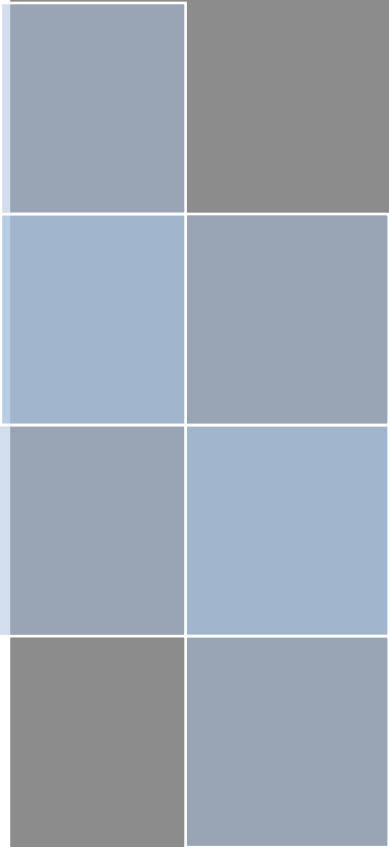


Industry Report on **ICT Distribution in India**

19th January 2024



1. Overview of Indian Economy

India GDP and GDP Growth

India is the world's 5th largest economy and expected to be in the top 3 global economies by FY 2050

India ranks fifth in the world in terms of nominal gross domestic product ("GDP") as of CY 2022 and is the third-largest economy in the world in terms of purchasing power parity ("PPP"). India is estimated to be among the top three global economies in nominal GDP by FY 2050.

Exhibit 1.1: GDP at current prices (In USD Tn) and GDP Ranking of Key Global Economies (CY 2022)

Country	Rank in GDP (CY 2022)	Rank in GDP (PPP) (CY 2022)	CY 2010	% Share of World GDP (CY 2010)	CY 2015	% Share of World GDP (CY 2015)	CY2020	% Share	CY 2021	% share	CY 2022	% share	CY 2023P	CY 2025(P)	CAGR (2021-2025P)
USA	1	2	15	22.5%	18.2	24.3%	21	24.7%	23.3	24.1%	25.4	25.3%	26.9	26.7	3.5%
China	2	1	6.1	9.2%	11	14.7%	14.7	17.4%	17.8	18.4%	18.1	18.1%	19.4	22.5	6.0%
Japan	3	4	5.7	8.7%	4.4	5.9%	5.1	5.8%	5	5.2%	4.2	4.2%	4.4	6.3	5.9%
Germany	4	6	3.4	5.1%	3.4	4.5%	3.9	4.5%	4.3	4.5%	4.1	4.1%	4.3	5.1	4.4%
UK	6	10	2.5	3.7%	2.9	3.9%	2.8	3.2%	3.1	3.2%	3.1	3.1%	3.2	3.9	5.7%
India	5	3	0.9	2.5%	1.7	2.8%	2.6	3.1%	3.1	3.2%	3.4	3.4%	3.7	4.2	7.9%

Source: India Data from RBI, Upto CY 2022 data from World Bank, Future growth rate from OECD Data, Technopak Analysis
1USD = INR 80 (for India numbers)

For India CY 2010 is FY 2011, CY 2015 is FY 2016, CY 2020 is FY 2021, CY 2021 is FY 2022, CY 2022 is FY 2023 and CY 2025P is FY 2026P.

India's GDP growth almost twice as that of the world economy.

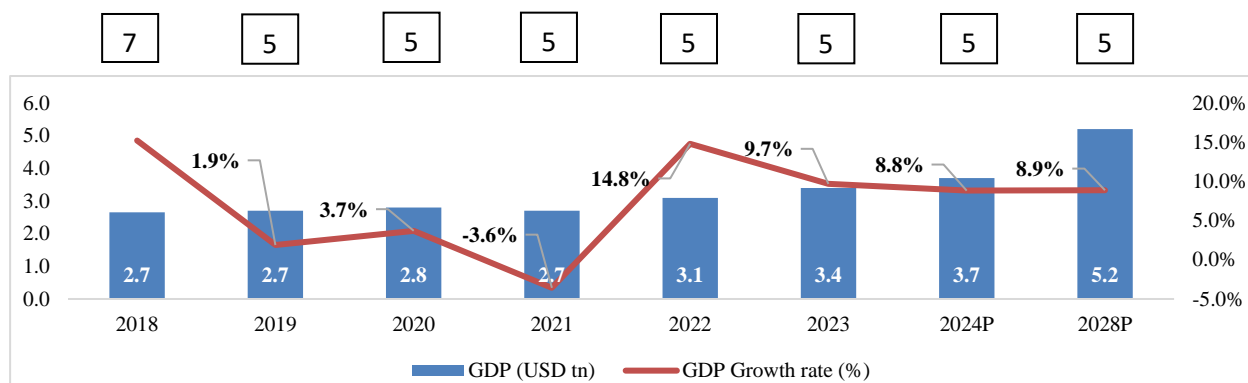
Since FY 2005, Indian economy's growth rate has been twice as that of the world economy and it is expected to sustain this growth momentum in the long term. In FY 2023, India's Nominal GDP reached USD 3.4 Tn and is expected to reach USD 5 Tn by FY 2028. It is also expected that the growth trajectory of Indian economy will enable India to be among the top 3 global economies by FY 2050.

Several structural factors are likely to contribute to economic growth in the long run. These include favorable demographics, reducing dependency ratio, rapidly rising education levels, steady urbanization, growing young & working population, IT revolution, increasing penetration of mobile & internet infrastructure, increasing aspirations and affordability etc.



Ankur Bisen
Senior Partner

Exhibit 1.2: India's Nominal GDP in FY (USD Bn)



1 USD=INR 80

White boxes at the top refer to India's GDP rank on a global basis

Source: RBI Data, Economic Survey, World Bank, EIU, IMF

1 USD=INR 80

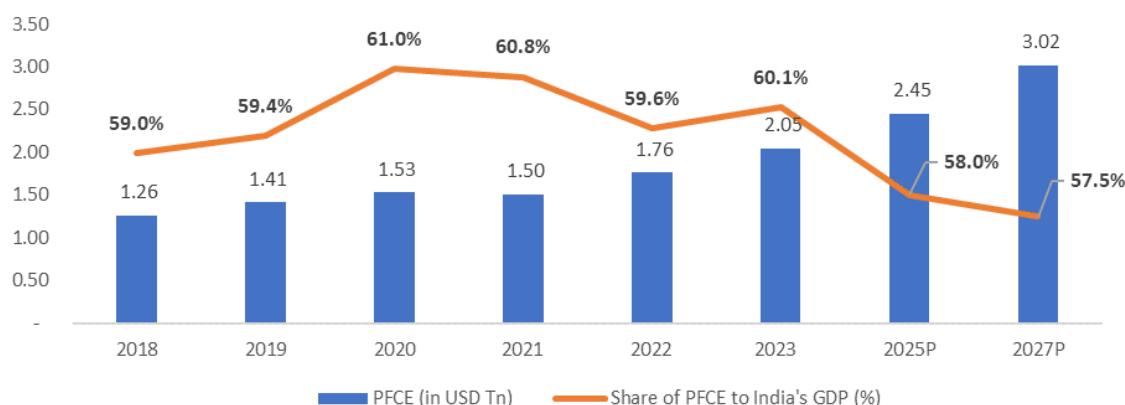
White boxes at the top refer to India's GDP rank on a global basis

Private Final Consumption

High share of domestic consumption in Private Final Consumption Expenditure

GDP growth in India is expected to be driven by rising private final consumption expenditure. India is a private consumption driven economy where the share of domestic consumption is measured as private final consumption expenditure (PFCE). This private consumption expenditure comprises both goods (food, lifestyle, home, pharmacy etc.) and services (food services, education, healthcare etc.). High share of private consumption to GDP has the advantage of insulating India from volatility in the global economy. It also implies that sustainable economic growth directly translates into sustained consumer demand for goods and services. In FY 2023 PFCE of India was valued at USD 2 Tn (INR 1,63,98,403 Cr), which accounted for 60.1% of India's GDP. With the rapidly growing GDP and PFCE, India is expected to be one of the top consumer markets in the world.

Exhibit 1.3: India's Total Private Final Consumption Expenditure (Current Prices USD Tn) (FY) and Share of Private Final Consumption Expenditure to GDP (%) (FY)



Source: World Bank, RBI, IMF, Ministry of Statistics and Program Implementation, Technopak Research & Analysis, 1 USD=INR 80

PFCE in India has exhibited varying y-o-y growth rates over the past few years. During FY 2018 and FY 2019, the PFCE grew by 10.6% and 12.0% respectively. India's PFCE witnessed a 1.7% degrowth during FY 2021, primarily attributed to the pandemic's disruptive effects on consumer spending patterns and economic uncertainty. Nevertheless, it rebounded in FY 2022 due to the pent-up demand and recorded a high growth of 17.1%, indicating a robust expansion in consumer spending and a sustained momentum in private consumption. The PFCE in India has grown at a CAGR of 10.2% during FY 2018 to FY 2023 and is further expected to grow at a CAGR

of 10.1% during the next 4 years, reaching USD 3 Tn (INR 241.28 lakhs crores) by FY 2027. Share of PFCE to India's GDP has been in the range of 59-61% and is expected to go down till 57.5% in next 5 years.

Services, accounted for ~59% of India's GDP. This is much higher than that in China (~38%) (as of 2021), Germany (~51%) and comparable to that of the US (~68%) (as of 2021).

Exhibit 1.4: Household Final Consumption Expenditure in CY (Current Prices USD Bn)

Country	CY 2010	CY 2011	CY 2012	CY 2013	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	Contribution to GDP (2022)	CAGR (2017-2022)
U.S.	10,260	10,699	11,047	11,363	11,847	12,263	12,693	13,239	13,993	14,428	14,047	14,347	NA	NA	2%
China	2,090	2,637	3,019	3,429	3,845	4,178	4,344	4,745	5,353	5,605	5,611	6,347	NA	NA	8%
Germany	1,872	2,036	1,937	2,036	2,075	1,778	1,829	1,918	2,068	2,018	1,951	1,924	2,080	51%	2%
India*	385	419	702	809	906	1,016	1,139	1,260	1,411	1,530	1,504	1,762	1,981	59%	9%

Source: World Bank, RBI, Technopak Research & Analysis

Note: for U.S. and China, Data for CY 2022 is not available. Hence CAGR is computed for 4 years (CY 2017 to CY 2021)

* For India, CY 2020 means FY 2021,

** For CY 2010 & CY 2011, base year was 2004-05

1USD = INR 80

Demographic Profile of India

India has one of the youngest populations globally compared to other leading economies. The median age in India is estimated to be 28.7 years in CY 2022 as compared to 38.5 years and 38.4 years in the United States and China, respectively, and is expected to remain under 30 years until 2030. With the young population, India as a developing nation is a faster growing market than the developed nations such as USA, UK, and Canada in terms of retail consumption related trends. The younger population is naturally pre-disposed to adopting new trends and exploration given their educational profile and their exposure to media and technology, which presents an opportunity for domestic consumption in the form of branded products and organized retail.

Exhibit 1.5: Median Age: Key Emerging & Developed Economies CY 2022 Estimated (in Years)

Country	India	China	USA	Singapore	Russia	South Korea	Canada	UK
Median Age (Yrs.)	28.7	38.4	38.5	35.6	40.3	43.2	41.8	40.6

Source: World Population Review, Technopak Analysis

Growing Middle Class

Increase in number of households with annual earnings of USD 10,000 to USD 50,000 has been leading to an increase in discretionary spending on food and beverages, apparel & accessories, luxury products, consumer durables and across other discretionary categories.

Exhibit 1.6: Household Annual Earning Details (FY)

Year	FY 2009	FY 2012	FY 2014	FY 2015	FY 2018	FY 2020	FY 2021	FY 2030P	CAGR (2020-30P)
Total House Holds (Mn)	236	254	267	274	295	310	317	386	2.2%
HHs with Annual earning USD 5,000 – 10,000 (Mn)	36	60	71	85	121	132	136	143	1%
% Of total HHs	15.20%	23.80%	26.50%	30.90%	41.20%	42.50%	43%	37.0%	-
HHs with Annual earning USD 10,000 – 50,000 (Mn)	11	22	27	36	86	95	101	162	5.5%
% Share of total HHs	4.70%	8.70%	10.20%	13.20%	29.30%	30.60%	32%	42.0%	-

Source: Technopak Body of Knowledge and Analysis

Nuclearization

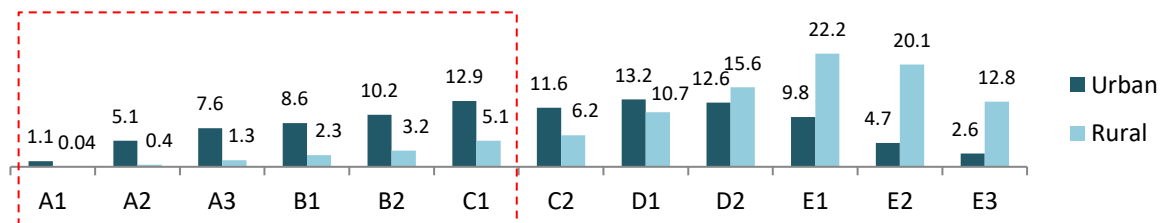
The growth in the number of households exceeds population growth, which indicates an increase in nuclearization in India. According to the CY 2011 census, 74% of urban households have five or less members,

compared to 65% in CY 2001. It is expected that smaller households with higher disposable income will lead to a greater expenditure on technology and communication spends translating into personal computers such as laptops and mobile phones including tablets.

Top 20% of Indian households account for ~50% of the total household consumption

Household consumption in India is skewed towards the urban population. Socioeconomic classifications (“SEC”) A, B and C1, which account for approximately 45.5% of urban population and approximately 12.3% of rural population is commonly referred to as the “top 20%” by income of Indian households.

Exhibit 1.7: SEC Break-up of Indian Households (in %age) FY 2023



Source: RBI Data, Economic Survey, World Bank, EIU, IMF

Note: Socio economic classification is a stratification of Indian households used by marketers to understand consumer worthiness and consumption lifestyle. It is widely agreed that consumption behaviour in India is better predicted by SEC (socio economic class) classification, which is based on Education of chief earner and number of “consumer durables” (from a predefined list)-owned by the family. The list has 11 items, ranging from ‘electricity connection’ and ‘agricultural land’ to cars and air conditioners

Effects of COVID-19 on the Global Economy and India

India is projected to have the highest real GDP growth rate as compared to other key economies affected by COVID-19. India witnessed a strong recovery in H2 FY 2022 especially after relaxation of lockdown and other restrictions post the second wave of COVID-19 pandemic. India's actual GDP growth rate has shown significant variation in recent years with a surge of 9.1% in FY 2022 following a steep decline of 7.3% during the pandemic period. An increased demand from consumers fueled the recovery of the Indian economy post pandemic duration.

Exhibit 1.8: Real GDP Growth rate of Key Global Economies (CY 2018 – CY 2023 (P))

Country	GDP Growth Rate - 2018 (in %)	GDP Growth Rate - 2019 (in %)	GDP Growth Rate - 2020 (in %)	GDP Growth Rate – 2021 (in %)	GDP Growth Rate – 2022 (in %)	GDP Growth Rate – 2023P (in %)
United States	3.0%	2.2%	-3.5%	5.9%	2.1%	1.6%
China	6.8%	6.0%	2.3%	8.4%	3.0%	5.2%
Japan	0.6%	0.3%	-5.8%	2.1%	1.1%	1.3%
Germany	1.1%	1.1%	-4.6%	2.6%	1.8%	-0.1%
United Kingdom	1.3%	1.4%	-10.0%	7.6%	4.0%	-0.3%
India*	6.1%	4.2%	-7.3%	9.1%	6.8%	5.9%
France	1.9%	1.8%	-7.9%	6.8%	2.6%	0.7%
Italy	0.9%	0.4%	-8.9%	7.0%	3.7%	0.7%
Brazil	1.8%	1.4%	-4.1%	5.0%	2.9%	0.9%
Canada	2.4%	1.9%	-5.3%	5.0%	3.4%	1.5%

Source: World Bank data, WEO April 2021 by IMF; Data of India is based on Financial Year (April-March) basis.

*Secondary sources and Technopak Analysis. 2023P: Projected numbers for 2023

CY 2018 numbers for other countries is compared with FY 2019 numbers of India. Similarly, CY 2021 for other countries is FY 2022 for India

Make In India

Make in India is an initiative by the Government of India (GoI) that helps to incentivize the development, manufacturing and assembling of products within the country without any imports. The government is promoting the development of Electronic Manufacturing Clusters (EMCs) throughout the country to provide world-class infrastructure and facilities. Policies by the government of India such as Digital India, Make in India and favorable FDI policies for electronics manufacturing have made the process of setting up of electronics manufacturing unit in the country very easy. Electronics manufacturing industry has targeted achieving a revenue of USD 300 Bn by FY 2026, focusing on domestic consumption as well as on exports.

