should be provided to the domestic manufactured products (comprising both Indian Manufactured Products and Indian Products) in procurement by the Government and Government Licensees (service providers both public and private), subject to the value additions proposed for the corresponding years.

Status: Some action has been taken by notifying certain Indian Products (23 items) under the PMA. The existing PMA framework continues to be applicable only to ministries/departments (except Ministry of Defence) and their agencies for electronics product purchased for governmental purposes and not with a view of commercial resale/ sale.[29]

4. Government or government licensee (service providers - both public and private) would be responsible for meeting the market access criterion even if the installation, maintenance and operations are outsourced.

Status: Action awaited.

5. The Department of Telecom (DoT) should suitably modify the relevant clauses in the UAS Licences issued/to be issued and the Unified Licence to

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28 *"DoT set to work on new telecom policy from April 2017"*, Livemint, Nov 02 2016, Available at: http://www.livemint.com/Industry/aGkFVIdpiXPOP4oFMdCGuI/DoT-set-to-work-on-new-telecom-policy-from-April-2017.html

29 *"Value addition criterion for Preference to domestically manufactured telecom products in Government procurement with respect to Telecom Products notified under the Preferential Market Access (PMA) policy dated 5th October 2012"*, Available at: http://meity.gov.in/writereaddata/files/revised_products-DoTdated%2011_01_2017.pdf

include the stipulations of percentages of market access, value addition and auditing in respect of domestic products.

Status: Action awaited.

6. To supply under the market access stipulation, the domestic manufacturer must submit a certificate from its statutory auditor to the effect that the prescribed value addition condition has been met. This would be test audited by the DoT or an agency authorised by DoT.

Status: Under the revised PMA Guidelines (November 16, 2015) the domestic manufacturer shall be required to provide a value addition certificate on half-yearly basis (Sep 30 and Mar 31), duly certified by the Statutory Auditors of the domestic manufacturer, that the claims of value-addition made for the product during the preceding 6 months are in accordance with the Policy. Such certificate shall be filed within 60 days of commencement of each half year, to the concerned Ministry / Department.[30]

7. The service provider procuring more than 10% of the market access requirement of telecom equipment in the form of Indian Manufactured Products should get a rebate equivalent to 10% of its licence fee for that year and the service provider procuring more than 20% of its telecom equipment requirement in the form of Indian Manufactured Products should get a rebate equivalent to 20% of its licence fee for that year. For the purpose of this recommendation licence fee does not include USOF (Universal Service Obligation Fund) contribution of 5% of AGR.

Status: Action awaited.

8. If a service provider is not able to meet the criteria of market access then it will deposit an amount equal to 5% of the shortfall in the value of the equipment in the Telecom Research fund or the Telecom Equipment Manufacturing fund.

Status: Action awaited.

9. A Telecom Equipment Manufacturing Organisation (TEMO) should be set up to coordinate between manufacturers and service providers for proper implementation of the telecom equipment manufacturing policy.

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30 *"Guidelines for providing preference to domestically manufactured electronic products in government procurement"*, MeitY, Available at: http://meity.gov.in/writereaddata/files/R_G_U_16_11_2015.pdf

Status: Action awaited.

10. For the purpose of benefits being recommended for domestic manufactured product companies with annual turnover less than Rs 1000 crore, only those domestic manufacturing companies should be eligible in which no other manufacturer having annual turnover of Rs 1000 crore or more holds substantial equity. Substantial equity herein will mean equity of 10% or more.

Status: Action awaited.

11. All domestic telecom equipment manufacturers producing Indian Products or Indian manufactured products and having an annual turnover of less than Rs 1000 crore, should get access to debt finance for capital and working capital for a period of 5 years on subsidized terms. The extent of subsidy will be 6% for the Indian Product Manufacturers and 3% for producers of Indian Manufactured Products. The Government should formulate a subsidy scheme for the purpose and the subsidy grants can be channelized for disbursement directly to the lending banks.

Status: Action awaited. Currently, there is an Interest Equalisation Scheme which provides interest subsidy of 3% for export of notified telecom equipments.[31]

12. Set up an International standard Testing and Certification Agency by way of converting TEC into an autonomous agency for testing all products Manufactured in India or imported from other countries. This agency should be headed by a person of eminence from the relevant field and will be managed by an independent Board drawn from technical members of the Government, industry and academia.

