



AN EXAMINATION OF PERFORMANCE AND CONTRIBUTION OF TELECOM EQUIPMENT INDUSTRY IN INDIA'S GDP

Dr. G. V. Vijayasri, (M.A., M.B.A., Ph. D), Assistant Professor, Department of Economics, AKNU MSN
Campus, Kakinada, Andhra Pradesh, India.

ABSTRACT

The Telecom Equipments Industry allocate in India's GDP has been broadly studied. The present data based on secondary sources. The Telecom Equipments sector has witnessed the highest distribute in the total production of electronic hardware in India. It also examined the trends in Indian Telecom Equipments Production and Exports and share in India's Gross Domestic Product (GDP). The growth rate of Telecom Equipments Production is the highest in the year 2017-18 i.e., 66.66 percent and the lowest growth rate is recorded in the year 2014-15 i.e., -47.37. The contribution of Telecom Equipments exports in GDP of India is increasing from the years 2011-12 to 2020-21 i.e., 0.208 per cent to 0.0242 per cent, even then there are lot of variations in the share of Telecom Equipments exports in GDP. The government, in an effort to support manufacture of Telecom equipments in India has altered the tariff structure significantly. It has been convenient that the IT sector is not only contributes considerably to export earnings and GDP but also emerges as a foremost foundation of employment generation in the country.

KEY WORDS: Information Technology, Electronic Hardware, Telecom Equipments, Production, Production for Domestic Use, Exports, Direction and GDP.

INTRODUCTION

Telecommunication has been playing a essential role in country's economic growth. It is the moral fibre of many industries, including e-commerce, media and entertainment, finance, information and technology (IT), healthcare, transportation, and logistics. The division facilitates seamless movement of data worldwide through wired or wireless channels and extensively influences economic progress. The telecom market is persistently evolving with integration of cutting-edge technologies over the years. This has widened the coverage of telecom services globally and made them an essential part of the daily lives of consumers.

Telecommunication equipment plays a significant role in enabling communication by transmitting, receiving, and giving out information electronically, allowing for the exchange of data over long distances and forming the moral fibre of modern communication infrastructure; effectively, it facilitates communication among people through devices like phones, computers, and networks by sending and receiving signals across diverse mediums like wires and wireless waves.

OBJECTIVES

1. To appraise the percentage share of Telecom Equipments production, Domestic use and Exports in production, Domestic use and Exports of Information Technology and Electronic Hardware.
2. To analyse the Telecom Equipments Production in GDP of India.
3. To examine the Telecom Equipments Exports, Direction and Share in GDP of India.
4. To observe the Telecom Equipments Production for Domestic use in India's GDP.

DATA SOURCES AND METHODOLOGY

The secondary data is used to explore contribution of Telecom Equipments industry in GDP of India. The main sources of imitative information are Statistical Year Books of Electronic and Computer Software Export Promotion Council of India, Ministry of Electronics and Information Technology and National Association of Software and Services Company (NASSCOM) Reports. Statistical tools like averages, percentages, growth rates, Average Annual Growth rate and Compound Annual Growth Rate are considered to analyse the data.

TELECOM EQUIPMENT INDUSTRY IN INDIA

Presently, India is the world's second-largest telecommunications market with a total telephone subscriber base of 1,173.89 million in June 2023 and has registered muscular growth in the last decade. The moderate and reformist policies of the Government have been influential along with strong consumer command in the rapid growth of the Indian telecom sector. The Government has enabled easy market admittance to telecom equipment and a fair and proactive regulatory structure that has ensured the availability of telecom services to consumers at affordable prices. The deregulation of FDI norms has made the sector one of the fastest-growing and the top five employment prospect generator in the country. The exponential growth witnessed by the telecom sector in the past decade has led to the enlargement of the telecom equipment manufacturing and other following industries. With the initiation of next-generation technologies, 5G and Broadband Wireless Access Services rolled out by operators, the demand for telecom equipment has augmented. In an effort to benefit from this opportunity, the government and policy makers are focusing on just beginning the domestic manufacturing industry. The Indian equipment industrialized sector has come a long way in the past few years.