Exhibit 1.9: Laptop and Mobile companies manufacturing under Make in India

Company	Description
HP	<ul style="list-style-type: none"> HP first set up its production facility in India in the year 2007 and has expanded to various locations since then HP is the first global company to manufacture laptops, desktop-towers, mini desktops, and display monitors as part of GOI's Make in India programme It has partnered with Flex at its production site in Chennai Some of the products qualify under the public procurement order of the government and can be procured from the Government e-Marketplace (GeM) portal
Foxconn	<ul style="list-style-type: none"> Foxconn has been manufacturing Apple iPhones in India as Apple's contract manufacturing partner since 2017 The first model of Apple to be manufactured in India was iPhone SE, followed by other models
Optimus Infra	<ul style="list-style-type: none"> Established in 2015, Optimus Electronics Limited (OEL) is a JV between Optimus Infracom Limited and Wistron Corp. Taiwan for manufacturing smart devices including Smartphones The facility boasts of 75,000sq.ft. of production area, 20 Assembly lines and a monthly production capacity of over 8.5 Mn smartphones per year. The company is manufacturing for brands like Jio, Oppo, Oneplus, HTC etc.
Samsung	<ul style="list-style-type: none"> Samsung started the manufacture of its phone in India in the year 2018 in Noida, Uttar Pradesh Much of the production is for fulfilling domestic demand of the Indian market Some of the phones made in India are exported to markets in Europe, Africa and West Asia
Jabil Circuit	<ul style="list-style-type: none"> Established in 2004, Jabil Circuit and manufactures for major OEMs in a diverse range of industries such as digital home and office devices, energy management, clean technology, consumer appliances, computing & storage, automotive etc. Jabil builds enterprise computing and storage products ranging from entry-level servers to clustered storage systems. In networking, the company manufactures from switches, routers, firewalls, hyperconverged and other networking products
Cerebra Electronics	<ul style="list-style-type: none"> Established in 1992, the company has ISO 9001:2015 certified plant manufactures motherboards, memory modules, graphic cards and networking products. Apart from manufacturing, the company is one of the leading largest recycling and refurbishment, offering recycling and refurbishing services to major brands
Acer	<ul style="list-style-type: none"> Acer started their business in India in September 1999. Acer India and Dixon Technologies (India) Ltd have partnered for the manufacturing of laptops at Dixon's state-of-the-art manufacturing facility situated in Noida under Make in India scheme Acer plans to manufacture laptops under the value segment, mainstream segment, and education segment at the Dixon Factory

Source: Secondary Research, Primary Research

Modified Electronics Manufacturing Clusters Scheme (EMC 2.0)

The Modified Electronics Manufacturing Clusters Scheme (EMC 2.0) has been initiated by the GoI to offset the problems faced by industries for quality infrastructure and to develop a robust electronics manufacturing ecosystem in the country. This will help make India an Electronics Manufacturing Hub.

India's electronics production has increased from INR 1,90,366 Cr (USD 29 Bn) in FY 2015 to INR 6,40,810 Cr (USD 85 Bn) in FY 2021, thus growing at a (CAGR) of about 22%. Further, the country's electronic manufacturing has risen to INR 8,25,000 Cr (USD 103 Bn) in FY 2023, exhibiting a CAGR of 13.5% during the last two years. India's share in global electronics manufacturing grew from 1.3% in FY 2012 to over 3.6% by FY 2019. Electronics production accounts for 3% of India's GDP at present.

While the exports of electronic goods have increased from INR 39,978 crore (USD 5.96 billion) in 2016-17 to INR 109,797 crore in 2021-22 (USD 14.6 Billion), exhibiting a Compound Annual Growth Rate (CAGR) of 22.39%, India's share in global electronics manufacturing has grown from 1.3% in 2012 to 3.75% in FY 2022, as per industry estimates. During April 2022 – March 2023 electronic goods exports were recorded at USD 25.3 Billion.

Government of India is aiming to increase the production of electronic items to USD 300 Bn by FY 2026. The domestic consumption of products is expected to increase from USD 75 Bn in FY 2022 to USD 150-180 Bn by FY 2026.

Penetration of Technology Devices

Exhibit 1.10: Penetration of Technology Products (CY 2022)

Country	Personal Computers (Laptops, Desktops, and other devices)	Mobile Phones
India	12-15%	95-97%
USA	73-75%	96-97%
UK	75-77%	96-98%
Japan	74-76%	94-96%
China	52-54%	94-96%

Source: Secondary Research, Technopak Analysis

The penetration of Personal Computers (Laptops and Desktops) in India is low. The sale of laptops in the country is growing at a faster rate than the sales of assembled desktops. Developing economies over the world are declining in terms of the PC market, whereas the penetration in India is low and is therefore looked at as amongst the top countries for PCs and is an attractive destination for PC companies.

Import Substitution

The import substitution strategy is a strategy under the trade policy that aims to decrease the import of foreign products and encourages manufacturing and production in the domestic market. This strategy aims at altering the economic structure of the country by replacing foreign-made goods with goods made in India.

The Government of India in 2020 had identified 12 priority sectors with potential for import substitution and boosting exports including electronics, industrial machinery, food processing, organic farming, iron & steel, aluminium & copper, agrochemical, furniture, leather & footwear, auto parts, textiles, and marine products. The government of India has also identified 102 priority items such as integrated circuits, personal computers, insulin injections, cameras, antibiotics, turbojets, lithium-ion accumulators, and machines, as products whose imports are high and need immediate interventions to increase domestic production opportunities.

Growing Digitization in India

Covid-19 has accelerated the pace of technology adoption and digitization across enterprises and has transformed the way technology is perceived. India is expected to grow continuously across the digital use-case funnel which will be driven by the affordability of internet, continuous improvement of in telecommunications infrastructure, increase in consumption of data, increased adoption from Tier II cities, rising popularity of social media and growing trust and adoption of online payment platforms.

It has been observed that the upper as well as middle-income group households in urban India are gradually moving towards a trend of owning multiple personalised devices at an individual level to manage work, education, hobbies, shopping, etc with one person owning multiple technology devices like mobile phone, tablet, laptop, etc.

There was heightened funding and investment in digital led new age businesses, which is supported by the creation of record number of start-ups globally. In India alone, out of the total unicorns, it is estimated that ~44 unicorns were added in FY 2021 (as reported by Ministry of Finance, Govt of India) and further 23 unicorns during FY 2022. As of 31 May 2023, India has 108 unicorns, with a total valuation of ~ USD 341 Bn. This sustained growth and interest in technology led businesses, would directly translate into demand for ICT products such as PC's, components, peripherals and accessories, servers, enterprise and embedded solutions and services.

Exhibit 1.11: Annual VC investments in India (INR Bn)

Year	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Amount (INR Bn)	₹ 353	₹ 495	₹ 833	₹ 750	₹ 2,888	₹ 2,000

Source: Secondary Research
1 USD = INR 80

Venture capital funding in India slowed down in 2022, with investments declining by 29% from INR 2,888 Bn in CY 2021 to INR 2,056 Bn in CY 2022.

Talented Workforce

India is expected to add close to 10-12 Mn people to its workforce every year over the next two decades, with the working-age population projected to cross 1 Bn mark by 2030. This provides tremendous opportunity to drive growth of technology industry on the back of its rising working-age population. The electronics and IT Hardware sector in the country is estimated to have employed around 90 lakh skilled workers in FY 2022. India's IT-BPM industry is estimated to have created around 3,00,000 jobs in FY 2023.

Lower wages Compared to other countries

Minimum wage is the minimum amount of remuneration that an employer is required to pay wage earners for the work performed during a given period, which cannot be reduced by collective agreement or an individual contract. The median per capita income is the mid-point of a country's income distribution where 50% people earn below the median income and 50% of the population earns above it.

Exhibit 1.12: Wage Rates of key Global Economies CY 2022 (in USD)

Country	Minimum Wage (Hourly)	Median Per Capita Income	Mean Income
United States	7.3	19,306	25,332
China	1.9	NA	4,246
Japan	7.5	14,255	17,095
Germany	10.7	16,845	19,730
United Kingdom	11.4	14,793	18,133
India ¹	0.6	NA	1,314
France	11.5	16,372	19,409
Italy ²	7.4	13,170	15,547
Brazil	2.2	4,559	7,654
Canada	10.3	18,652	22,042

Source: Secondary Research, World Population Review

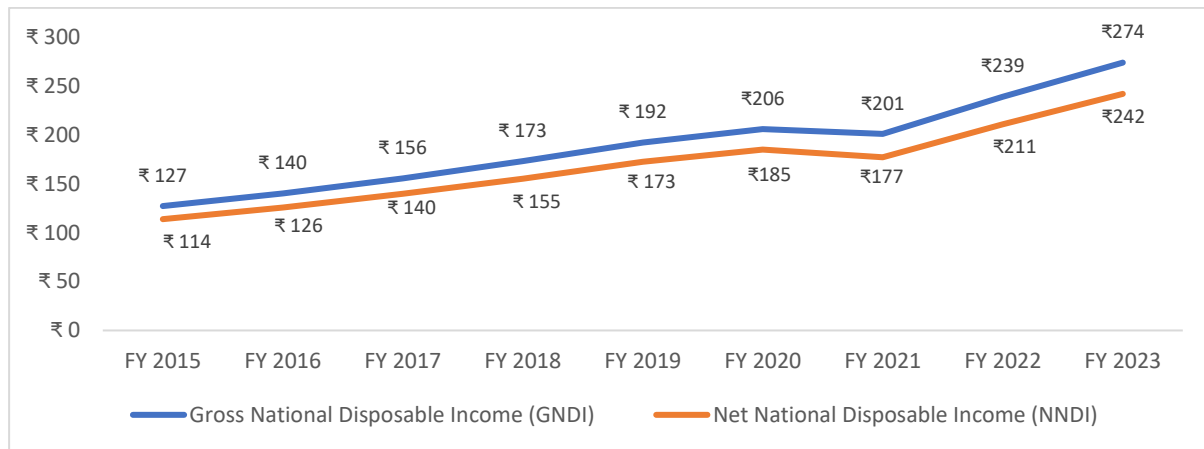
1: In India, the minimum wage rates vary in states, by skills and the nature of work considering 9 hours of work per day

2: Italy does not have a minimum wage rate, rates calculated by Technopak Analysis

NOTE: INR 80= USD 1

Rising Disposable Income

Exhibit 1.13: Disposable Income of India (FY) (in INR Lakh Cr)



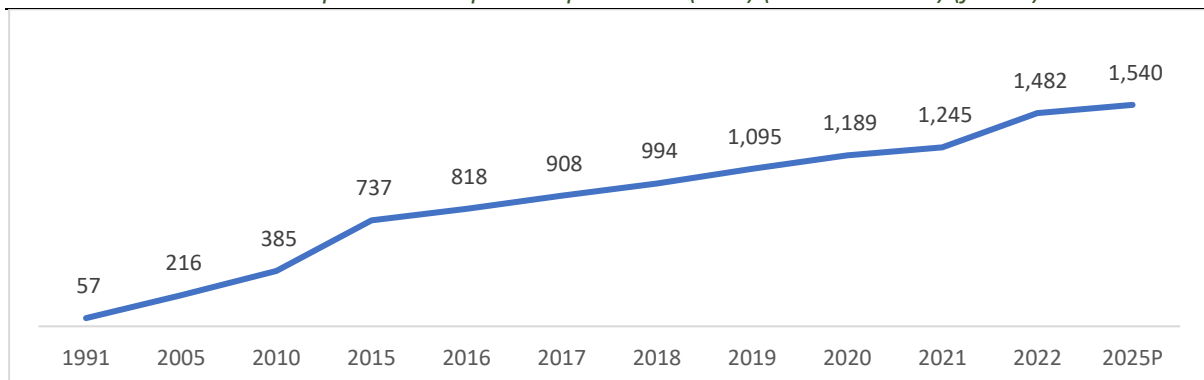
Source: RBI, Note: FY 2023 numbers are Provisional Estimates

Due to the growing number of middle- and higher-income households and rising per capita income, consumption of discretionary products is likely to grow. The World Economic Forum projects that high and upper-middle-income groups will grow from 25% in 2019 to 50% of household by 2030. An increase in disposable income leads to increase in spends on categories which are non-basic in nature and helps in elevating the lifestyle. Technology boom and increasing number of multinational companies in India has led to increased disposable income and prevalence of social media and owning technological products as a status symbol and/or fashion accessory has led to its growth in the country. Moreover, with the rise in disposable income, consumers would tend to upgrade their preferences, resulting in higher demand for prestige, premium and luxury segments. Rapid urbanisation is also leading to spur in aspirational values of people, leading to higher consumption technological products.

Per Capita Final Consumption Expenditure

The Per Capita Final Consumption Expenditure had shown growth pre COVID. Per Capita Final Consumption Expenditure, from USD 1,189 in CY 2020 to USD 1,482 in CY 2022. It is expected to grow at 5% CAGR from CY 2020 over the next 5 years till CY 2025 and is expected to reach USD 1,540.

Exhibit 1.14: India's Per Capita Consumption Expenditure (USD) (Current Prices) (for CY)



Source: Technopak Analysis

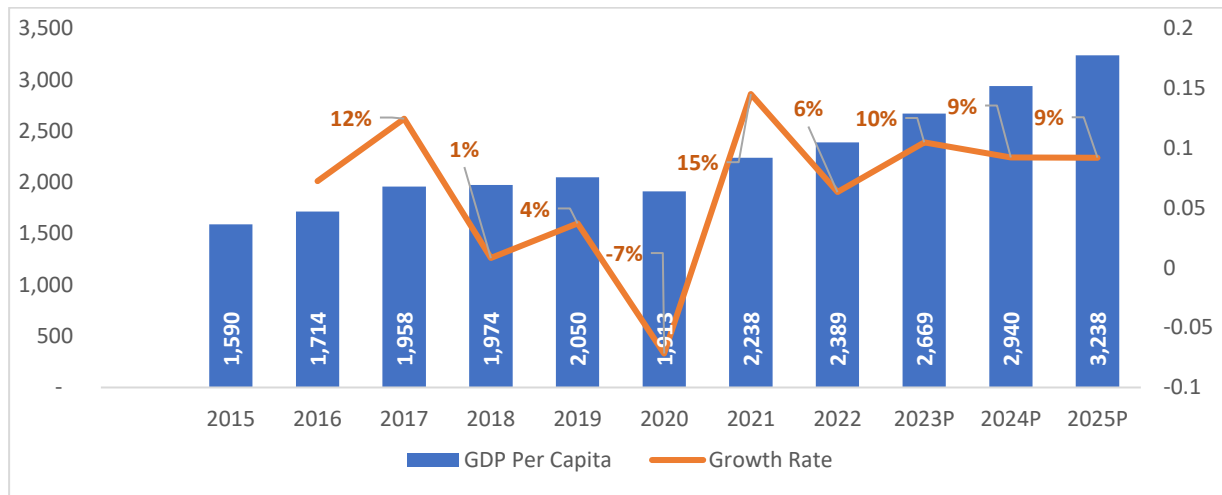
Note: Numbers for 2025 are Provisional

Per Capita Income Growth

The per capita income of India has been showing an increasing trend since 2012; growing at a healthy CAGR of approximately 10%, the per capita income reached USD 2,389 in CY 2022. Given the impact of COVID-19, it decreased by 7% and valued at USD 1,913 in CY 2020. However, it is expected to bounce back to USD 2,669 in

CY 2023 and continue its growth journey at a high CAGR of 10.7% from CY 2022 to CY 2025 with a per capita income growth of USD 3,238 during the period.

Exhibit 1.15: India's GDP Per Capita (CY) (USD) (Current Prices)



Year indicates CY

Source: IMF projections

Note: Numbers for 2023-2025 are Provisional

Export Opportunities

The trade war between China and USA led to many companies in China wanting to diversify their supply chain outside of China which gave rise to the “China plus One strategy”. The multinational firms are moving to other countries in addition to staying in China. The advantages that China provided in terms of labour and raw material cost are being overshadowed by the costs that other countries in Asia can provide. MNCs look at countries with stable governments like India, Vietnam, Indonesia, Thailand, etc. for this diversification. With the right set of FDI policies and attractive investment opportunities in the country, it may lead to additional capital expenditure of around INR 12,000 Cr over the next ten years.