Status: Action awaited. However, a proposal to implement mandatory testing and certification of telecom equipment, prior to sale/import/use in

31 Press Information Bureau, "Interest Equalisation Scheme on Pre & Post Shipment Rupee Export Credit with effect from 1st April, 2015 for five years", Available at: http://pib.nic.in/newsite/PrintRelease.aspx?relid=131591

the country, is under consideration in Department of Telecommunications (DoT).[32]

13. To remove the comparative tax disadvantage on domestic manufactured products, the Authority recommends that the total incidence of Excise Duty and VAT on domestic manufactured products should be limited to 12%. In addition, as in the case of imported equipment, there should be no CST on domestic manufactured products or, alternatively, a tax equivalent to 2% should be imposed on imported products.

Status: Excise duty and VAT have been subsumed into GST. GST rate for telephones for cellular networks or for other wireless networks and parts for their manufacture has been fixed at 12%. Further, the GST rate is fixed at 18% for telephone sets; other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network).[33] Under the GST, all imports shall be deemed as inter-state supplies and accordingly integrated tax shall be levied in addition to the applicable custom duties. The integrated tax on goods shall be in addition to the applicable Basic Customs Duty (BCD) which is levied as per the Customs Tariff Act.[34]

14. A special incentive should be provided to producers of domestic manufactured products with total annual turnover less than Rs 1000 crore, by deferring the payment of Excise/Sales Tax/VAT/GST by them for a period of 5 years at a nominal rate of interest.

Status: Excise Duty, Sales Tax have been subsumed into GST. Presently under the GST, no such deferment benefit has been allowed.

15. Income Tax holiday may be given for 10 years, on the lines of that given to the software industry, for producers of domestic manufactured telecom products, whose total annual turnover is less than Rs 1000 cr. They should also be exempted from payment of Minimum Alternative Tax.

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32 Notice for Stakeholders' comments on the "Procedure for Certification of Telecommunication Equipment", Telecom Engineering Center. Available at: http://tec.gov.in/pdf/Whatsnew/DFC%20For%20Stakeholders.pdf

33 "Notification No./2017-Central Tax (Rate)", Ministry of Finance, Available at: http://www.cbec.gov.in/resources//htdocs-cbec/gst/Notification-for-CGST-rate-Schedule.pdf

34 Section 5 and 7 of The Integrated Goods and Services Tax Act, 2017.

Status: Action awaited.

16. For the mobile handset industry, as in the case of telecom network equipment manufacturing, comparative tax disadvantages should be removed for domestically manufactured handsets by reducing VAT and by placing a tax equivalent to CST on imported products.

Status: VAT has been subsumed into GST. GST rate for telephones for cellular networks or for other wireless networks and parts for their manufacture has been fixed at 12%. Further, the GST rate is fixed at 18% for telephone sets; other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network).[35]

17. As an exceptional measure, to make it easier for domestic manufacturers to commence domestic production of mobile handsets, exemption from countervailing duties may be granted on import of capital equipment and Excise duty on domestically sourced capital goods for the handset manufacturing industry.

Status: Excise Duty and Countervailing Duties have been subsumed into GST.

18. All custom clearances for the import of raw materials and components for domestic manufacture of telecom equipment in India should be completed expeditiously and preferably within 7 days of application.

Status: Central Board of Customs and Excise (CBEC) has launched 24x7 Customs Clearance for specified imports, namely, goods covered under 'facilitated' Bills of Entry. To facilitate trade and to simplify procedures, number of mandatory documents has been reduced. To ensure expeditious clearance of EXIM (Export-Import) goods, a high level administrative Committee i.e. 'Customs Clearance Facilitation Committee' (CCFC) has been put in place at every major Customs seaport and airport under the chairmanship of Chief Commissioner of Customs/Commissioner of

35 "Notification No./2017-Central Tax (Rate)", Ministry of Finance, Available at: http://www.cbec.gov.in/resources//htdocs-cbec/gst/Notification-for-CGST-rate-Schedule.pdf

Customs.[36] CBEC has also implemented Integrated Declaration under the Indian Customs Single Window. Under this all information required for import clearance by the concerned government agencies has been incorporated into the electronic format of the Bill of Entry.[37]

19. The requirement for "provenness" be waived for domestic manufactured products provided that the turnover of the domestic manufacturer is less than Rs 1000 crore and provided that the domestic product meets the requirement of quality, technical specifications and standards and are certified by the testing and certification organisation. In such a case the qualifying company would be given order upto 10% by quantity.

Status: Action awaited. The PMA policy states that tender conditions need to ensure that domestically manufactured electronic products are encouraged and are not subject to restrictive mandatory requirement of prior experience. However, procuring Ministry/ Department/ Agency may incorporate such stipulations as may be considered necessary to satisfy themselves of the production capability and product quality of the domestic manufacturer.[38]

20. Ten telecom clusters be identified immediately. The Central/State Governments should make all efforts to develop infrastructural facilities in a time bound manner so that the infrastructure related disabilities are removed for the units that are located in the clusters.