Telecommunications equipment (also telecoms equipment or communications equipment) is a kind of hardware which is worn for the purposes of telecommunications. Since the 1990s the frontier between telecoms equipment and IT hardware has become distorted as a result of the growth of the internet and its increasing role in the transfer of telecoms data. There were various factors at play to see such a drastic increase in usage. Firstly, the digitization drive India was undergoing helped migrate business and other

communications seamlessly. This meant that a readily available alternative was present to be effectively utilized. Second, the newfound abundance of time led to increased consumption of media content via OTT, audio podcasts and online gaming.

Table -1

Telecom Equipments Production, Share in GDP of India (Rs. Crore)

Years	GDP of India	Telecom Equipments Production	Growth rate	Share of Telecom Equipments Production in GDP (%)	% of Telecom Equipments Production in IT Production	% of Telecom Equipments Production in Electronic Hardware Production
2011-12	8736329	40500	---	0.464	7.21	28.26
2012-13	9213017	55000	35.802	0.597	8.00	30.99
2013-14	9801370	57000	3.6364	0.582	6.97	29.07
2014-15	10527674	30000	-47.37	0.285	3.25	15.05
2015-16	11386145	58000	93.333	0.509	5.40	25.32
2016-17	12196006	90000	55.172	0.738	7.46	29.82
2017-18	13010843	150000	66.667	1.153	11.11	36.99
2018-19	14003316	180000	20	1.285	11.20	38.46
2019-20	14569268	225000	25	1.544	12.34	41.17
2020-21	13512740	230000	2.222	1.702	11.98	45.30
		CAGR=21.28 %	AAGR=28.27 %			

Source: Electronics and Software Export Promotion Council, Statistical Year book, various issues.

The table 1 indicates the Telecom Equipment Production, growth rate and share in GDP of India. The table shows the Production of Telecom Equipment was Rs. 40500 crore in 2011-12 and increased to Rs. 57000 crore in 2013-14. It decreased in the year 2014-15 to Rs. 30000 crore, while in the next year, it further increased to Rs.230000 crore in 2020-21. It's clear from the table that the contribution of Telecom Equipment production in GDP of India is increasing from the years 2011-12 to 2012-13 i.e., 0.464 percent to 0.597 per cent. Firstly, the contribution of Telecom Equipment production in GDP is decreased from the 0.582 percent in 2013-14 to 0.285 percent in 2014-15. The growth rate of Telecom Equipment Production is the highest in the year 2017-18 i.e., 66.66 percent and the lowest growth rate is recorded in the year 2014-15 i.e., -47.37. On an average Annual Growth Rate is 28.27 per cent and Compound Annual Growth Rate is 21.28 per cent.

Table-2

Telecom Equipments for Domestic Use, Share in GDP of India (Rs. Crore)

Years	GDP of India	Telecom Equipments Domestic Use	Growth rate	Share of Telecom Equipments Domestic Use in GDP (%)	% of Telecom Equipments Domestic Use in IT Domestic Use	% of Telecom Equipments Production in Electronic Hardware Domestic Use
2011-12	8736329	22300	---	0.255	11.59	22.15
2012-13	9213017	34100	52.91	0.37	14.32	25.54
2013-14	9801370	38467	12.81	0.392	14.54	25.68
2014-15	10527674	23442	-39.1	0.223	7.98	14.42
2015-16	11386145	52240	122.8	0.459	15.57	27.24
2016-17	12196006	83057	58.99	0.681	19.56	31.50
2017-18	13010843	142251	71.27	1.093	26.48	38.83
2018-19	14003316	160961	13.15	1.149	26.61	39.35
2019-20	14569268	190958	18.64	1.311	25.93	40.94
2020-21	13512740	197318	3.331	1.46	26.10	45.98
		CAGR=27.41 %	AAGR=34.98 %			

Source: Electronics and Software Export Promotion Council, Statistical Year book, various issues.