Exhibit 1.16: Schemes launched by the Government of India

Year	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Export (INR Bn)	400	412	619	829	819	1,168	1,900

Source: Annual Report of Ministry of Electronics and Information Technology, Technopak Analysis

The export of electronic goods from India increased from INR 0.40 Lakh Cr in FY 2017 to INR 1.90 Lakh Cr in FY 2023. The key product categories that were exported include mobile phones, IT hardware (laptops, tablets), consumer electronics (TV, audio), industrial electronics and auto electronics. The Ministry of Electronics and Information Technology (MeitY) expects the exports to reach USD 120-140 Bn out of total USD 300 Bn electronics manufacturing target in FY 2026. The National Policy on Electronics 2019 (NPE 2019) aims to position India as a global hub for Electronics System Design and Manufacturing (ESDM). This can be done by encouraging and driving capabilities in the country for developing core components and creating an enabling environment for the industry to compete globally.

Four schemes were introduced by the Government of India to boost the electronics sector and the required ecosystem. The schemes are:

Exhibit 1.17: Schemes launched by the Government of India

Scheme	Incentive for Electronics Industry
Production Linked Incentive Scheme (PLI) for IT Hardware	<ul style="list-style-type: none"> • The scheme offers production linked incentive to boost domestic manufacturing and attract large investments in the value chain • Incentive of 4%-2%/1% on net incremental sales of goods manufactured in India to eligible companies • Target Segments shall include – Laptops, Tablets, All-in-one PCs and Servers
Production Linked Incentive Scheme (PLI) for Large Scale Electronics Manufacturing	<ul style="list-style-type: none"> • The scheme offers a production linked incentive to boost domestic manufacturing and attract large investments in mobile phone manufacturing and specified electronic components, including Assembly, Testing, Marking and Packaging (ATMP) units • It will help boost the electronics manufacturing landscape and establish India at the global level in electronics sector • Incentive of 4% to 6% on incremental sales of goods manufactured in India and covered under target segments, to eligible companies, for a period of five years
Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)	<ul style="list-style-type: none"> • The scheme will help offset the disability for domestic manufacturing of electronic components and semiconductors in order to strengthen the electronics manufacturing ecosystem in the country • Financial incentive of 25% on capital expenditure for an identified list of electronic goods that comprise downstream value chain for electronic products – electronic components, semiconductor/ display fabrication units, ATMP units, specialised sub-assemblies and capital goods • Applicable to new units set up as well as for expansion of capacity/modernisation and diversification of existing units
Modified Electronics Manufacturing Clusters Scheme (EMC 2.0)	<ul style="list-style-type: none"> • Financial assistance for setting up of both EMC projects and Common Facility Centres (CFCs) • The scheme will fortify linkages between domestic and international market by strengthening supply chain responsiveness, consolidation of suppliers, decreased time-to-market, lower logistic costs, etc.

Source: Ministry of Electronic and Information Technology, Government of India

The government of India aims to bring electronic goods amongst India's top three export categories by FY 2026, increasing the overall export value from USD 60.29 Bn in FY 2023 to USD 120-140 Bn in FY 2026.

2. Information and Communications Technology (ICT) Industry Overview

2.1 Digital Landscape of India

Broadband Internet Subscribers (wireline + wireless) touched ~888 Mn as of October 2023

With increasing penetration of internet connectivity across the geographies of rural and urban India, the number of smart phones, social media users and online shoppers in India is on the rise. Supported by various government initiatives under Digital India Initiative to strengthen the existing digital infrastructure, affordable internet services in which primacy of mobile internet as major feature of digital landscape. Digital landscape in India is evolving which is reflected in broadband internet subscribers (wireline + wireless) at 888.27 Mn (no. of connections) as of 31stOctober, 2023 according to TRAI press release dated 3rd January, 2024.

Internet penetration in non-metro cities in India have increased due to penetration of smartphones, Government enabled village knowledge centres leading to increased awareness which in turn is driving demand for ICT products for personal consumption. Non-metro cities and other rural geographies are becoming centre of consumptions for ICT products like personal computers, smartphones, internet devices, networking devices and hence there is requirement for ICT distributors and resellers having pan India presence. India is expected to grow continuously across the digital use-case funnel which will be driven by the affordability of Internet, continuous improvement of in telecommunications infrastructure, increased adoption from Tier 2+ cities and rising popularity of social media and growing trust and adoption of online payment platforms. Key indicators to define the digital landscape are given below:

Digital Penetration

Both urban and rural India, undergoing a massive digital transformation

India has also witnessed growth in internet penetration and mobile connectivity resulting in increased online presence of the Indian population directly resulting in a boom in e-commerce, social commerce, mobile payments etc. Option of secure payment across various methods whether card, cash, wallets, and e-commerce transactions has led to increasing trust in these payment systems. In e-commerce, mode of payments by various options like credit/debit card, cash, mobile wallets, and transactions security has increased the trust on online transactions which has led to increase in online shoppers. The pandemic (COVID 19) eventually accelerated the pace at which digitization was taking place and made companies and consumers alike to adapt to digital ways of buying and selling products and services.

The number of internet users in India is set to rise from 896 Mn as on 30.06.2023 to nearly 1 Bn no. of connections by FY 2025. India has recorded 1.15 Bn mobile subscribers as on 31.10.2023 of which 630 Mn subscribers are from urban regions and ~521 Mn subscribers from rural region (as per TRAI, telecom subscription report dated 03.01.2024). Smartphones now act as a catalyst for digital penetration across Tier-2 and Tier-3 markets in India. Digital penetration is also driving the online retail market which is expected to rise by 4 folds by FY 2025 majorly driven by under-penetrated categories like grocery, education, and health (NASSCOM report).



Ankur Bisen
Senior Partner

Exhibit 2.1: Growth of Digital Penetration in India (in FY)

Particulars	FY 2010	FY 2015	FY 2020	FY 2021	FY 2022	FY 2023	FY2025 (P)	CAGR (2015-2023)	CAGR (2023-2025P)
Total Internet Users (Mn)	72	350	687	778	825	846	900-1000	~12%	~6%
Mobile Internet Users (Mn)	24	159	480	754	798	821	850-950	~23%	5-7%
Mobile internet Users as a share of Total Internet Users (%)	34%	45%	70%	97%	96%	97%	95-99%	-	-

Source: Secondary Research, Technopak Analysis, TRAI

Exhibit 2.2: Growth of Internet led use cases in India (in FY)

Major Indicators	FY 2010	FY 2015	FY 2020	FY 2021	FY 2022	FY 2023	CAGR 2015-23
No. of Facebook users (Mn)	8 (1%)	142 (11%)	320 (23%)	417 (30%)	543 (39%)	516(36%)	18%
Share of Railway tickets booked online (%)	NA	55%	65%	65%	65%	65%	NA
Volume of Digital Payments (Bn)	0.7	1.3	34.5	40	46	114	75%
Social Network Users India (Mn)	27 (2%)	142 (11%)	530 (39%)	690 (50%)	898 (65%)	756(60%)	23%
Smart Phones (Mn)	6 (0.5%)	170 (13%)	480 (35%)	492 (36%)	504 (36%)	966(68%)	24%

Source: Secondary Research, Technopak Analysis

() indicates %age of total population

Exhibit 2.3: Comparison on key metrics with other key economies CY 2022

Major Indicators	India	China	USA	Singapore	Japan
Internet Users (Mn)	846 (63%)	1050 (70%)	311.3 (93%)	5.81 (97%)	118.3 (94%)
Mobile internet Users as a share of Total Internet Users (%)	77%	93.4%	90.2%	93.2%	92.3%
Mobile Internet Users (Mn)	821 (97%)	1039.5 (99%)	287.5 (84%)	5.1 (89%)	116.4 (80%)
Cost per GB (USD)	0.17	0.52	5.62	0.61	3.85
Online Shoppers (Mn)	185	710	263	3.3	NA

Source: Secondary Research, Technopak Analysis

() indicates %age of total population

2.2 ICT Industry in India

The Information and Communication (ICT) sector significantly contributes the country's GDP, ICT sector includes value arising from Information Technology enabled Business Process Outsourcing (ITeBPO), e-commerce, domestic electronics manufacturing, digital payments, digital communication services (including telecom), etc.

The role of ICT has been shifted to business model transformation and revenue growth from cost optimization and process automation. From Small and Medium Businesses (SMBs) to global organizations, companies are embracing digital transformation to achieve their business objective. Key themes driving the ICT investments include omnichannel client experience, zero touch operations, digital workplace, and digital product engineering. Hybrid cloud adoption including cloud consulting, deployment, and management services and even more pervasive. Companies are embracing digital technologies to align their cost structures, increase business resilience, personalize experience for their customers and employees which have been accelerated because of COVID-19 pandemic. The ICT products industry witnesses intense price competition, owing to which gross margins are typically low. Globally, the Electronics and ICT products market is expected to grow at a CAGR of 14% between CY 2020 and CY 2025 and is projected to cross ~USD 350 Bn in sales by CY 2025. Growth in demand

for storage devices, laptops, accessories, networking devices, and artificial intelligence machines is expected to drive the demand for ICT products in India going forward.

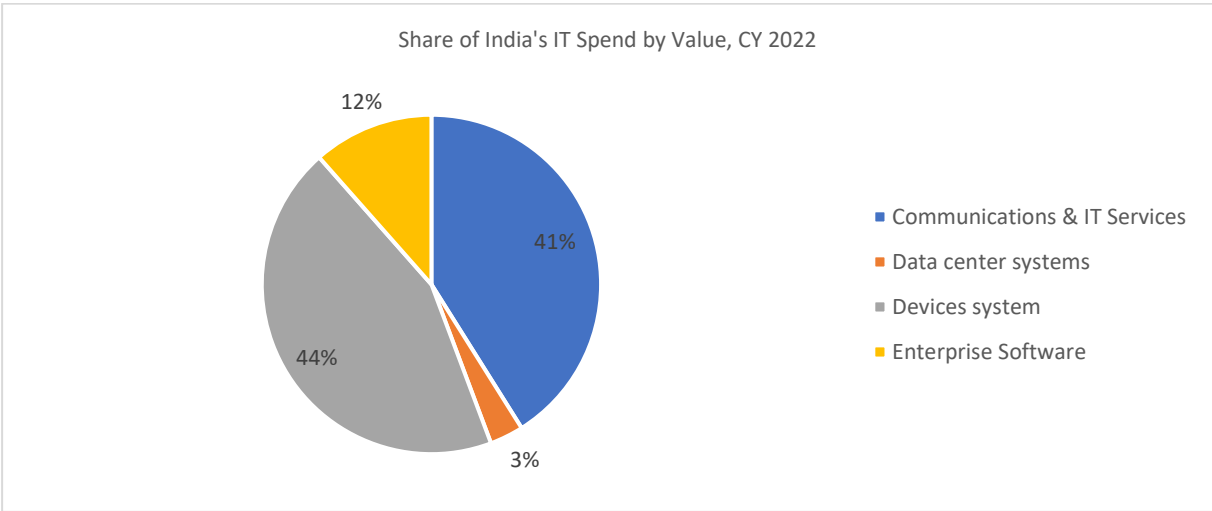
India’s IT Industry size is expected to reach ~INR 10,870 Bn (~USD 136 Bn) by CY 2025P

India’s IT Spends includes the IT spends on the products (Hardware, Software) and Services. In 2022, all sub-segments within IT spends have depicted growth, however Devices, Enterprise Software and IT services have grown fastest in last two years owing to the positive impact of the pandemic on technology industry. IT Spending is projected to reach a value of ~INR 10,870 Bn by CY 2025 growing at CAGR of 10%.

Exhibit 2.4: India IT Spend (in INR Bn), by Value

Segments	CY 2020	CY 2021	CY 2022	CY 2025 (P)	CAGR (2022-2025P)
Communications & IT Services (Telecommunication carrier, content and application provider, satellite broadcasting operator, cloud communication service provider)	2,950	3,160	3,377	3,841	4%
Datacentre Systems (Networked computers, storage systems, computing infrastructure)	190	210	265	307	5%
Devices (PC, Mobile and Accessories)	3,100	3,400	3,634	5,410	14%
Enterprise Software (Content, communication, and collaboration software)	590	700	947	1312	11%
Overall IT	6,830	7,470	8,222	10,870	10%

Source: Secondary Research, Primary Research, Technopak Analysis
1 USD = INR 80



Source: Secondary Research, Primary Research, Technopak Analysis

2.3 Global Trends

a. Rise of Metaverse

Metaverse (virtual reality enabling people across the globe to interact with each other in metaverse form) is the new form of interaction opening doors to stronger and more realistic experiences having applications at multi cross-chain possibilities. It has been widely believed that Metaverse could be a USD 8 Tn opportunity. The improvement of technology around mobile phone, laptops, and gaming consoles, the chipsets, cloud computing, 5G and fiber-to-home will be a catalyst for the rise of Metaverse.

b. Cloud computing

Application of cloud computing by MNCs and SMBs in multiple industries has made information and appliances cheaper and widely available. Cloud computing is a big shift from the traditional way of doing businesses, better planning of IT resources which helps in optimizing the cost, improve productivity, provides security of data and infrastructure and is reliable. Enterprises and businesses have been forced to move from traditional setup to cloud platforms due to remote working and break in the direct interactions between businesses and consumers. This technology transformation helped businesses to stay afloat during the lockdown and helped them with new perspectives.

c. Greater emphasis on 5G

With the new wireless technology faster than any wired Wi-Fi networks, businesses will have access to anything they need, AI will thrive from anywhere, autonomous vehicles and drones will become public, factories will become smarter with 5G technology providing greater efficiencies, greater transparency. Integrating 5G with edge computing, organizations will enable more data collection and faster processing which result in expansion of more opportunities for the solution providers. 5G's faster speed, lower latency, and ability to connect vastly higher numbers of devices will offer more efficient and productive future helping Industries like healthcare, smart utilities, consumer and media, Industrial manufacturing, and financial services to take advantage of speed, connectivity and could boost global GDP.

d. Web 3.0 becoming more mainstream

Web 3.0 is built upon three layers of technology like edge computing, decentralized data networks, and AI. The push for blockchain powered innovations is making Web3.0 the new norm for social networks, transactions, and businesses. Web 3.0 is expected to be more vital for businesses involved in finance, Insurance, and banking solutions to thrive and build more value. Web 3.0 provides high levels of trust in "the system" (such as payments, valuations, certifications), and decentralized ownership and control. The concept of Web 3.0 is mainly being explored for following objectives to give users more control on their data:

- Boosting social media experiences and user-controlled monetization model
- Decentralized Finance Application
- Preserving Artistic Ownership
- Play-to-earn Models (Monetizing the time spend on the applications)

From, sectors aspect, currently Retail, e-commerce and Real Estate are showing experimenting with Web 3.0 space to give the users a better experience.

e. Network and IT Infrastructure

Enterprise networks, infrastructure, architecture, acquisition, and deployment is going to transform through the convergence of infrastructure-less enterprise cloud and 5G. Increasing demand, falling costs, technology maturation and expanding footprints as fly-wheel effect will make cloud and 5G more accessible. Focus is likely to shift from managing hardware elements (such as switches, routers, and servers).

f. Sustained interest in gaming

Technology companies will be aiming to gain central role in the digital lives of billions of users. Gaming Industry has seen exponential growth with valuation of INR ~19,600 Bn (USD 245.10 Bn) in CY 2022 and expected to reach a value of INR 30,080 Bn (USD 376 Bn) by CY 2027. Gaming will play key role in the development of metaverse platforms. Intense competition is expected to among the tech companies including Tencent, Byte Dance's TikTok, Amazon's Twitch, Google's YouTube, and Meta through its Oculus headsets.