Status: In October 2012, the Government notified the Electronics Manufacturing Cluster (EMC) Scheme to create and strengthen the infrastructure ecosystem for electronics manufacturing. Till March, 2017, MeitY had received 49 applications under EMC scheme, 45 applications for setting up of Greenfield EMCs and 4 applications for setting up Common Facility Centres (CFCs) in Brownfield Clusters, out these, MeitY has accorded final approval to 13 Greenfield EMCs and 2 CFCs in Brownfield

36 "Ease of Doing Business", Central Board of Excise and Customs, Available at: http://www.cbec.gov.in/htdocs-cbec/ease_of_doing_business/customs

37 "Circular - Implementing Integrated Declaration under the Indian Customs Single Window", Ministry of Finance, Available at: https://www.icegate.gov.in/Download/circ10-2016cs.pdf

38 "Preference for Domestically Manufactured Electronic Goods (PMA)" MeitY, Available at: http://meity.gov.in/esdm/pma

Cluster and in Principal approval to 12 Greenfield EMCs and 2 CFCs in Brownfield Clusters.

21. TCIL(Telecommunications Consultants India Limited)may be strengthened as a system integrator for installing and operating networks in other countries using telecom equipment sourced from India. Further, to enable more autonomy and efficiency, TCIL may be disinvested such that the Government holds up to 49% equity.

Status: Action awaited.

22. India should use its strengths in software to enter into bilateral trade agreements with other countries which results in India exporting telecom equipment in lieu of raw materials like tin and copper.

Promoting Manufacture of Indian Products

23. Preferential market access may be given for Indian products as listed in the recommendations.

Status: Some action has been taken (Ref status of Recommendation no. 3).

24. If a service provider is not able to meet the criteria of market access then it will deposit an amount equal to 10% of the shortfall in the value of the equipment in the Telecom Research fund or the Telecom Equipment Manufacturing fund.

Status: Action awaited

25. The focus areas for the R&D fund should be the following:

(a) Next Generation Networks consisting of technologies for core and access, core and edge routers, Soft switches, Ethernet Switches, xDSL etc.

(b) Next Generation Mobile Networks: LTE Advanced, IP Multimedia systems, cognitive radio, software defined radio, WiMax, distributed antenna systems, backhaul technologies

(c) Fiber optic technologies

(d) Terminal Devices – modems, routers, dongles, data cards, mobile handsets, wireless access points, mobile handsets etc.

(e) Security and surveillance equipment, sensors

(f) Non-conventional energy for telecom

(g) Any other area considered commercially relevant in future

26. A Telecom Research and Development Park should be established with the purpose of facilitating research, innovation, IPR creation and commercialization for fast and sustainable growth of the telecom industry. This park should be functional by December 2013.

Status: Eight Telecom Centres of Excellence (TCOE) have been setup in Public-Private Partnership (PPP) mode. TCOE's have been created for promoting development of new technologies, generate IPR's, incubate innovations and promote entrepreneurship to position India as a global leader in telecom innovation and making India a hub of telecom equipment manufacturing.

27. TRDC should set up Telecom Research and Development Fund (TRDF) with a corpus of Rs 10,000 crore which should be invested in secure deposits and bonds and the interest accruals should be used for financing R&D projects.

Status: The government had decided to establish a single EDF (Electronic Development Fund) that would cater for the financial requirements for R&D. The EDF has been setup as a "Fund of Funds" to participate in "Daughter Funds" which will provide risk capital to companies developing new technologies in the area of electronics, nano-electronics and IT. The EDF policy was approved by the cabinet on 10.12.2014, notified on 09.01.2015 and launched on 15.02.2016.Twenty two daughter funds have been selected for investment through EDF. The cumulative commitment of EDF in June 2017 was Rs 1227 Crore.

28. The R&D fund should be utilised for research, IPR creation and development activities. The fund should give soft-loans, grants, reimbursement of R&D expenses, IPR filing and renewal fee.

Status: Being catered under the EDF as stated above.

29. The selection process for the projects to be financed should give due weightage to the potential of the project for resulting into successful IPR and evolving into successful commercial products that would help the country in increasingly manufacturing indigenously developed telecom equipment.

Status: Being addressed through TCOE.

30. The R&D fund should be able to accept the royalties for the commercialised products, interest on soft-loans, contributions and any other accruals related to its activities. The royalty should be proportional to the funding made available to a research project.

Status: Being addressed through TCOE and EDF.

31. A Telecom Research and Development Corporation (TRDC) should be set up and an amount of Rs 15,000 crore may be made available to this Corporation for the following purpose:

(a) Setting up of an R&D fund.