The table 2 shows the Telecom Equipments production for domestic use, growth rate and share in GDP of India. The table reveals the domestic use of Telecom Equipments was Rs. 22300 crore in 2011-12 and increased to Rs. 38467crore in 2013-14. It decreased in the next year to Rs.23442 crore, again it was increased from Rs. 52240 crore in 2015-16 to Rs. 197318 crore in 2020-21. It's clear from the table that the contribution of Telecom Equipments production for domestic use in GDP of India is increasing from the years 2011-12 to 2020-21 i.e., 0.255 percent to 1.46 per cent, even then there are lot of variations in the share of domestic use in GDP. The growth rate of Telecom Equipments production for domestic use is the highest in the year 2015-16 i.e., 122.8 percent and the lowest growth rate is recorded in the year 2014-15 i.e.,-39.1. On an average Annual Growth Rate is 34.98 per cent and Compound Annual Growth Rate is 27.41 per cent.

Table-3

Telecom Equipments Exports, Share in GDP of India (Rs. Crore)

Years	GDP of India	Telecom Equipments Exports	Growth rate	Share of Telecom Equipments Exports in GDP (%)	% of Telecom Equipments Exports in IT Exports	% of Telecom Equipments Exports in Electronic Hardware Exports
2011-12	8736329	18200	---	0.208	4.93	42.70
2012-13	9213017	20900	14.835	0.227	4.65	47.50
2013-14	9801370	18533	-11.33	0.189	3.35	40.03
2014-15	10527674	6558	-64.61	0.062	1.04	17.84
2015-16	11386145	5760	-12.17	0.051	0.78	15.43
2016-17	12196006	6943	20.538	0.057	0.89	18.21
2017-18	13010843	7749	11.609	0.06	0.95	19.80
2018-19	14003316	19039	145.7	0.136	1.90	32.29
2019-20	14569268	34042	78.801	0.234	3.13	42.54
2020-21	13512740	32682	-3.995	0.242	2.81	41.57
		CAGR=6.72 %	AAGR=19.93 %			

Source: Electronics and Software Export Promotion Council, Statistical Year book, various issues.

The table 3 indicates the Telecom Equipments Exports, growth rate and share in GDP of India. The table shows the Exports of Telecom Equipments was Rs. 18200 crore in 2011-12 and increased to Rs. 20900 crore in 2012-13. It decreased in the year 2013-14 to Rs. 18533 crore to Rs. 7749 crore in 2017-18, while in the next year, it further increased to Rs.34042 crore in 2019-20 and it decreased to Rs. 32682 crore in 2020-21. It's clear from the table that the contribution of Telecom Equipments exports in GDP of India is increasing from the years 2011-12 to 2012-13 i.e., 0.208 per cent to 0.227 per cent, even then there are lot of variations in the share of Telecom Equipments exports in GDP. Firstly, the contribution of Telecom Equipments exports in GDP is decreased from the 0.189 percent in 2013-14 to 0.051 percent in 2015-16. The growth rate of Telecom Equipments Exports is the highest in the year 2019-20 i.e., 78.8 percent and the lowest growth rate is recorded in the year 2014-15 i.e.,-64.61. On an average Annual Growth Rate is 19.93 per cent and Compound Annual Growth Rate is 6.72 per cent.

The table-3 also shows the percentage of Telecom Equipments exports in total IT and Electronic Hardware Exports. The table explain the percentage share of Telecom Equipments exports in IT Exports was 4.93 per cent in 2011-12 and decreased to 0.78 per cent in 2015-16. Whereas, the percentage of Telecom Equipments exports in Electronic Hardware Exports increased tremendously from 42.70 percent in 2011-12 to 47.50 per cent in 2012-13, though declined to 15.43 per cent in 2015-16.