g. Cybersecurity

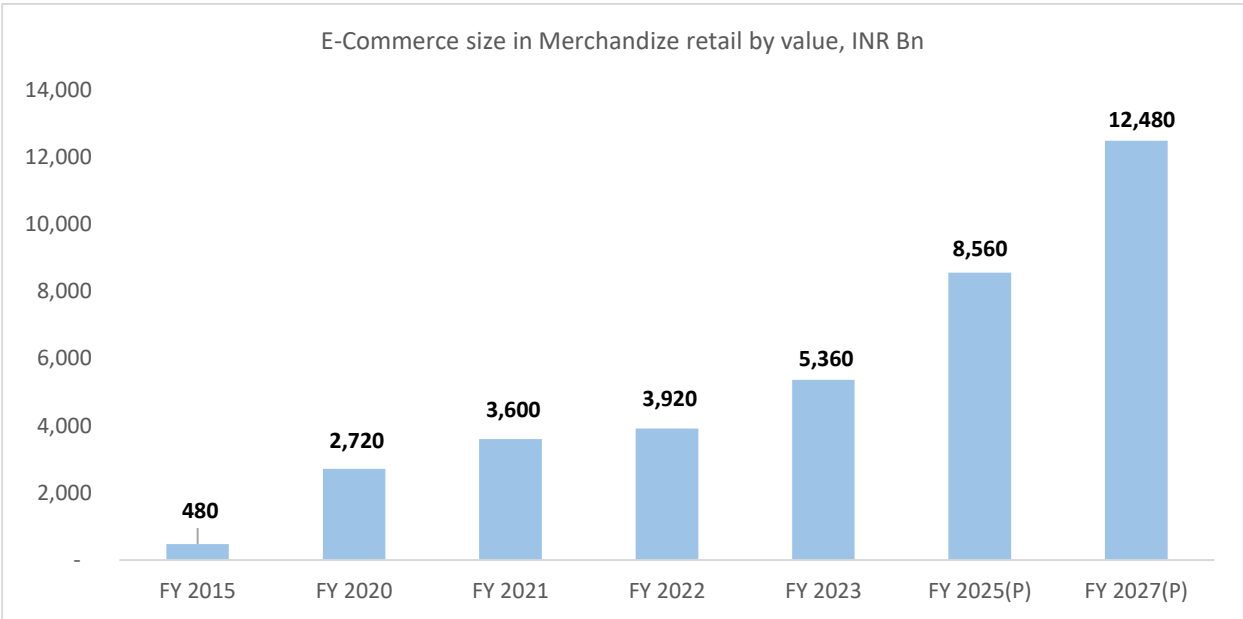
Cybersecurity will be a key trend in the ICT considering increasing cybercrimes and focus on data protection. Ransomware attacks cost an average of ~INR 0.37 Bn (~USD 4.62 Mn), more expensive than the average cost of data breach INR 0.35 Bn (USD 4.35 Mn) in CY 2022. These costs include escalation, notification, lost business,

and response costs. Remote working, hybrid work culture will make the organisations more vulnerable to cybersecurity. With the advancement of digital transformation among the companies, they will need protection for their digital business environments. Comprehensive cybersecurity strategy will also help in avoiding the financial and other losses due to possible data breaches.

h. Rise of e-Commerce

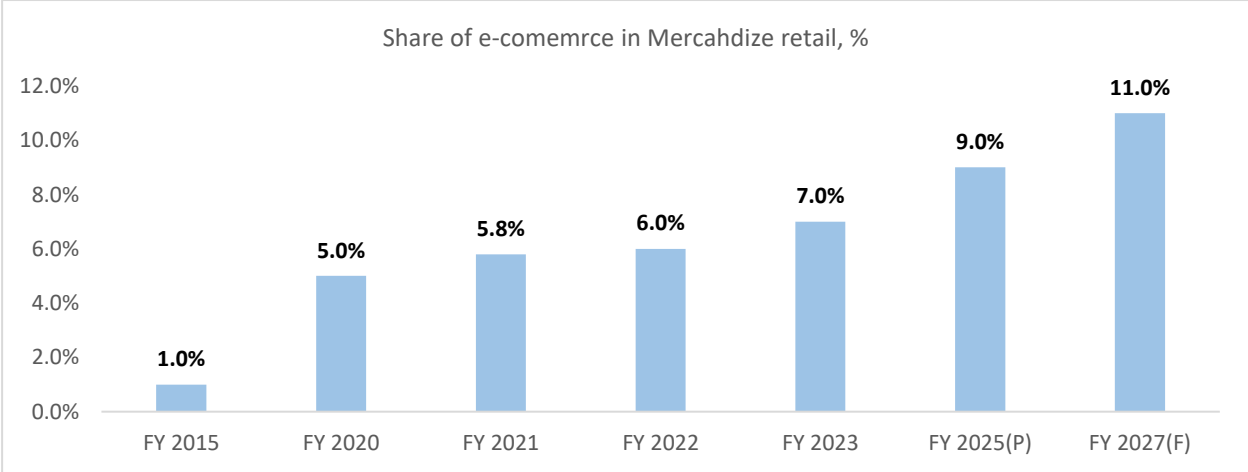
The number of online shoppers in India reached 185 Mn in 2022 (up from 50 Mn in 2015) with significant rise in shoppers belonging to the non-metro cities. These shoppers buy a variety of products online ranging from mobiles, electronics, fashion, beauty, and personal care and groceries. E-commerce platforms have led to an increase in demand of technology products in the country by allowing ease of browsing, product availability and timely delivery. Size of e-Commerce in Merchandise retail was INR 480 Bn in FY 2015 which increased to INR 5,360 Bn in FY 2023 with an increase in CAGR of 35% between FY 2015 to FY 2023. The size of e-commerce in merchandize retail is expected to grow at CAGR of 24% to reach the INR 12,480 Bn in FY 2027.

Exhibit 2.5: E-Commerce Size in Merchandise Retail by Value, INR Bn



Source: Technopak’s Analysis

Exhibit 2.6: Share of E-Commerce in Merchandise Retail, %



Source: Technopak Analysis

i. Increase in Hybrid work culture

Due to work from home culture more people than ever before started working, learning, and entertaining themselves from home, this led to a sharp incline in the number of people buying PCs, laptops, Tablets etc. Apart from consumers, businesses also provided their employees with sufficient tools and products to continue business like purchasing IT related tools to support work from home.

2.4 Size and Growth of different customer segments driving growth of Indian ICT Industry

Traditional sectors continue to drive the growth of ICT industry in India

The top five sectors that drive heavy investments into IT are Manufacturing & Natural Resources; Communications; Media & Services; Government; Banking & Securities, and Retail. The traditional sectors (heavy industries) alone contribute to ~60% to the total IT spends, although the growth of IT spending in new-age digital led businesses such as retail, education etc. is much faster than the traditional sectors. The last two years, Retail and Education sector have exhibited high growth in IT spending, partly led by pandemic driven demand for respective user groups.

Exhibit 2.7: Vertical wise IT Spending in India (INR Bn)

Sector/Year	CY 2022 (INR Bn)	% of total
Manufacturing & Natural Resources	1,560	19%
Communications, Media & Services	1,475	18%
Government	1,475	18%
Banking & Securities	1,315	16%
Retail	575	7%
Transportation	410	5%
Insurance	330	4%
Utilities	330	4%
Healthcare Providers	250	3%
Wholesale Trade	250	3%
Education	250	3%
Total	~8,220	100%

Source: Secondary Research, Primary Research, Technopak Analysis

2.5 Impact of COVID-19

The COVID-19 pandemic precipitated not only a global health and humanitarian crisis but an economic one as well. Most of the industries witnessed unprecedented and unpredictable supply chain disruptions that forced companies to build resilience into their systems to meet current and present crises. All these challenges led to fast-paced digital transformation programs, accelerated business processes, and adoption of emerging technologies to help organizations, reprioritize their investments, redesign their strategy, rethink client touchpoints, invest in data-led decision making, enable and train employees to work digitally in fulfilment centres, and deploy a resilient approach toward cybersecurity. These exceptional circumstances have emphasised the potential which digital technology entails for improving the economic resilience of the businesses. As a result of government restrictions and implementation of work-from-home measures, COVID-19 induced an increase in demand for products, solutions, services, and other offerings within the IT space.

3. Personal Computing Market in India

3.1 Size and Growth of Personal Computers and Accessories market in India

Total PC market and accessories is valued at ~INR 989 Bn in CY 2022.

The Indian Personal Computer (PC) market includes desktops, laptops, notebooks, and the accessories which includes printers, external storage, and other components. The total market size of PCs is estimated at INR 989 Bn (USD 12.36 Bn) in CY 2022 growing at 9% from CY 2015 - CY 2020 and is expected to grow at stable ~CAGR 14% from CY 2022 – CY 2025 with market size of INR 1,473 Bn (USD 18.41 Bn) by CY 2025. The Indian PC shipments grew from a total of ~9 Mn units in CY 2018 to ~15.2 Mn units in CY 2022, registering a CAGR of 14% in same period in terms of volume.

Market size of PCs including laptops, Desktops and Assembled PCs is INR 730 Bn (USD 9.13 Bn) in CY 2022 and is expected to grow at INR 1,130 Bn (USD 14.13 Bn) by CY 2025. In Assembled Desktops, the Market size in CY 2022 is INR 201 Bn (USD 2.51 Bn) and is expected to grow to INR 282 Bn (USD 3.53 Bn) by CY 2025.

Exhibit 3.1: Size of Personal Computers for CY in units (Mn)

Particular	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023 (P)	CY 2024 (P)	CY 2025 (P)	CAGR (CY 2018-2022)	CAGR (CY 2022-2025P)
PCs (including Desktops, Assembled Desktops, Laptops)	9	10	12	15	15.2	17	19	20	16.70%	9.58%

Source: Secondary Research, Primary Research, Technopak Analysis

Exhibit 3.2: Size of Personal Computers, Tablet and Accessories (for CY) (in value INR Bn)

	CY 2015	CY 2020	CY 2021	CY 2022	CY 2025 (P)	CAGR (2015-2020)	CAGR (2021-2025P)
PCs (including Desktops, Assembled Desktops, Laptops)	444	680	727	730	1,131	9%	12%
Tablets	91	76	97	110	123	-4%	6%
Accessories							
Printer	13	15	15	17	19	3%	5%
Storage	8	29	43	51	80	31%	17%
Supplies	15	47	70	81	120	26%	14%
Total	571	847	952	989	1,473	8.20%	11.50%

Source: Technopak Analysis, Secondary Research, Primary Research

Note: 1. PCs include Laptops, Notebooks, Desktops (all-in-one) and doesn't include Assembled Desktops.

2. Average price of PC in CY 2022 is INR 45,000 and in CY 2025 is INR 50,000.

3. Average price of Printer in CY 2022 is INR 4,500 and in CY 2025 is INR 5,000.



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Exhibit 3.3: Breakup of Personal Computers (by value INR Bn)

Particular	CY2015	CY 2021	CY 2022	CY 2025 (P)	CAGR CY 2021-2025P
PCs					
Laptops	266	482	484	785	13%
Desktops (All-in-one)	22	45	45	64	9%
Assembled Desktops	155	200	201	282	9%
Total	444	727	730	1,131	12%

Source: Technopak Analysis, Secondary Research

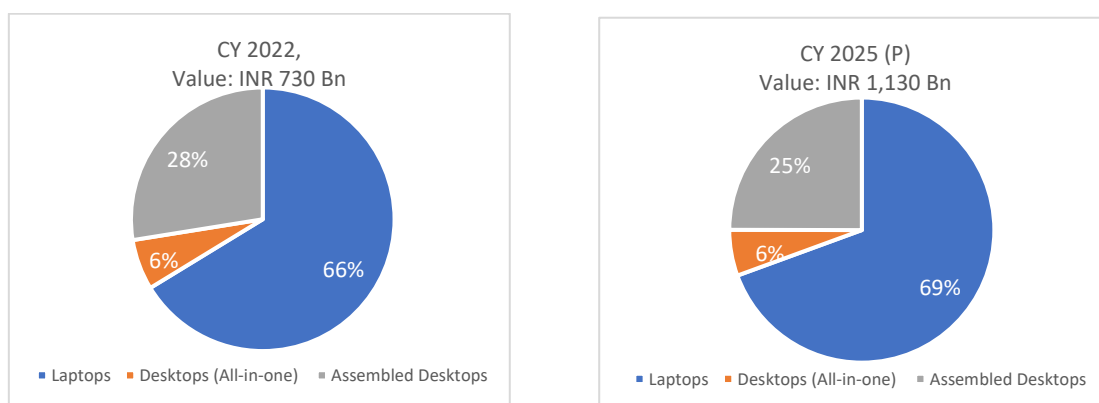
The sizable growth in CY 2020 and CY 2021 was largely due to the COVID-19 pandemic. The shift in the work and education culture from offices to homes, clubbed with increase in entertainment and gaming market, gave a push to the total addressable market of PCs and its related accessories. The sales of large format devices such as laptops and desktops, and peripherals like monitors, printers, and keyboards, have benefitted from lockdown. Due to intense severity of COVID-19 in India, these consumer behavioral changes may persist for next couple of years. Few companies, mostly startups are incorporating work from home as the way forward. If this trend continues, demand for computers and peripherals may witness continued growth.

Personal Computers

HP Enterprise is the leading player in PC Segment shipments with market share of 30% in CY 2022

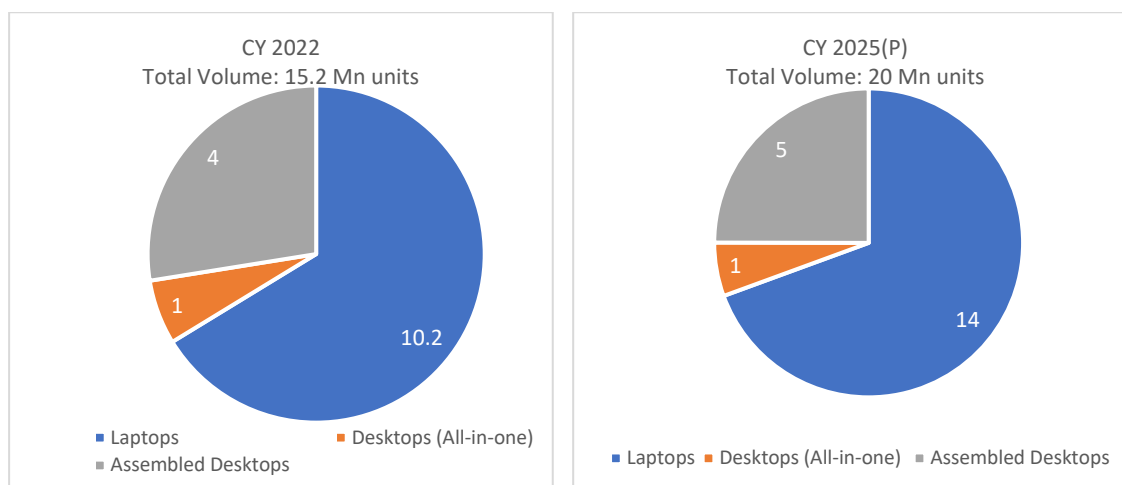
The PC segment is the largest and the key segment of the total PC and Accessories market with an average share of ~85% in CY 2022. The total market is projected to reach ~INR 1,130 Bn (~USD 14.14 Bn) by CY 2025. Global technology brands rely on the distribution partner's value-added services, their pan-India distribution network to establish and grow their product positioning and brand positioning. India is among the fastest growing, underpenetrated and strategically important market for these brands.

Exhibit 3.4: Market Share of Personal Computers (for CY 2022 & CY 2025P) (by value in INR Bn)



Source: Primary Research, Technopak Analysis

Exhibit 3.5: Market Share of Personal Computers (for CY 2022 & CY 2025P) (by volume, Mn units)



Source: Primary Research, Technopak Analysis

Exhibit 3.6: Market Share of Personal Computers (for CY 2022) (in Mn units)

Company	2022 Shipments (Mn units)	2022 market Share
HPE	4.5	30%
Dell Technologies	2.9	19%
Lenovo	2.8	19%
Acer Group	1.5	10%
Asus	1.0	7%
Others	2.2	15%
Total	14.9	100%

Source: Technopak Analysis, Secondary Research

Laptops

Laptops comprised 58% of the total PC market in CY 2022

Laptops consists of traditional laptops, notebooks, tablet PCs which are in the especially in the consumer segment. Several consumers prefer cross-functional devices that offer integrated features and capabilities in the same device. This has encouraged the development of multifunctional devices. Key players in this segment are Hewlett Packard Enterprise (HPE), Lenovo, Dell Technologies among the few others.

Desktops

India is still a very high growth market for assembled PC's i.e., Desktops

Desktops constitute 29% of the total PC market in CY 2022 including the traditional, Assembled desktops and all-in-one Desktops. Various use cases for desktops includes gaming, coding and robotics engineering, Designers, Medical Devices, and Data Analytics.

Components

Desktop primarily are assembled devices preferred for cost, ease of customization, choice of brand across various components over other PC types which can't be configured beyond a certain level.

Exhibit 3.7: Typical break-up cost of various components in an assembled PC (INR) and % Share

Components	Price (INR)	% Share
CPU	18,000	36%
Mother Board	7,000	14%
GPU	6,500	13%
Hard disk	4,500	9%
RAM	3,200	6%
Cabinet	2,500	5%
Monitor	7,500	15%
Keyboard	400	1%
Mouse	400	1%
Total	50,000	100%

Source: Primary Research, Technopak Analysis

Note: Value of various components in assembled PC sums to INR 50,000 on an average

Components industry has many leading global brands present in India; it is an entirely distribution driven business

Various components which make up an assembled PC, are distributed by trade partners which are commonly known as ICT distributors and resellers. Rashi Peripherals Limited is among the leading technology integrated national distribution partners for global technology brands in India for ICT products by volume in Fiscal 2023. It has also emerged as one leading players in components distribution and reselling business.