(b) Establishing a Research and Development Park

Status: Being addressed through TCOE and EDF

32 The fund should be managed by a special autonomous board drawn from industry, academia and government and headed by a person of eminence from the field of research in technology.

Status: Being addressed through TCOE and EDF

33. The duties and taxes should be structured to promote research in telecom. The proposed TRDC will make a recommendation in this regard.

Status: Being addressed through TCOE and EDF

34. Create a Telecom Manufacturing Fund (TMF) for providing venture capital to indigenous manufacturing in the form equity and soft loans for supporting pre and post commercialisation product development and brand creation. The TMF would be managed by a corporate body and headed by a person of eminence in the field of Banking/ venture capital finance.

Status: No specific Telecom Manufacturing Fund (TMF) has been created. However, Electronic Development Fund (EDF) policy created by Meity will cover this. The objective of the policy says:[39]

"The objective of the EDF policy is to support Daughter Funds including early stage Angel Funds and Venture Funds in the area of System Design and Manufacturing, Nano-electronics and IT. The supported Daughter Funds will

39 "Electronics Development Fund Policy", MeitY, Available at: http://meity.gov.in/DeitY_e-book/edf-book/download/EDF_Booklet.pdf

promote innovation, R&D and product development within the country in the specified fields of ESDM, nanoelectronics and IT."

35. The manufacturing fund should be an open fund with contribution from the Government and other bodies like finance corporations. The Government would initially provide an amount of Rs 3000 crore to establish TMF and start financing activities.

Status: Ref status of recommendation 34

36. An autonomous Telecom Standards Organization (TSO) be set up for carrying out all works relating to telecom standards. It will also have the responsibility of driving international standards and drawing up specifications of the equipment to be used in the Indian telecom network. The governing board of the organization should consist of experts from the academia, research centres, industry and the Government and the organisation should be headed by a person of eminence in the area of technical standardization.

Status: Implemented by creating Telecommunications Standards Development Society, India (TSDSI). TSDSI was set up on 7th January 2014, with an objective of contributing to the next generation telecom standards and drive eco-system of IP creation.[40]

Promoting component manufacturing

37. A cutting edge technology fab facility should be set up with Government funding support in the form of equity, grants and soft loans. The Government should provide upto 75% funding of which upto 49% should be in the form of equity and remaining as debt.

Status: Action awaited, though intent of the Government has been reported.[41]

38. Set up a second fab unit for manufacture of a variety of general purpose chips that could be used in a large number of equipment with

40 "Telecommunications Standards Development Society, India - Brochure", Available at: http://www.tsdsi.org/media/attachment/TSDSI_Brochure_20161109.pdf

41 For example, see http://economictimes.indiatimes.com/industry/cons-products/electronics/government-to-play-active-role-in-making-india-a-global-semiconductor-hub/articleshow/57261190.cms

government funding support in the form of equity, grants and soft loans. The Government should provide upto 50% out of which upto 49% should be in the form of equity and remaining as debt.

Status: Refer to status of recommendation 37.

39. The following are recommended regarding taxes and duties on domestically manufactured components:

(a) Taxes and duties should be so structured that they are not disadvantaged vis-à-vis imported components.

(b) Total of Excise and VAT should be limited to 12%.

Status: VAT has been subsumed into GST. GST rate for telephones for cellular networks or for other wireless networks and parts for their manufacture has been fixed at 12%. Further, the GST rate is fixed at 18% for telephone sets; other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network).[42]

(c) Component manufacturing companies including fab and fables manufacture should be exempt from Minimum Alternative Tax (MAT).

Status: Action awaited.

40. The taxes and duties on the components should be lower than that on the finished products.

Status: Partially Implemented. Government has imposed 10% BCD on mobile handsets and base stations (Chapter 85 - Tariff Item- 8517 12 10, 8517 12 90 and 8517 61 100) but not increased the BCD on inputs to be used for manufacturing base stations.[43] This is likely to help local manufacturing.

41. The dual use imported inputs required for manufacture of telecom equipment should not be subject to bond payment if the importer can indisputably prove use for telecom product manufacture.

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42 *"Notification No./2017-Central Tax (Rate)",* Ministry of Finance, Available at: http://www.cbec.gov.in/resources//htdocs-cbec/gst/Notification-for-CGST-rate-Schedule.pdf.

43 "Notification No. 56/2017 – Customs", June 30, 2017, Ministry of Finance, Available at: http://www.cbec.gov.in/resources//htdocs-cbec/customs/cs-act/notifications/notfns-2017/cs-tarr2017/cs56-2017.pdf.