Figure1

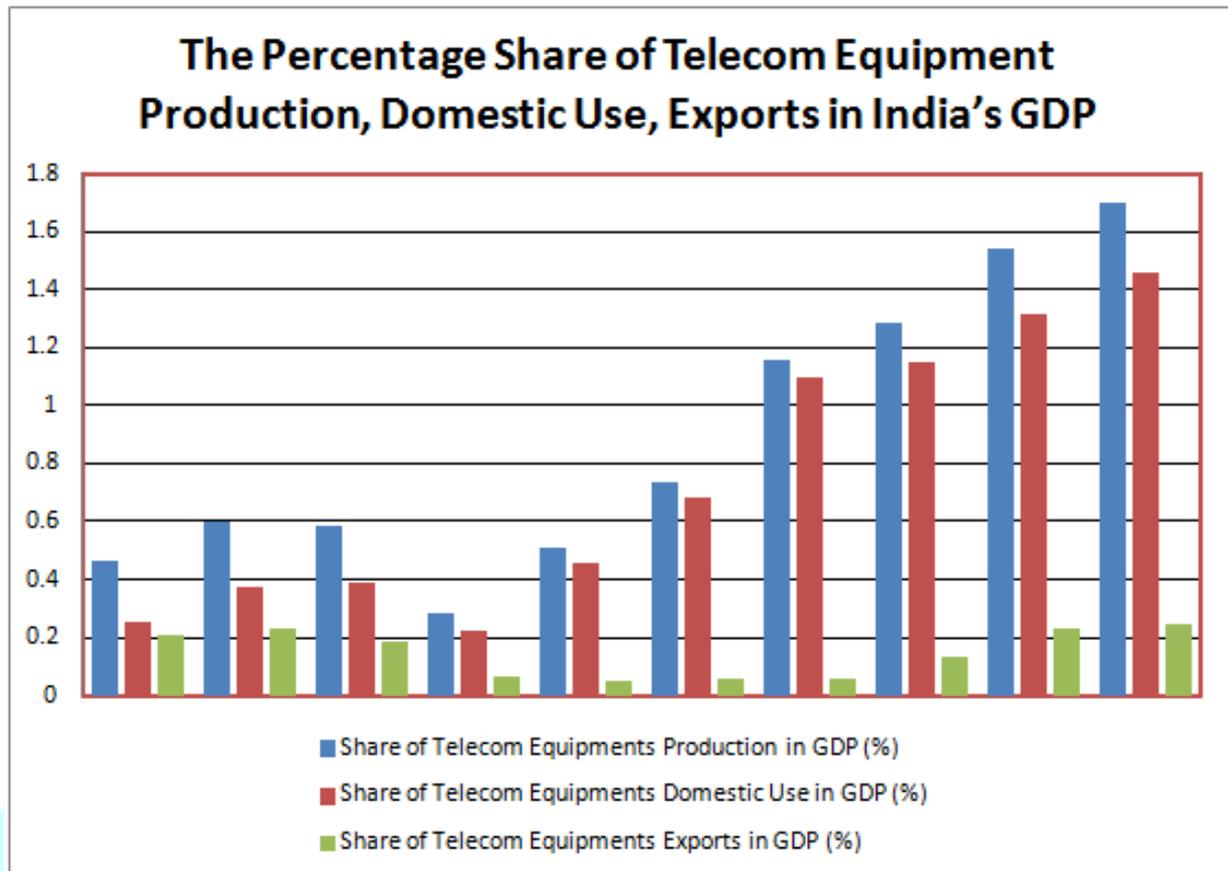


Table-4

Direction of Telecom Equipment Exports in India (Rs. Crores)

Destination	2011-12	2015-16	2016-17	2017-18	2019-20	2020-21
North America	2100 (11.54)	836 (14.51)	1232 (17.74)	1081 (13.95)	2150 (6.32)	3470 (10.62)
Singapore, Hongkong & other South Asian Countries	2800 (15.38)	1241 (21.55)	1940 (27.94)	1536 (19.82)	2540 (7.46)	3850 (11.78)
Middle East countries	5100 (28.02)	1590 (27.60)	1379 (19.86)	1464 (18.89)	16322 (47.95)	8650 (26.47)
Europe (EU countries)	2400 (13.19)	1045 (18.14)	1243 (17.90)	1819 (23.47)	5230 (15.36)	12000 (36.72)
African countries	3480 (19.12)	209 (3.63)	207 (2.98)	376 (4.85)	2250 (6.61)	1110 (3.40)
Japan Korea other Far East Countries	360 (1.98)	624 (10.83)	716 (10.31)	1160 (14.97)	780 (2.29)	922 (2.82)
Latin America	581 (3.19)	56 (0.97)	93 (1.34)	150 (1.94)	330 (0.97)	218 (0.67)