Exhibit 3.8: Segment Wise Market share of key Companies and Distribution Players (%) in Fiscal 2023

Key Products	Key Players	Rashi Peripherals Limited (% to total market share)	Market share of *other ICT distribution players (%)
Components			
CPU	Intel, AMD	45%	55%
Motherboard	Asus, GIGABYTE, MSI, ASRock	25%	75%
Graphic Cards	Asus, Gigabyte, Colorful, Zotac	47%	53%
Hard Drives	sea-gate, Western Digital, Toshiba	29%	71%
Peripherals & Accessories			
Pen Drives	Sandisk, HP, Adata, Sony, Strontium, Seagate	42%	58%
Keyboards and Mice	Logitech, Dell, Microsoft, HP, Lenovo	21%	79%
Monitors	AOC, Samsung, Sony, Lenovo, Dell	27%	73%
UPS	ABC, Microtek	13%	87%
Personal Computing			
Laptops	HP, Dell, Lenovo, Apple, Asus, KOC	10%	90%
Desktops	HP, Lenovo, Dell, Acer, Asus	10%	90%
Networking			
Routers	TP-link, D-Link, Tenda, i-Ball, MI, ASUS, Mercusys	33%	67%
Switches	CISCO, Netgear, Tenda, D-Link, TP-Link	10%	90%
Enterprise and Embedded Solutions			
Servers	2 Types; Branded: Dell, HP, Lenovo. Assembled: Supermicro, Asus, Gigabyte.	1%	99%

Source: Primary Research, Technopak Analysis

*Others include Redington, Ingram, Savex, Compouage etc.

Tablets

Revival in demand of tablets during and post Covid-19 pandemic

The tablets segment saw a decline in market size from CY 2015 - CY 2020 due to changes in customer's preferences towards smart phone which provided multi utility. However, the growth of tablets revived between CY 2020 and CY 2021 at YoY growth of 28% in shipments, primarily due to pandemic related factors such as education being imparted through tablets, institutional and government driven demand etc. As of CY 2022, tablets have a market size of ~INR 11,000 Cr (~USD 1.38 Bn). The market is projected to reach ~INR 12,326 Cr (~USD 1.64 Bn) by CY 2025.

Exhibit 3.9: Market Share of tablets, CY 2022 (Volume in Mn)

Company	2022 units shipment	2022 Market Share (%)
Lenovo	1.7	39%
Samsung	1.5	33%
Apple	0.6	14%
iBall	0.1	3%
Huawei	0.1	3%
Others	0.4	8%
Total	4.4	100%

Source: Secondary Research, Primary Research, Technopak Analysis

Tablets have proved to be the most versatile device with number of new and unique use-cases

Exhibit 3.10: Sector wise use cases of Tablets

Sector	Use cases
Education	Remote learning, coding, robotics, online tuitions
Healthcare	Maintaining customer database, registrations, prescriptions
Transport	Ticketing, counter services
Hospitality	Digital menus at restaurants, feedback
Media and Entertainment Industry	OTT, Streaming, Music, Games, e-book
Communications	Social media, email messaging, meetings, web browser, News
Production activities	Editing videos, writing blogs

Source: Technopak analysis

Tablets shipments witnessed slight dip in CY 2020, however, during Covid-19 and thereafter the demand for tablets rose mainly aided by increased utility to support e-learning and growth of hybrid model work culture which led to growth in the tablet's shipments in CY 2021. Emerging sectors such as, education, healthcare, hospitality, transport etc. have also contributed to the uptake in overall tablet market in India.

Storage Devices

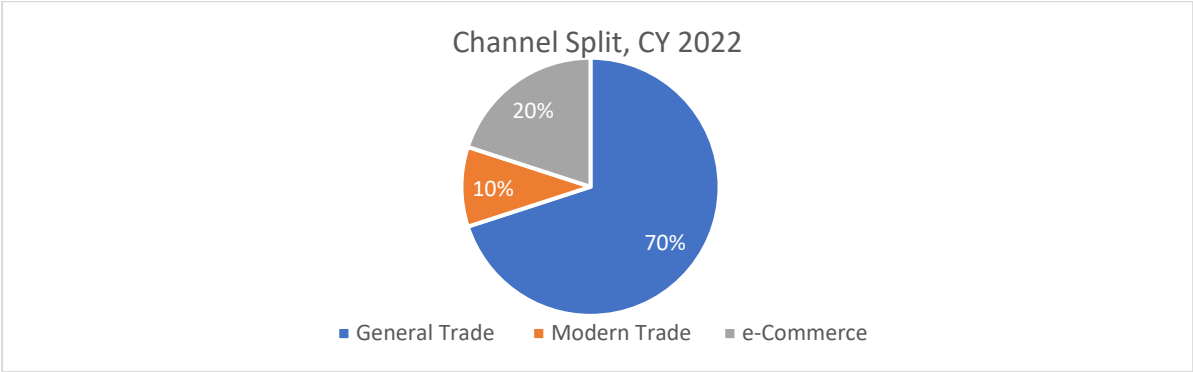
The storage device segment share increased from 2% in CY 2015 to 5% in CY 2022 in PCs and Accessories segment growing at CAGR of 30% in the same period. The market is projected to reach ~INR 150 Bn (~USD 2 Bn) by CY 2025. Key players in storage devices are Western Digital-SanDisk, Seagate etc. Most preferred retail channels to purchase external storage are Offline including General and Modern trade with 80% share and rest is sold via e-Commerce channel. SanDisk continued its leadership with 67% market share. HP stood at the second spot with 7% market share.

Exhibit 3.11: Market share of key players in Storage Devices, by value (CY 2022)

Company	Market share (%)
SanDisk	67%
HP	7%
Others	26%
Total	100%

Source: Secondary Research, Technopak Analysis

Exhibit 3.12: Retail channel split for storage devices, CY 2022, by Value

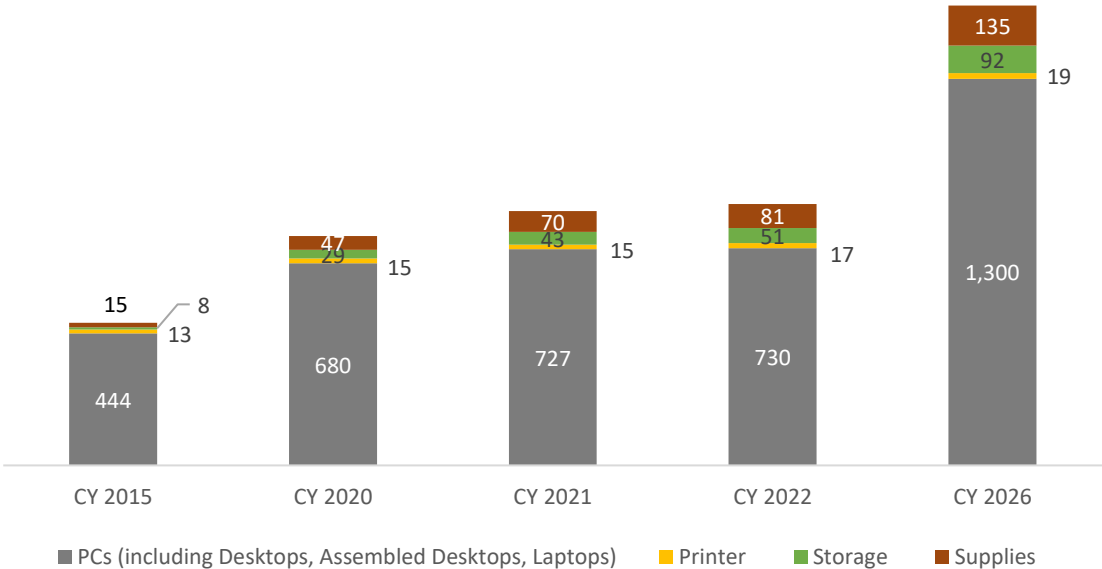


Source: Primary Research, Technopak Analysis

General trade: General trade or traditional trade are stores that are owned by individuals and usually cater to local customer requests.
 Modern Trade: Modern trade is usually a chain store such as hypermarkets, supermarkets, and minimarkets whose operations (inventory, logistics, merchandising) are more organized than general trade.
 e-Commerce: E-commerce (electronic commerce) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet.

a. Need for accessories for various user segments

Exhibit 3.13: PCs and Accessories trendline (INR Bn)



	CAGR (2015-2022)	CAGR (2022-2026P)
PCs	7%	16%
Printer	4%	3%
Storage	30%	16%
Supplies	27%	14%

Source: Secondary Research, Primary Research, Technopak Analysis

Gamers

The Indian Gaming Market was valued at INR 249 Bn (USD 3.11 Bn) in CY 2022 and is expected to cross INR 517 Bn (USD 6.46 Bn) by CY 2028, registering a CAGR of 13%. At present, mobile gaming is contributing 90% to the total gaming market and rest is covered by the computer gaming segment. There are 3 main categories of pcs used for gaming, the first being a beginner PC which costs around INR 30,000-40,000. These include older generation CPUs and GPUs making it affordable. The mid-range costs between INR 40,000- 1,00,000 and uses the newer generation components but not the top of the like high-end components. The ultra-high-end pc consists of the top of the line and newest available components making its cost blow up to INR 1,00,000+ as the components are extremely costly and hard to attain. In a fully maxed out pc the cost could reach upwards of INR 2,50,000.

Coders and Robotics Engineers

Programmers who code, tend to spend heavily on various components of the personal computer, majorly the CPU. A coding CPU is required to have multiple cores for the intensive processing and multitasking done by the programmer. The robotic market in India has achieved huge growth from last few years. Robotic market in India stood at 5,400 units in 2022, and is expected to touch 11,760 units by 2025, growing at CAGR of 29.62% during 2022-2025 period.

Designers

Design industry in India is growing at Staggering rate of 20% annually. The industry was worth INR 183 Bn (USD 2.44 Bn) in CY 2020 and has grown to INR 275 Bn (USD 3.44 Bn) in CY 2022. Designers use very complex software which requires heavy computing power in turn requiring a very powerful CPU to process any 3D rendering tasks that need to be taken care of. Someone like an architectural designer would require a very expensive top-of-the-line CPU, whereas someone using the PC for 2D graphic design focuses more on the graphics card to accurately depict designs and the color scheme. Animations designers require the most computing power as they require both, top-of-the-line GPUs and CPUs. A setup for designing purpose can range depending on usage; 2D graphic designing usage will suffice at INR 30,000- INR 35,000 while for more complex work with finer detailing would require a PC costing between INR 35,000- INR 50,000. In situations where designers need to render 3D designs like architecture and animations need a top-of-the-line powerful components which brings the cost from INR 70,000 to INR 2,50,000.

Medical Devices

India is among the top 20 markets for medical devices worldwide. The market for medical devices is expected to grow to INR 4,136 Bn (USD 51.7 Bn) in FY 2028 from INR 909 Bn (USD 11.36 Bn) in FY 2023, witnessing a CAGR of 35.4%. Healthcare organizations are gradually transforming their IT infrastructure to support their healthcare analytics, which requires advanced processing power. Graphics Processing Units (GPUs) are becoming more popular as organizations require tools that would allow them to process massive amounts of data. GPUs have recently gained popularity in healthcare because of their precision in medicine.

Data Analytics Companies

In the past years, India has experienced major growth in the data analytics industry due to the rise of internet penetration. The Indian data analytics industry reached a market value of ~INR 6,300 Bn (USD 80 Bn) in FY 2023. Data Science requires high-performance processing which enables AI to learn from images and sounds, using many image and sound inputs for deep learning processes. The powerful processing built-up power of the GPU is also helpful in the management of large datasets including billions of records. The market size of analytics industry is projected to be ~INR 16,600 Bn (USD 208 Bn) by FY 2027 growing at CAGR 27%.

b. India and Global Trends

1. Tablets are being designed to replace Desktops

The PC category comprising of laptops, desktops, and tablets in which the desktops has been declining while the laptop and tablet market grows at a steady rate. Due to the tablet's multiple usage cases in various sectors, many technology companies are introducing advanced tablets to replace desktops. The decrease in the usage of desktop computers is encouraging computer hardware manufacturers to invest in R&D to produce better tablet computers increasing sales.

2. Technology advancement

The PC and accessories market requires ongoing R&D investment to develop smarter alternatives and advancements to the previously existing lines of technology. The shift in type of components used in there and its accessories such as the HDD being replaced by SSD has led the to faster data processing time as well as a faster boot time allowing the ease of use of the gadgets. Similarly, the latest technology such helium-filled drives use less power to spin the disks, run cooler, and can pack in more disks resulting in faster data processing time while decreasing the stress on the CPU. The constant advancements lead to much faster and newer systems replacing the older ones.

3. Preference towards laptops

The recent priority for laptop manufacturers puts a lot of emphasis on how sleek, lightweight, and efficient their laptops are. The Ultrabook category has made way for laptops to be much lighter while managing their high computing power. This has been made possible due to a mix of factors including minimizing the size of ICs (Integrated Circuit), decreased port sizes, chassis made up of much lighter materials and the advancement of technology in the batteries used in the laptops.

Exhibit 3.14: India and key other markets comparison (for CY 2022) (in Mn units)

Country	India	China	USA
PCs (Laptops and Desktops)	15.2	48.5	74.07

Source: Secondary Research, Technopak Analysis

The Indian market for PCs including laptops, desktops, notebooks, and workstations is growing but is still under penetrated as compared to other developing countries such as China and developed countries such as USA in terms of shipment volumes. A similar trend can be noticed in the tablets segment. The growing potential in the demand of PCs and its accessories in developing economies such as India and China are highly regarded by the key players in the industry. A larger section of these countries is still adapting to the use of technology and products such as desktops, laptops and smartphone inducing a large headroom for growth along with the accelerating push towards digitisation. Storage devices in PCs includes SSDs, HDDs, optical disk, pen drives, and personal cloud storage drives.

3.2 Key Players and their routes to market in India

Most of the key players in the PC market have made an entry in the Indian market in the 2000s, except HP being pioneer in entry to India in 1964. Many brands entered India through set up of a manufacturing unit in the country, hence also giving employment opportunities to the public.

Exhibit 3.15: India and key other markets comparison

Key Players	Brands	Year of Entry	Route of Entry	Future
Lenovo	IdeaPad, ThinkPad, Lenovo Yoga series, Lenovo Legion, Lenovo ThinkBook, Lenovo Flex, Lenovo V14, ThinkCentre, Ideacentre, ThinkStation, ThinkVision	2005	Acquired IBM's PC business which led to access to IBM's customers and its strong distribution in various countries including India. As of 2021, Lenovo has 400 EBOs and a total of 1000 offline touch points in India	
HP Inc.	HP Pavillion, HP Envy, OMEN, Victus, HP Chromebook, HP Spectre, HP Notebook, HP Z book, HP 340s, HP 14&15s series, LaserJet, DeskJet, DesignJet, ScanJet, Smart Tank, Ink Tank	1964	HP's presence in India began in 1964 and started selling their products in Indian markets through Scientific Instrument Company Ltd.	In CY 2022 HP launched their gaming series laptops with brands like OMEN 16, OMEN 45L, 40L, 25L, Victus 16 and Victus 15L.
			In 1970 Blue start Ltd. Partnered with HP as distributor of its products in India.	Plans to launch OMEN 17 and Victus 15 (gaming desktops).
			HP has more than 400 EBO's in India.	
Dell	Inspiron, Alienware, Vostro, XPS, G Series	2000	Set up its first factory in Chennai, India to manufacture products locally. The company expanded its presence by setting up EBOs in the country and had 680 EBOs in CY 2019	By 2030, Dell plans to reuse or recycle an equivalent product for every product bought by a customer.
	Monitors: 4k Monitors, Curved Monitors, Ultra Sharp Monitors, Gaming & Alienware Monitors, Business Monitors			Dell plans to make, 100% of their packaging from recycled or renewable material.
Apple INC.	MacBook Air, MacBook Pro, iMac, Mac mini, Mac Studio, Pro Display XDR, Apple Watch, AirPods, AirTag, HomePod Mini	2007	Entered through offline channels with exclusive distribution.	Company has plans to open first company owned retail store in India
			Started manufacturing via Foxconn's plant at Chennai.	

			The brand has 150 EBOs in CY 2021 and distribution through e-commerce channels
Acer Group	Aspire 3, Aspire 5, Aspire Vero, Extensa, Swift X, Swift 3, Swift 5, Nitro, Predator Helios, Nitro, Trave Mate, Chrome Book, Acer Aopen, Acer One	1999	Acer's distribution strategy is omnichannel mix and to increase the market share, Acer is planning to expand its manufacturing, product line, and retail footprint in India.
ASUS	Zenbook, Vivobook, Chromebook, Asus TUS, ROG, ROG Strix, ASUS Everyday AiO, ProArt, ZenScreen	2014	<p>Asus plans to standardize India's education space with Chromebooks and plans to launch higher spec models above Rs 30,000 in CY 2022.</p> <p>ASUS entered commercial PC market in 2020.</p> <p>As of 2021, ASUS had ~150 EBOs.</p>

Source: Secondary Research, Primary Research

3.3 Key Growth Drivers

Booming Gaming Industry in India

The India Gaming Market was valued at INR 249 Bn (USD 3.11 Bn) in CY 2022 and is expected to cross INR 517 Bn (USD 6.46 Bn) by CY 2028, registering a CAGR of 13% during the forecast period. With the world's largest youth populations, India is expected to become the world's leading market destinations in the gaming industry. This is a huge driving force for the PC and components market as gamers heavily rely on high end PCs and high-end components to always have the competitive advantage as well as the ability to play newer games.

Increasing data volume

Data volume that is being created by personal computers and business operations has been rapidly increasing as technological advancements occur and hence more data is accumulated leading to the requirement of greater storage. Total data generated in CY 2022 was 97 zettabytes (ZB) and total data generated worldwide is projected to reach 181 zettabytes (ZB) by CY 2025 growing at CAGR of 23.11%. To manage this rising data volume, the demand for storage devices from both corporate and end consumers is expected to drive the computer hardware market.

Government of India PLI Scheme

Government of India's Production Linked Incentive (PLI) scheme proposes to provide Incentives to boost domestic manufacturing and attract large investments in IT Hardware value chain with target segments including laptops, tablets, all-in-one PCs, and servers and boost the export market for the same. In Electronic/Technology Products and Telecom & Network products, the approved financial outlay over the five years period is INR 122 Bn.

India has been seen as an attractive destination with low-cost skilled and unskilled labour and a challenging environment. India became the favourable investment destination due to significant rise in global rankings in recent times. Previously, India's electronics sector was not regarded as a top destination by decision makers owing to poor demand. With the recognition of electronics as a key segment for policy focus, this situation has changed. The National Policy on Electronics (NPE) emphasised local value addition and created an enabling environment. Several policies related to manufacturing such as Make-in-India, attracted the interest of both global and domestic companies. Few factors favourable to electronic manufacturing are stable government,

China plus one strategy, creation of National Manufacturing Zones (NMZ), Electronics Manufacturing Clusters (EMC) are helping India to become electronics manufacturing hub in global.

Affordable mobile data cost

India is known to have one of the cheapest mobile data plans across the world. The country falls among the top 30 countries to have the cheapest mobile data. With the affordability of cheap 4G data, there's an advent of a new digital age for the country. With this affordable data cost the penetration of internet has deepened pan-India, hence helping with the purchase of electronic products like PCs, tablets etc.

Exhibit 3.16: Average mobile data charges/GB (in USD) as of CY 2022

India	China	USA	Singapore	Japan	UK	UAE	Spain	Hong Kong	Germany
0.17	0.41	5.62	0.61	3.85	0.79	4.29	0.60	1.25	2.67

Source: Secondary Research

Indian Governance getting digitalized

Digital India is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. As a part of the scheme the digitalization of Indian governance also took place, leading to the increased demand of electronic product in the country which were also mandated by the government with this step. Over 109.6 billion dollars were spent on the information technology industry in India in CY 2022. It is estimated that India will spend over USD 112 billion on IT by CY 2024. The GDP of the country was boosted by the IT-BPM sector by roughly 7.4%.

Increasing internet penetration

Exhibit 3.17: Total Internet users (Mn)

Particulars	FY 2010	FY 2015	FY 2020	FY 2021	FY 2022	FY 2023	FY2025 (P)	CAGR (2015-2023)	CAGR (2023-2025P)
Total Internet Users (Mn)	72	350	687	778	825	846	900-1000	~12%	~6%

Source: Secondary Research

The number of active Internet users in India is expected to increase at a CAGR of ~6% in the next two years and touch ~900-1000 Mn by FY 2025 from around 846 Mn in FY 2023. The digital ecosystem will need to evolve to address the specific needs of this emerging demography. Vernacular, voice, and video will emerge as game-changers for the digital ecosystem over the next few years.

Penetration of personal computing devices

Exhibit 3.18: PC Penetration in numbers (Mn)

Particular	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023P	CY 2024P	CY 2025P	CAGR CY 2018-25	CAGR CY 2022-2025P
PCs (including Desktops, Assembled Desktops, Laptops)	9	10	12	15	15.2	17	19	20	12.08 %	9.58%

Source: Secondary Research

The PC penetration is expected to increase by 31.6% in the next three years and touch 20 Mn by CY 2025 from around 15.2 Mn in 2022. Increase in PC shipments is expected due to accelerated digital transformation of multiple industries and processes.

Tailwinds from EdTech sector

Indian edtech start-ups have received total investment of USD 2.4 Bn in CY 2022, down from USD 4.7 Bn in CY 2021. Various Government initiatives are being adopted to boost the growth of distance education market besides focusing on new education techniques, such as E-learning and M-learning. The New Education Policy, 2020, has also provided policy impetus to the Edtech sector by recognizing the role of technology in education. The rise in Edtech will lead to growth in the consumption of IT systems like laptops, Tablets, Desktops etc.

Multiple Devices and connections per person

Exhibit 3.19: Multiple devices and connections per person (CY 2022)

Continents	Devices and connections per person
Asia Pacific	3.1
Central and Eastern Europe	4
Latin America	3.1
Middle East and Africa	1.5
North America	13.4
Western Europe	9.4

Source: Secondary Research, Technopak Analysis

North America leads with average number of devices and connections at 13.4 followed by Western Europe at 9.4 as on CY 2021. Number of devices and connections per head in Asia Pacific stands at 3.1 as on CY 2022 from 2.1 in CY 2018. The devices include PCs, Laptops, smartphones, tablets and IOT enabled devices like smartwatch, smart speaker etc.

3.4 Key Trends and Demand of DIY PCs

The DIY trend initially started in the 90s as the IBM computers being available at that time were moreover copied versions of older models with slight improvement and an increased price. This is how the DIY trend initially started, it started to pick up pace in the 2000s and has had numerous more reasons added to the list which makes it a better buy than an assembled workstation.

1. Increased price - Instead of having a markup on the final combined product, companies usually have a markup on every component that is installed in the PC, this in turn skyrockets the price of the same PC if built by oneself by 35-40%. It also adds up the brand value and assembly costs which can be avoided if it is assembled by the consumer itself by procuring individual components and assembling them together.
2. Ease of repair - If a consumer is having issues in the PC, they can run a few tests to determine which part is not functioning well and can be replaced by the consumer itself free of cost if it is under warranty
3. Increase in Internet Penetration - The penetration of internet has deepened in India which has led to growth of the electronic industry. With the influx of more and more tech savvy individuals the knowledge and the reasons as to why a DIY PC should be considered has increased. The consumers can make a more informed decision. India has 861.47 Mn Broadband subscribers as on 30.06.2023 (TRAI's Telecom Subscription Data report dated 22.11.2022).
4. Social media boom - Till 10 years back when YouTube and other social platforms were not as widespread people did not have the knowledge about what components to choose or how to go about the assembly process.

3.5 Impact of COVID-19

COVID-19 has impacted the whole world, including the daily lives of citizens and the flow of businesses. One of the many major industries that has been impacted is the PC market, which has gone through a few drastic changes.

- In COVID-19 the electronics industry saw a decline during the first few months of 2020, when China, a major centre for the manufacturing of PCs, shut down due to the lockdown caused by the coronavirus outbreak, with PC manufacturing plants closing around the country, sales decreased further.
- The Covid-19 hit China and started making its way around the world in early CY 2020. While a shortage of PCs ensued due to the factory closings in China, demand for at-home computers began to skyrocket. India's personal computer (PC) market grew 44.5% YoY in CY 2021, with shipments of desktops, notebooks, and workstations reaching 15 Mn units.

Due to work from home culture more people than ever before started working, learning, and entertaining themselves from home, this led to a sharp incline in the amount of people looking for computers. Those who had to sustain their livelihood and keep themselves occupied during the lockdown were not the only consumers, but also businesses had to provide their employees with sufficient tools to keep their workflow going at home. As a result, the demand for gaming PCs, computer upgrades and other solutions has increased. ICT Distributors like Rashi Peripherals Limited were the one of the first distribution companies to resume business operations under the safety norms of respective State governments while majority of the businesses halted their operations temporarily especially during the first phase of Covid-19.

4. Mobile Phone and Accessories in India

It was in the year CY 1995 when first mobile phone call was made in India. The first call was on GSM network between two Nokia devices. The decade of 90's witnessed the Telecom revolution in India. By CY 2002, CDMA was introduced and since then the industry grew in leaps and bounds.

By September CY 2004, the mobile phone connections crossed the number of fixed line connections in India. However, it took another 10 years for the mobile phone to pick up steam. By year CY 2014, Internet, and data pricing and due to entry of Chinese made handsets, mobile communication became ever affordable. Chinese brands such as Xiaomi, Vivo, Oppo etc. quickly overtook home ground manufacturers such as Micromax, Lava, Intex etc. Parallely, the premium mobile phone market led by Apple, Samsung, Blackberry was also gained traction. The below exhibit tracks the journey of mobile communication in India.

4.1 Overall Size and Growth of the Mobile Phones market in India

Mobile Phones

Market size of smartphones in India was ~INR 2,050 Bn (~USD 27.33 Bn) in CY 2022 and has grown at a CAGR of 11.4% from CY 2020 to CY 2022. It is estimated that by CY 2026, market size of smartphones is likely to reach ~INR 3,115 Bn (~USD 38.9 Bn) growing at a CAGR of 7% between CY 2022 and CY 2026.

Exhibit 4.1: Mobile Phones market size in India (INR Bn) (CY)

Segment	CY 2015	CY 2020	CY 2021	CY 2022	CY 2026 (P)	CAGR (2015-2022)	CAGR (2022-2026P)
Market size (INR Bn)	800	1,910	2,050	2,372	3,115	17%	7%

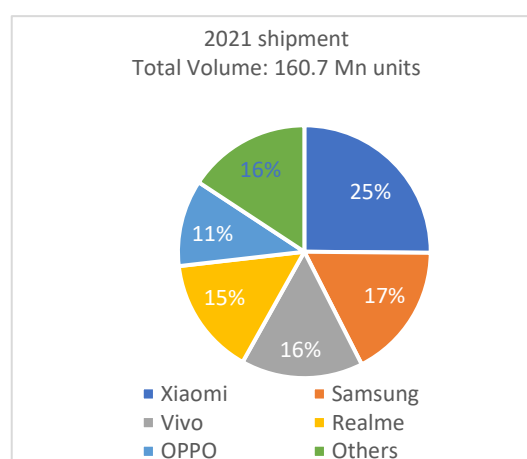
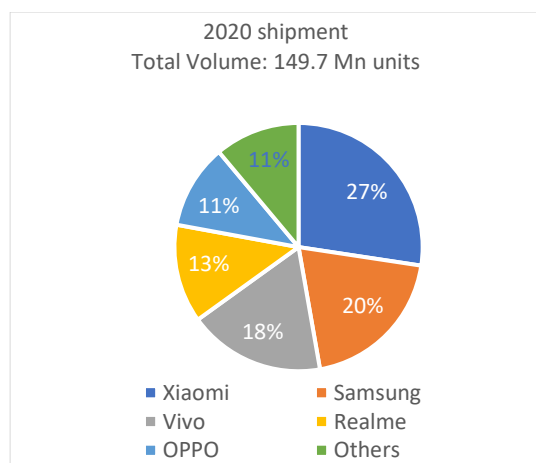
Source: Secondary Research, Technopak Analysis. Note: - Mobile Phones includes feature phones size also.

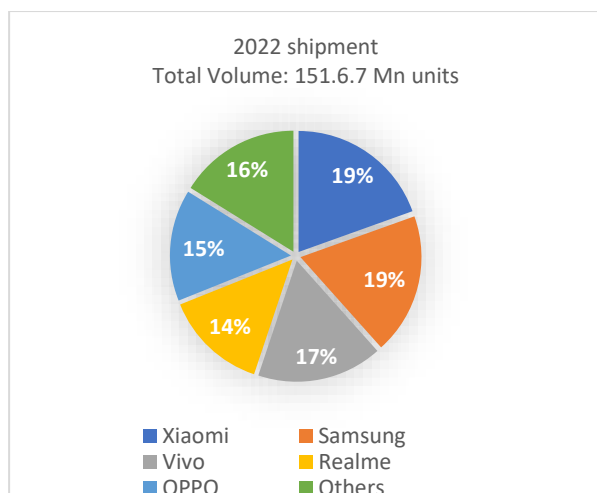
Exhibit 4.2: India Smartphone Market, Shipments in Mn (CY), by value

Companies	2020 units shipment	2021 units shipment	2022 units shipment	YoY unit change (2020-2021)	YoY unit change (2021-2022)
Xiaomi	41	40.4	29.6	-1.5%	-26.7%
Samsung	29.7	27.9	28.6	-6.1%	2.5%
Vivo	26.7	25.1	25.4	-6.0%	1.2%
Realme	19.2	24.2	20.9	26.0%	-13.6%
OPPO	16.5	17.8	22.6	7.9%	27.0%
Others	16.6	25.3	24.5	52.4%	-3.2%
Total	149.7	160.7	151.6	7.3%	-5.7%

Source: Secondary Research, Technopak Analysis

Exhibit 4.3: India Smartphone Market, Shipments in Mn (CY)





Source: Secondary Research, Technopak Analysis

The growth in shipment of mobile phones and smart phones is driven by digital literacy, internet connectivity, proliferation, and acceptability of mobile commerce. This growth has led to India emerging as the second largest market for smartphones globally, after China. During Pandemic, the demand for smartphones increased significantly, owing to increasing trend of remote learning, increasing time spent indoors, and adoption of social media gaming as form of recreation. Demand for features such as incorporation of 5G in budget phones, better quality camera, battery, and processors will keep the mobile phones market afloat. The large feature phone base will remain crucial but elusive to the smartphones markets in the absence of any affordable offerings at the entry level. However, notable brands have either exited the Indian market or significantly downsized their operations. For instance, Huawei pulled out its former subsidiary Honor from the Indian market in 2022.

4.2 Size and Growth of Accessories and Wearables in India

Mobile Accessories Market in India

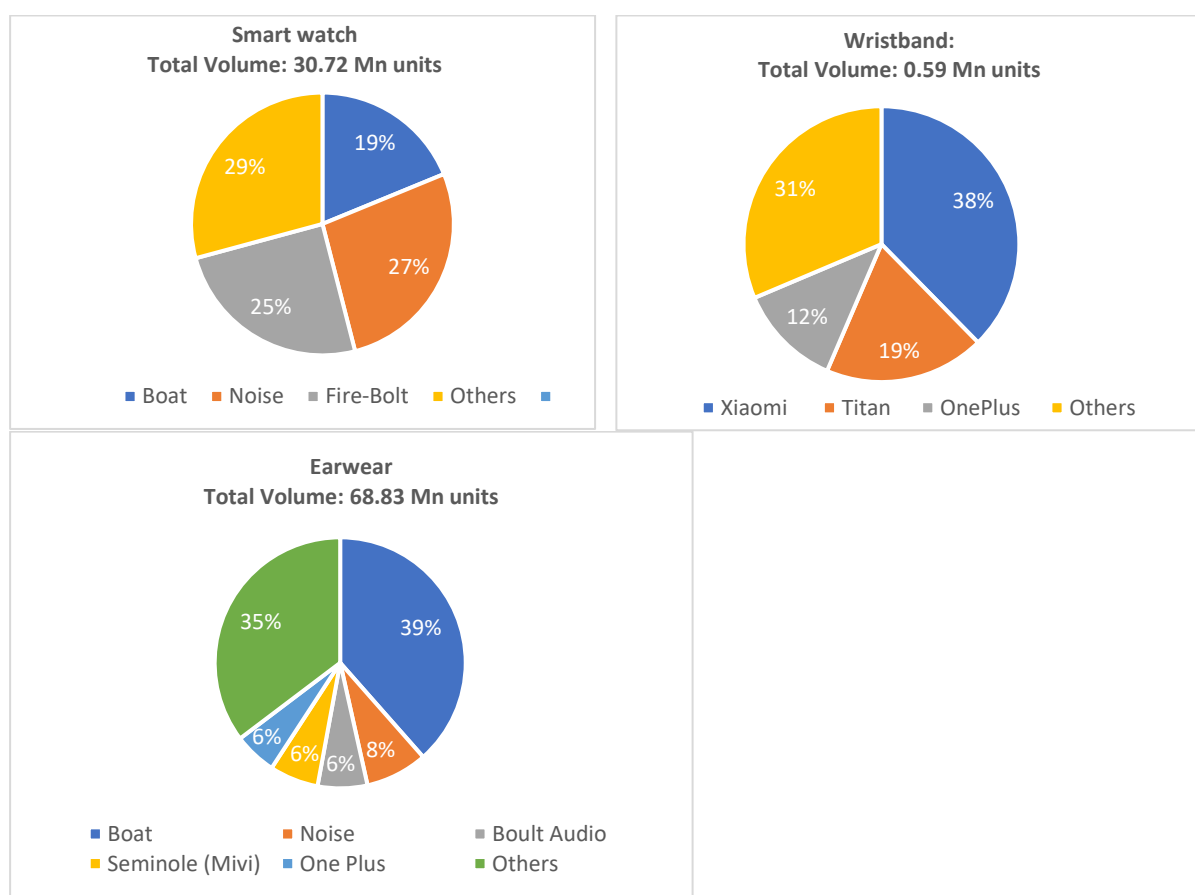
Mobile accessories market includes chargers, cables, protective cases, memory cards and power banks etc. and it has been evolving along with the rising smartphone demand in the country. Between CY 2018 and CY 2020, Mobile Accessories market in India grew at a CAGR of 11%. With increasing number of smartphone penetration across Tier2+ markets in India, the market for accessories is expected to grow at a CAGR of 13% till CY 2025 to reach INR 315 Bn (USD 4.2 Bn). At present the mobile accessory market is driven by the unbranded segment. As the market matures, the mobile accessories segment is projected to see an increase in the number of brands entering this space. The wearables market comprises of activity bands and smartwatches is expected to grow at CAGR 23% to reach size of INR 195 Bn (USD 2.6 Bn) by CY 2025 from INR 105 Bn (USD 1.4 Bn) in CY 2022.