Russia and C.I.S countries	1035 (5.69)	140 (2.43)	53 (0.76)	75 (0.97)	4400 (12.93)	2186 (6.69)
Europe (Non EU Countries)	294 (1.62)	9 (0.16)	17 (0.24)	56 (0.72)	---	---
Australia & Other Ocean Countries	50 (0.27)	10 (0.17)	63 (0.91)	32 (0.41)	40 (0.12)	276 (0.84)
Total	18200	5760	6943	7749	34042	32682

Source: Electronics and Software Export Promotion Council, Statistical Year book, various issues.

Note: Figures in brackets show the percentage of Sectoral Total.

Table 4 indicates that the direction of trade of telecom equipments Exports from India. It is clear from the table that the exports of India to Singapore, Hongkong & Other South Asian Countries ranged between 15.8 per cent in 2011-12 and 27.94 per cent in 2016-17, to EU countries ranged between 13.19 per cent in 2011-12 and 36.72 per cent in 2020-21, to North America range between 6.32 per cent in 2019-20 and 17.74 per cent in 2016-17. The exports of India to Australia & Other Ocean Countries ranged between 0.12 per cent in 2019-20 and 0.91 per cent in 2016-17. Middle East Countries have the highest share (Rs.12000 Crores) of exports from India in 2020-21. It implies that the share of EU Countries(36.72 per cent) is highest followed by North America, Singapore, Hongkong & other South Asian Countries, Middle East countries, Japan Korea other Far East Countries and Russia and C.I.S countries to the percentage of 10.68, 11.78, 26.47, 2.87 and 6.69 respectively. The share of exports to other countries is considerably low.

Table-5

Percentage share of India's GDP in Direction of Telecom Equipment Exports in India

Destination	2011-12	2015-16	2016-17	2017-18	2019-20	2020-21
North America	0.024	0.007	0.010	0.008	0.015	0.026
Singapore, Hongkong & other South Asian Countries	0.032	0.011	0.016	0.012	0.017	0.028
Middle East countries	0.058	0.014	0.011	0.011	0.112	0.064
Europe (EU countries)	0.027	0.009	0.010	0.014	0.036	0.089
African countries	0.040	0.002	0.002	0.003	0.015	0.008
Japan Korea other Far East Countries	0.004	0.005	0.006	0.009	0.005	0.007
Latin America	0.007	0.0005	0.001	0.001	0.002	0.002
Russia and C.I.S	0.012	0.001	0.000	0.001	0.030	0.016

countries						
Europe (Non EU Countries)	0.003	0.000	0.000	0.000	0.000	0.000
Australia & Other Ocean Countries	0.001	0.000	0.001	0.000	0.000	0.002

Table 5 shows that the Percentage shares of India's GDP in Direction of Telecom Equipment Exports in India. It is clear from the table that the percentage share of India's GDP from exports of India to Singapore, Hongkong & Other South Asian Countries ranged between 0.032 per cent in 2011-12 and 0.028 per cent in 2020-21, to EU countries ranged between 0.027 per cent in 2011-12 and 0.089 per cent in 2020-21, to North America range between 0.007per cent in 2015-16 and 0.026 per cent in 2020-21.. EU Countries have the highest share (0.089%) of India's GDP from exports in 2020-21. It implies that the share of Middle East Countries (0.064%) is highest followed by Singapore, Hongkong & other South Asian Countries, North America, Russia and C.I.S countries, African Countries, and Japan Korea other Far East Countries and to the percentage of 0.028, 0.026, 0.016, 0.008 and 0.007 respectively. The share of exports to other countries is considerably low.