Exhibit 4.4: Total market sales of Wearables, by value (INR Bn)

Segment	CY 2018	CY 2020	CY 2021	CY 2022	CY 2025 (P)	CAGR (2018-2020)	CAGR (2020-2022)	CAGR (2022-2025)
Mobile Accessories	135	165	188	218	315	11%	15%	13%
Wearables	15	23	30	105	195	24%	114%	23%
Hearables	98	158	188	253	525	27%	27%	28%
Total	248	345	405	576	1035	18%	29%	22%

Source: Secondary Research, Technopak Analysis
1 USD = INR 75

Exhibit 4.5: Market share of earwear, wristband and smartwatch for CY 2022, by volume (Mn units)



Source: Secondary Research, Technopak Analysis

4.3 Evolving Competitive Intensity and Market Consolidation - Key Players

Total mobile phone shipments in India were 152 Mn units in CY 2022 which was down by 5.7% YoY (year-over-Year). Xiaomi remained the market leader with 20% market share followed by Samsung achieving 19% market share. Among the top 5 brands, OPPO attained a growth rate of 27% YoY and achieved a volume shipment of 22.6 Mn units in CY 2022.

Exhibit 4.6: India Smartphone Market, Shipments in Mn (CY)

Companies	2020 Shipment	2020 Market Share	2021 Shipment	2021 Market Share	2022 Shipment	2022 Market Share	YoY unit change (2021-2022)
Xiaomi	41	27%	40.4	25%	29.6	20%	-26.7%
Samsung	29.7	20%	27.9	17%	28.6	19%	2.5%
Vivo	26.7	18%	25.1	16%	25.4	17%	1.2%
Realme	19.2	13%	24.2	15%	20.9	14%	-13.6%
OPPO	16.5	11%	17.8	11%	22.6	15%	27.0%
Others	16.6	11%	25.3	16%	24.5	16%	-3.2%
Total	149.7	100%	160.7	100%	151.6	100%	-5.7%

Source: Secondary Research

CY 2021 started strong with increased demand carried forward from CY 2020 and positive market sentiments but a severe second wave of Covid-19 impacted the supply chain and hence impacted the growth. Constrained supplies resulted in low inventories across channels in the second half of the year, which usually has a higher demand owing to the festive season in India.

Retail Footprint of leading Mobile Phones, Tablets and Accessory players in India

In retailing of mobile phones and related product categories, online e-commerce led marketplace model retains 53% of the share in the total smartphones distribution sales in the India. E-commerce is much cost effective way of distribution as compared to building up physical network, it helps companies to cut selling price and give exciting offers to end consumers along with more financing option.

Exhibit 4.7: Retail Channel split of IT & Accessories and Mobile & Accessories (%)

	Laptops and Desktops			IT Accessories			Mobile and Accessories		
	CY 2015	CY 2021	CY 2022	CY 2015	CY 2021	CY 2022	CY 2015	CY 2021	CY 2022
General Trade	85%	70%	63%	80%	70%	70%	80%	50%	29%
Modern Trade	10%	12%	15%	15%	10%	10%	12%	20%	18%
e-Commerce	5%	18%	22%	5%	20%	20%	8%	30%	53%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

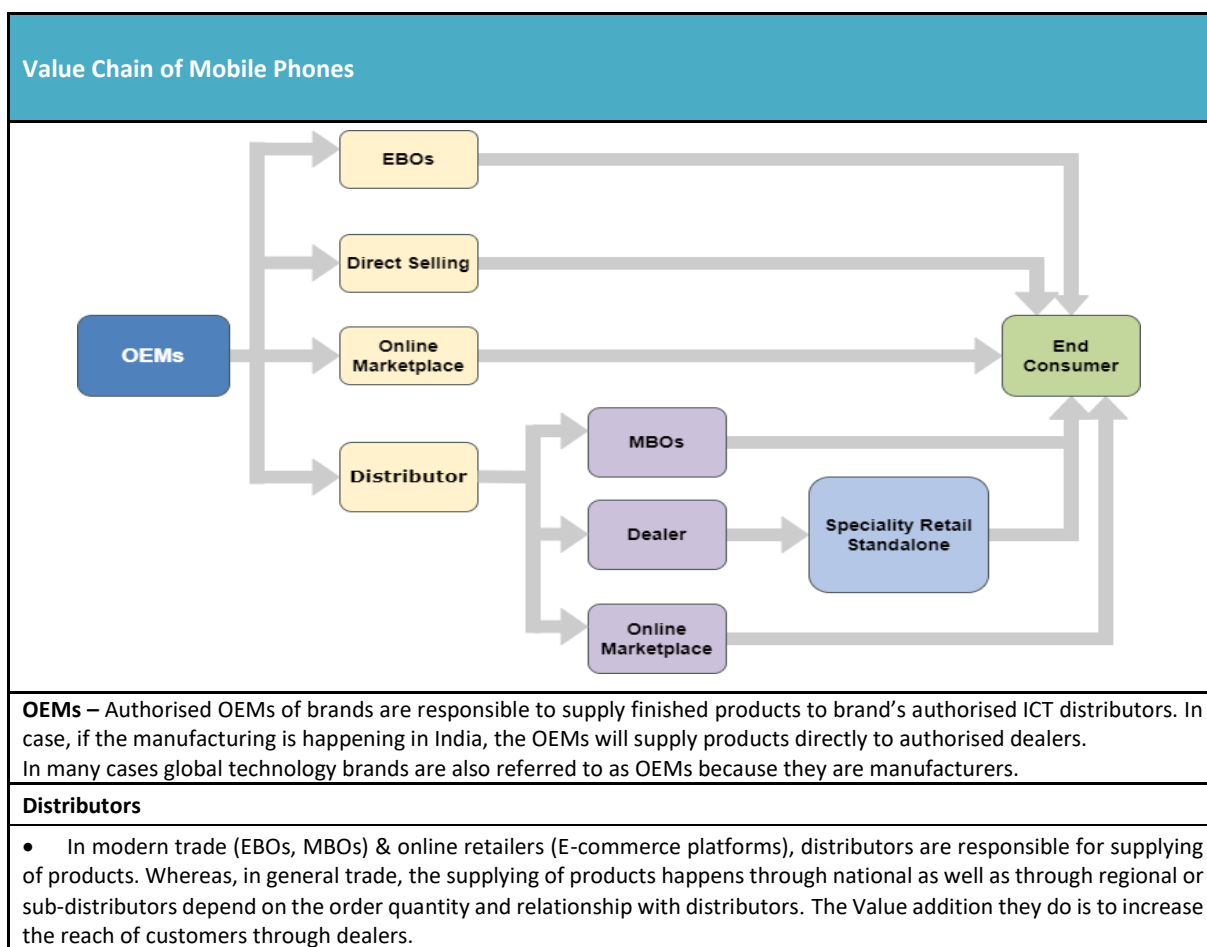
Source: Primary Research, Technopak Analysis

General trade: General trade or traditional trade are stores that are owned by individuals and usually cater to local customer requests.

Modern Trade: Modern trade is usually a chain store such as hypermarkets, supermarkets, and minimarkets whose operations (inventory, logistics, merchandising) are more organized than general trade.

e-Commerce: E-commerce (electronic commerce) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet.

4.4 Value Chain Analysis



<ul style="list-style-type: none">• Strengthening their partners network by providing them training frequently to understand them right features and specifications of their offerings

<ul style="list-style-type: none">• Distributors are also responsible for adding new retail channel partners to improve their top line

Online Marketplace

It serves as a platform which brings sellers and buyers in at same digital platform and helps sellers to expand their reach. Order processing, payment collection, release and shipment tracking is served as value addition in the supply chain of Mobile phones.

4.5 Impact of Covid

The pandemic has brought about a new normal and nudged people to adopt digital ways of interaction. The high consumer demand post-lockdown, as well as strong promotions on online channels and new use cases like e-learning and work from home, digital gaming as a form of recreation drove demand for smartphones significantly in second half of CY 2020. Second wave of covid during April and May 2021 halted the businesses recovery. There was some business recovery and revival of consumer sentiment from June 2021 onwards with pent up demand coming from CY 2020 once vaccination drive started across the country. India's smartphone market registered its shipments of 161 Mn smartphones in CY 2021 up by 7% YoY (IDC's Worldwide quarterly Mobile phone tracker). CY 2021 witnessed supply constraints due to a multitude of reasons – a second and more virulent COVID-19 wave, global component shortages and price hike due to these shortages. The high demand fuelled by increasing smartphone affordability, Consumer demand for high end smartphones with features like better camera, battery, and transition from 4G to 5G will likely continue to drive growth of mobile phones.

5. Enterprise IT and Cloud

5.1 Enterprise IT and Cloud in India

Cloud computing, most advanced mode of operations for businesses, is a system or a network of remote servers hosted on the internet to store, manage and process data. Cloud environment can be accessed from remote locations through internet connected devices like Desktop, Laptops and Smartphones. Cloud infrastructure is present in all cloud computing deployment models namely: private cloud, public cloud, and hybrid cloud. Enterprise IT and cloud infrastructure in India is adopted mainly by sectors such as IT, e-commerce, communication and media, telecom, manufacturing, government, transport, and logistics. India's public cloud services market includes infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS) solutions, and software-as-a-service (SaaS). The Indian market is among the fastest growing in public cloud service providers due to the demand from large enterprises, small and medium businesses in the country. The overall business of public cloud services market was INR 638 Bn in CY 2022 and is expected to reach ~INR 1,150 Bn by CY 2026, growing at a CAGR of 16% for next the 4-year period CY 2022 to CY 2026. As compared to pre-covid level (Pre CY 2020), the revenue in Public cloud service market experience a significant growth of 89% in CY 2021 and furthermore, it grew by another 25% in CY 2022, reaching a value of INR 638 Bn during the period, thus, owing to strong demand by businesses who are opting to virtualization and remote operations for continuity of business activities. The top two service providers holding more than 45% of the Indian Public cloud services market are Amazon Web services (AWS) and Microsoft (Azure).

Exhibit 5.1: Public Cloud Services (PCS) Market Revenue in India (in INR Bn)

Particular	CY 2018	CY2019	CY 2020	CY 2021	CY 2022	CY 2026 (P)	CAGR (2018-2022)	CAGR (2022-2026P)
Public cloud service market	142	180	270	510	638	1,150	46%	16%

Source: Primary Research, Secondary Research, Technopak Analysis
1 USD=INR 80

5.2 Other IT related Technologies in India

The Indian businesses have started recognizing the various digital technologies that are coming up. Businesses today are realizing only a fraction of the potential that Artificial intelligence possess. Advances in robotics, sensors, speech recognition and computer vision are combining with shrinking hardware costs to make robots accessible for traditional companies who have not used them. These technologies are setting the stage for massive robot migration, beyond controlled environments into uncontrolled spaces and from specific industry to every industry.

Exhibit 5.2: Major Technological Trends

Major Technological trends	
Internet of Things (IoT)	5G connectivity will help in establishing hyperconnectivity and low latency which will give a boost to the IoT driven devices and technologies. Indian IoT market is expected to reach INR 698 Bn (USD 9.3 Bn) by CY 2025 as stated by Frost & Sullivan.
Artificial Intelligence (AI)	India is among the top 10 nations in the world ahead of Canada, Italy, South Korea in adoption of latest technologies and rank sixth in terms of spending and investments on artificial intelligence. The retail industry followed by telecom and fintech are the highest adopters of AI technologies and services. It is estimated that 63.5% of telecommunication companies actively use AI to improve their network infrastructure. Further, the report highlight that the financial service industry is projected to be the second-largest spender on AI between 2021 and 2025.
Blockchain Technologies	In CY 2021, Blockchain technology and Web 3.0 innovations will drive India's GDP to USD 1.1 Tn as the digital asset economy will move forward at a CAGR of 43.1%, from INR 375 Bn (USD



Ankur Bisen
Senior Partner



	5 Bn) in CY 2021 to INR 1,900 Bn (USD 262 Bn) within a span of 11 years as stated by CrossTower, in partnership with US-India Strategic Partnership Forum (USISPF) in December 2021.
Cloud Adoption	Cloud has emerged as the primary factor for business growth with 75% of organizations opting for multi cloud models for remote working, governance, and management. A significant increase in cloud adoption was reported by 78% of ITes firms, as well as 53% of healthcare and 53% of BFSI companies.
Cyber Security	India's cyber security market grew from INR 157.6 Bn (USD 1.97 Bn) in FY 2019 to INR 320 Bn (USD 4 Bn) in FY 2023. Further, India's cybersecurity market is expected to grow to INR 480 Bn (USD 6 Bn) by FY 2025.

Source: Secondary Research, Technopak Analysis

5.3 Growth drivers of Enterprise IT and Cloud

Digital Inclusion

India has been mission driven in developing its flagship Digital India program since CY 2015 with a vision of transforming itself in a digitally empowered society and knowledge economy. The Digital India initiative was focused on improving the lives of the common person. As the Indian market continues to have large scale digital adoption in various spheres to enhance access to healthcare, education, and public utilities, this has resulted in increasing demand for enterprise IT and cloud related infrastructure. For example, the number of internet users in India has grown from 350 Mn in CY 2015 to 650 Mn in CY 2022, an increase of over 86%. Social media users have increased from 134 Mn in CY 2015 to 450 Mn in CY 2022.

Digital First organization and Business Transformation

Cloud adoption and enterprise solutions have helped businesses to sustain the changing dynamic environment and IT infrastructure inconsistencies. Thus, helping them to navigate faster and have higher agility and responsiveness for their business processes. The senior leadership and board directors are viewing Cloud as a strategic imperative for growth and business transformation. They have started acknowledging leveraging data and AI on the cloud to have richer insights and real time decisions that improve performance and operational efficiencies to have market differentiation.

Startup Ecosystem

The Indian startup ecosystem is maturing over the years and has plethora of investors, investment models, incubators, and accelerator programs. India is home to 107 unicorns as on 07.09.2022 having valuation of ~USD 340 Bn. and 1 out of every 10 unicorns globally have been born in India as per The Ministry of Commerce and Industry.

The application of enterprise software, AI, Internet of Things (IoT), health tech, fintech, e-commerce is ever growing with these startups. The important thing to consider is that these startups are also customers to various cloud and enterprise IT solutions. They use cloud computing and various other IT solutions as a medium to streamline various business processes.

Skilled Talent in India for global cloud Adoption

The availability of IT talent is one of the strongest capabilities for India to rise in the global cloud adoption ranking. Highly skilled and trained workforce is required for implementation of various enterprise IT solutions and digital transformation with cloud computing. As one of the largest IT talent pools, India is expanding its IT skill set programs to IoT, machine learning, cloud, analytics, and AI.

Government initiatives in emerging technologies

The Government has robust plan to strengthen and deepen the Cloud and enterprise adoption in the country. They have started Centers of Excellence in the areas of Internet of Things (IoT), Internet Security, Intellectual Property Rights (IPR) among many others. To have an inclusive, safe, and secure cyber space for sustainable

development, the Swachh Kendra (Botnet Clearing and malware analysis center) has been setup to provide alerts to users for preventing losses of financial and other data. Thereby, these initiatives have helped to accelerate the growth.

Data Localization

Data localization has become a significant policy issue in India in the last decade. This is primarily due to the perceived economic benefits of processing Indian consumer data, and difficulties accessing personal data for national security and law enforcement purposes. Data localization is expected to accelerate the demand for developing new data centers across India. Consequently, it will lead to increased orders for data storage and infrastructure. Some of the overall needs are anticipated to be fulfilled locally.