MAJOR FINDINGS OF THE STUDY

A few of the findings emanating from the study are:

1. India has to improve their international trade policies and qualitative infrastructure to increase their GDP from foreign countries.
2. Indian telecom equipment manufacturers are increasingly looking to export their products globally, contributing to the country's economy.
3. Policies like the Digital India initiative and the PLI scheme have played a crucial role in boosting domestic manufacturing of telecom equipment, leading to increased production and reduced import reliance.
4. India still needs to further develop its capabilities in high-end telecom equipment manufacturing and compete with established global players.

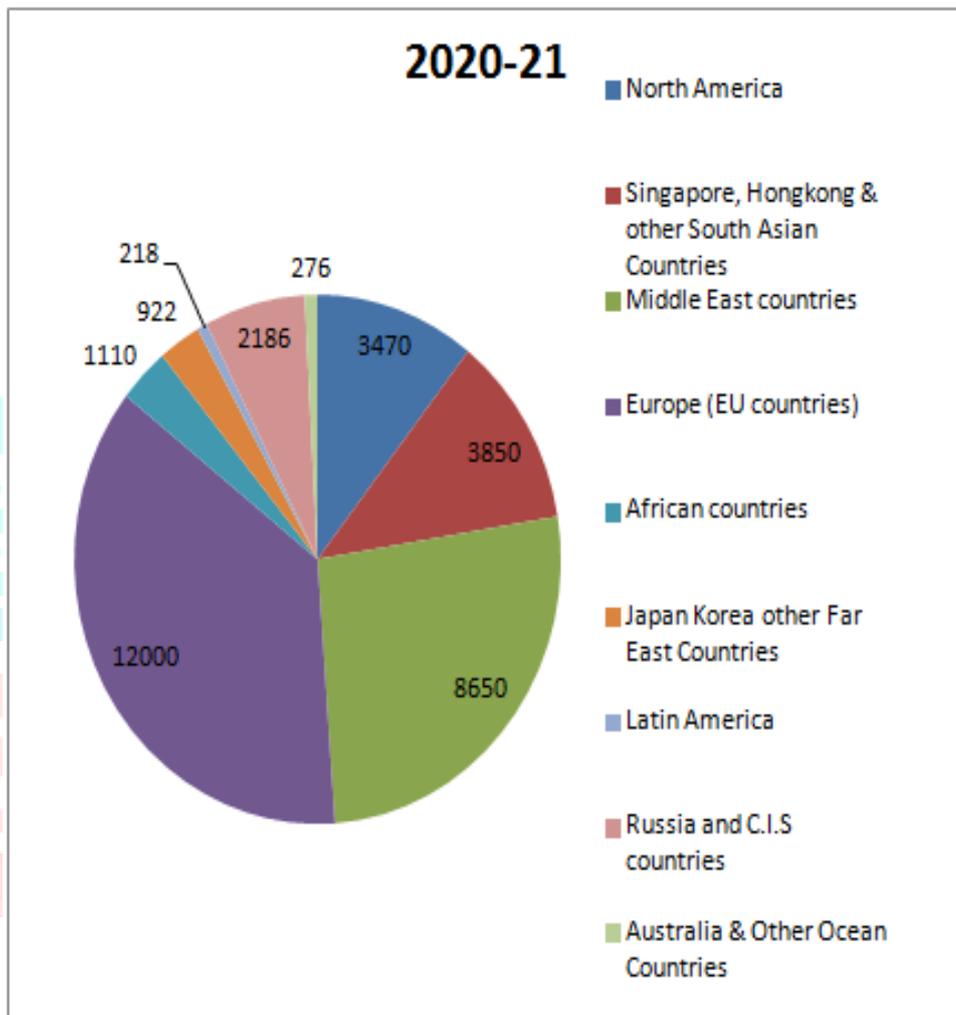
MAJOR RECOMMENDATIONS

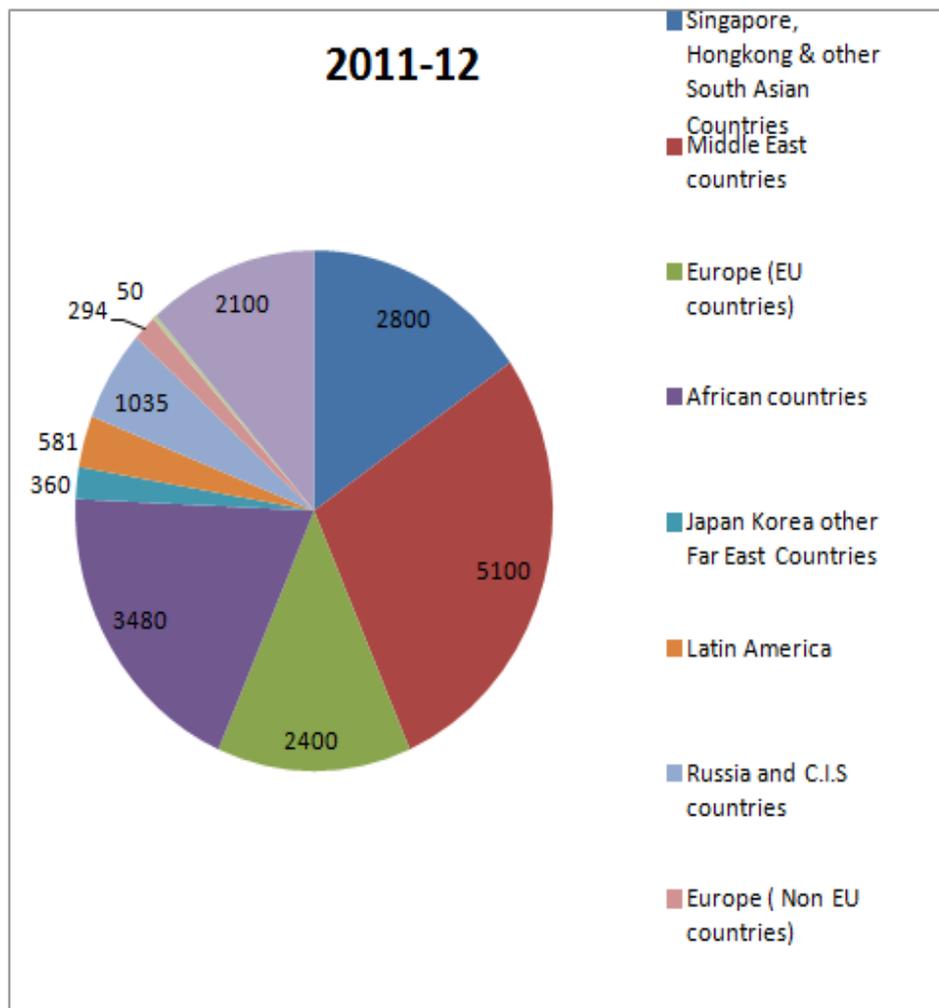
1. Invest in research and development of potential technologies like 6G and quantum communication.
2. Establish inclusive training programs to equip the workforce with essential skills for advanced telecom equipment manufacturing and deployment.
3. Collaborate with universities and technical institutes to expand specialized courses aligned with industry needs.
4. Prioritize initiatives to lengthen broadband connectivity to rural areas, leveraging innovative solutions like satellite communication.
5. Promote digital literacy programs to authorize citizens in rural areas to utilize advanced telecom services.

- 6. Encourage domestic manufacturers to explore export opportunities in neighbouring countries.
- 7. Foster a vibrant start-up ecosystem to promote innovation in niche areas within the telecom equipment sector.
- 8. Collaborate with global leaders in the telecom industry to admittance advanced technologies and expertise.

Figure-2

Direction of Telecom Equipment Exports in India (Rs. Crores)





CONCLUSION

In conclusion, while India's telecom equipment export industry is viewing positive growth, spurred by government initiatives like the Production Linked Incentive (PLI) scheme, it still faces challenges in achieving significant global market share, with foremost hurdles including the need to further expand domestic manufacturing capabilities, struggle against established international players, and expand market reach to fully benefit from the potential for exporting 5G and advanced telecom equipment to international markets.

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