5.4 Key Players of Cloud infrastructure

Exhibit 5.3: Key Players of Cloud Infrastructure

Key Players of Cloud infrastructure	Year of entry in India and retailing route	Highlights
Amazon Web Services (AWS)	AWS Asia Pacific region (Mumbai) opened in CY 2016 in view to expand geographic infrastructure footprint.	AWS predicts strong demand from MSMEs for cloud service owing to digital penetration
		Exploring potential to digitise over 10 Mn SMEs in India by CY 2025 and believes India as largest open market for technology companies.
Azure	Microsoft announced the availability of Azure in CY 2015 via local datacentre regions in India.	Owing to strong demand form MSMEs in India, Microsoft is upgrading the Infrastructure in India to cater the demand and facilitate architectures for modern cloud applications
Google Cloud	Google opened its first cloud region in Mumbai in CY 2017.	Google cloud plans to open another facility in India to deploy Cloud product engineering team and cater the demand for cloud computing from MSMEs
Alibaba Cloud	Alibaba opened their first data centre on Indian soil in CY 2017 and based out of Mumbai.	Alibaba Cloud being a market leader in cloud computing in various markets has added second data centre in India to push data localisation and increase the market share in Cloud computing especially catering to MSMEs in India
IBM Cloud	IBM entered in India in the year CY 2014.	IBM is undergoing M&A with 17 companies to increase hybrid cloud and AI capabilities in India to compete with competitors and cater to strong demand from MSMEs

Source: Secondary Research, Technopak Analysis,

5.5 Device as a Service (DaaS)

The market for Device as a Service (DaaS) in CY 2021 was INR 45 Bn and further, the market is projected to grow at a CAGR of 76.31% through CY 2025 to cross INR 434 Bn during the period. In CY 2022, the Indian DaaS market size was valued at INR ~88 Bn.

Exhibit 5.4: Device as a Service (DaaS) Industry, By Revenues (INR Bn)

	CY 2015	CY 2020	CY 2021	CY 2022	CY 2025 (P)	CAGR (2015-2020)	CAGR (2021-2025P)
Device as a Service (DaaS) (INR Bn)	0.75	24	45	88	434	101%	76%

Source: Primary Research, Secondary Research, Technopak Analysis

The hybrid work model is witnessing rapid adoption across the industries post pandemic. While a hybrid workplace offers ease of work and safety, it also requires security and control, remote device management and deployment capabilities within organization. This has paved the way for a new business model called The Device as a Service (DaaS). DaaS model offers PCs, smartphones, and other mobile computing devices as a paid service for commercial use. It eases the IT needs of a company by outsourcing the hardware, software, and device management to an external service provider. Software and hardware management services include device backups, asset tracking, security, and end-of-life disposal. Products range from extended warranty to Device life cycle management to host of productive monitoring systems that does not require any operational expenses to deliver.

DaaS industry is majorly driven by hardware leasing in which around 25% of the revenues of the leading players were generated from hardware segment. To ensure greater flexibility and mobility requirements, the end users are opting for mobile devices such as laptops, tablets and smartphones with latest configuration matching their business requirements. The greater demand for analytics and security software in addition to deployment and maintenance services are increasingly forming a major share in the vendor's income. DaaS has been proving instrumental in reducing the cost of the end users. Periodic upgrades in hardware infrastructure provided by the vendors prevents the technology obsolescing, further pushing the technological strategic inflection point and proving as cost cutting measure for the end users. The growing acceptance of devices has been propelling the installation of wide range of applications and security software. In coming years, Desktop as a Service (DaaS) is expected to be a major growth driver and it is expected to have huge adoption of DaaS solutions by organizations of all sizes to increase productivity and maximize ROI, while keeping the employee safety and convenience at the core.

5.6 COVID-19 impact analysis:

The effects of Covid -19 have a significant impact on the technology sector. From a positive perspective, the disruption has caused an acceleration of remote working and a rapid focus on evaluating and de-risking the end-to-end value chain of the business.

Long term impact on Technology sub – sectors

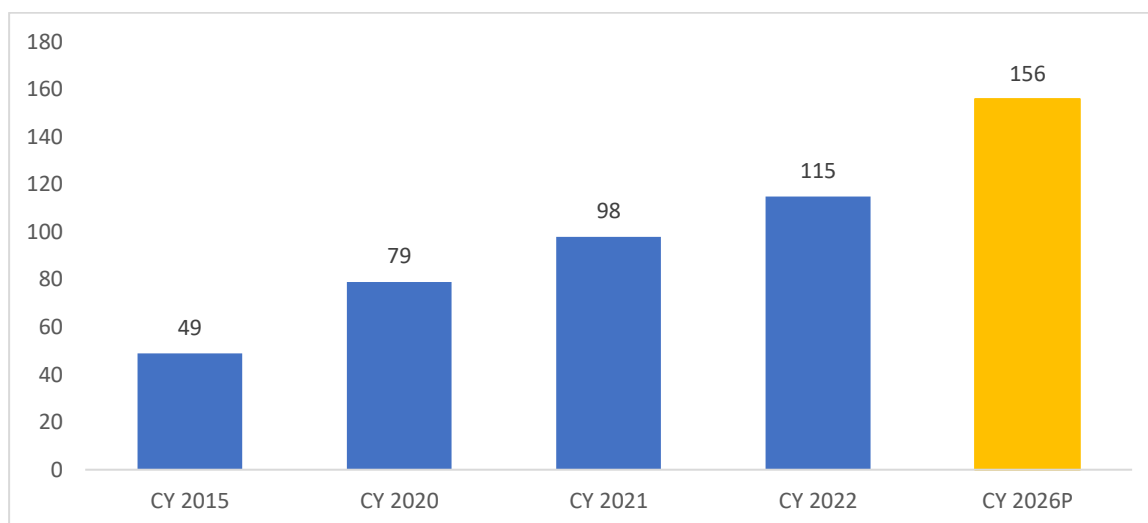
Security software companies have seen an increase in the number of subscriptions from various businesses as organizations want to secure the endpoints, particularly cloud – based tools, log management and VPNs. Most organizations don't have a tech stack in place for business - continuity plan. Due to enhanced remote work scenarios, IT departments have started to play a crucial role in the way business carry their operations.

The cloud infrastructure market in India is one of the few sectors that has emerged strong amid the pandemic. The demand for secure, reliable, scalable, and cost technology services proliferated, leading to higher cloud adoption. The demand for e-learning, telemedicine, and remote working picked up on account of the growing application of cloud computing during the lockdown. Banking, financial services, and insurance (BFSI), and manufacturing are the other sectors that have been highly dependent on cloud computing services. 63% of the Indian enterprises increased their investment in hybrid cloud in CY 2020 as compared with 46% globally in CY 2019. Major reasons for these numbers stand for the business environment that got created by the pandemic, flexibility and security have emerged to be of utmost importance. India takes the lead in modernizing the IT infrastructures as these shifts ensure better control over IT resources, increased speed to meet the business needs and better support to customers.

5.7 Server business overview in India

Indian server market in CY 2015 was valued at INR 49 Bn (USD 658 Mn) and this grew to INR 98 Bn (USD 1.05 Bn) in CY 2021 at a CAGR of 12% in the same period. It was valued at INR 115 Bn (USD 1.44 Bn) in CY 2022 exhibiting a growth rate of 17% from previous year. Further, this industry is projected to reach INR 156 Bn (USD 2 Bn) by CY 2026 with a CAGR of 8% (CY 2022-2026).

Exhibit 5.5: Revenue of Server market in India (INR Bn)



Source: Secondary Research, Technopak Analysis

India is on the rise of digital adoption initiatives with a vision to transform into a digitally empowered society and knowledge economy. The server's installation benefits enterprises by various means like cost effective operations, lower hardware requirements, data backup facility, optimizing energy consumption among many others. Enterprises have been indulging into making their business operation's work decentralized, flexible and accessible from remote locations.

5.8 Demand of servers in India

Servers are hardware devices that are used to store, access, secure and manage digital data, files and services. The professional services vertical spending was led by investments from fintech, cloud service providers (CSPs), telecom players, and IT/ITeS companies. Increasing focus on digitalization and modernization has led to higher investments from banking and discrete manufacturing as well. The below mentioned are some of the major factors that are driving this demand:

- Growing adoption of newer and continuous technologies like big data, cloud computing, virtualization, requirements of data centers are among the many few examples contributing to the growth of the market.
- The Indian startup ecosystem is contributing to the rise in the number of startups coming in the country. India has over 92,700 startups recognized by the Department of Promotion Industry and Internal Trade (DPIIT) according to the economic survey FY 2022-23. These startups create heavy demand for servers as they depend more on cloud computing technologies, virtualization to manage their workflows offering flexibility and scalability to their teams.
- Moreover, the policies of the government in India are in favor of promoting Digitalization and the shifting of various government department's facilities through e-portals are fueling the emergence of IT infrastructure including servers.

5.9 Server Market Competitive Scenario

Exhibit 5.6: Estimated share of the server market (CY 2022) (%)

	CY 2022
Dell Technologies	46%
HP	20%
Lenovo	10%
Cisco	8%
Fujitsu	4%
Others	12%
Total	100%

Source: IDC, Secondary Research, Technopak Analysis

Note: Estimations only, Other notable players in the market include IBM, Oracle, and Inspur.

The professional services vertical spending was led by investments from fintech, cloud service providers (CSPs), telecom players, and IT/ITeS companies. In addition, increasing focus on digitalization and modernization has led to higher investments from banking and discrete manufacturing as well.

5.10 Growing inclination towards Green Technology

India's rapid growth, industrial and economic development combined with urbanization has created advantageous opportunities but at the same time led to increase in GHG emissions, waste generation and rising demand for scarce resources like water. In the similar manner, the increase in the use of modern technology in various sectors like business, software development and automation have many benefits like cost saving, elasticity, scalability among many others. However, the production and consumption of these advanced technologies have negative impact on the environment leading to increasing carbon footprints and massive energy consumption.

Indian companies and public sector organizations that have migrated computing workloads from on-premises data centers to cloud infrastructure could expect to reduce carbon footprint by nearly 80%. It is estimated that, if 25% of the 1,200 largest publicly traded business in India put one megawatt (MW) of compute workload into the cloud, it would save the equivalent of a year worth of emissions from 1,60,000 Indian households in numbers as announced by Amazon Web Services (AWS) the findings of Carbon Reduction Opportunity of Moving to the Cloud for APAC.

Tech is the green vehicle for achieving the ESG milestones

Organizations across the globe are looked upon for safeguarding our planet from environmental harm. Business leaders are tracking sustainability closing by focusing on smart technologies such as AI/ML, cloud computing and blockchain among many others to achieve their environmental, social and governance (ESG) goals. 98% of the business leaders in India believe that businesses that use technology to drive sustainability will be the one that would succeed in the long run. Technology and cloud could be vital in the achievement of the ESG. Cloud based data management and reporting would help in supporting the ESG missions. Global players have taken various initiatives like Microsoft has announced Microsoft Cloud for Sustainability, Amazon Web Services offers a program called Data Exchange that helps in accessing third party sustainability data. Google Cloud platform provides carbon free energy scorers for google Cloud regions.

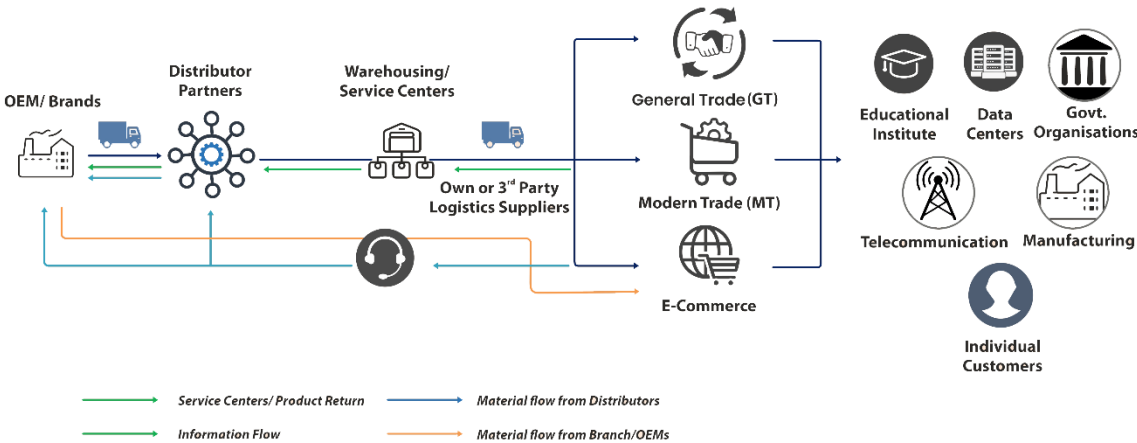
Considering the immense benefits of cloud from ESG perspective, the companies still need to confront various challenges like lack of technology talent within the company, governance challenges, cybersecurity, and privacy issues to fully reap the benefits.

6. Retailing of Technology Products & Key Services in India

6.1 Introduction to Retailing of Technology Products & Key Services in India

The retail Technology & Services market in India is dominated by international brands with multipolar and integrated business models. The various models related to technology & services in India have evolved over the years and adapted the best practices after having better understanding of the market. To increase the reach of products manufactured by the brands to consumers through different channels, an effective value chain plays a crucial role. In order to focus on the core business activities such as new product development and marketing activities, the brands require intermediaries who can push products in market and take care of service and return requirements.

Exhibit 6.1: Value Chain in Retailing of Technology Products & Key Services



Source: Technopak Analysis, Industry Experts
 Note: General Trade – Sub Distributor/RD/Re distributor, Reseller, Retailers, System Integrators and Brand Stores
 Modern Trade – Multi-city Large Format Retail Stores chains, Regional LFRs
 E Commerce – Online portals such as Flipkart and Amazon appoint resellers like Apparel who buy in bulk from distributors and sell on these platforms. Their core advantages are product visibility and commercial advantage to end-users.
 Hybrid Resellers are channel partners who sell to online marketplaces and retail channels

6.2 Retail Channels in Technology & Services in India

As per Census CY 2011, India has over 4000 cities and towns and 6 lakh villages. In order to cater to the demand of customers across 4000 cities, standalone shops in the General trade play a pivotal role. As per Technopak estimates, there are 10 Mn Retail outlets across India including organized and standalone outlets. The share of organized outlets in the same is around 1.5% of the total retail outlets in India. Retail outlets dealing in Electronics and ICT products are estimated at 3 lakhs. The share of organized outlets dealing in Electronics and ICT products is estimated at around 2.5%. No brand alone can cater to this vast network of retail stores spread across the country. In order to cater to the demand and push product in the market, the brands rely on intermediaries such as ICT Distributors.

The ICT distributors create a retailing ecosystem by onboarding resellers to provide market access to the products of a brand. Along with providing market access, the ICT distributors engage in providing end to end servicing, including warranty and post warranty services, infrastructure investment in supply chain & service centers, demand generation, carrying out on ground marketing activities etc. The ICT distribution business concentration in metro cities is there among few large players.



Rashi Peripherals Limited, one of the leading ICT distributors in India for IT technology related products has 50 retail branches & 9,990 re-sellers across India for deploying of products & after sale services to their customers.

Having a distribution-led business allows brands to limit their exposure to activities related to sales, reseller onboarding, supply chain and logistics etc. Hence, focusing its energy and resources on efficient manufacturing techniques, new product development, developing effective marketing and communication strategies etc.

Rashi Peripherals Limited is India focussed company engaged in distribution of ICT product through their strong and robust retail network across India to fulfil the demand of each city type.

Exhibit 6.2: Key Players Cities Presence

S. No.	Company	City Presence
1	Rashi Peripherals Limited	733
2	Competitor 1	NA
3	Competitor 2	NA
4	Competitor 3	750+

Source: Company websites

NA: Not Available

In certain cases where brands have their Exclusive Brand Outlets (EBOs), which are either brand owned or franchised are serviced directly by the brands. E.g., Dell has 680+ exclusive dell stores in India. Another brand HP (Hewlett-Packard) has 500+ exclusive HP stores in India. However, the share of direct sales is very low in the market given the fact that over 97.5% of the outlets are standalone outlets and are majorly serviced by ICT distributors.

The direct sales model is not limited EBOs of the brand only, the brands also supply products directly to multi brand outlets (MBOs) such as Croma, Reliance Retail etc., online marketplaces such Amazon, Flipkart, etc.

Exhibit 6.3: Retail Channels in India and their Key Attributes

S. No.	Type of Retail Channels	Nature of Retailers	Demand of Retailers from Brands	Dominant Distribution Network
1	Standalone Retail Store (GT)	300-400 sq. ft. Stocks low ticket value and fastest moving products, Multiple brands based on catchment requirement, High ticket value products or specialty products are procured on demand basis. Act as top-up store for accessories.	<ul style="list-style-type: none"> Fast moving products with mass pricing Servicing support Timely availability of products 	Distribution Partner led
2	EBOs (Own)	500 + sq. ft. Latest products and technologies, Customer experience, Brand exclusivity, Creating brand loyalty, Strong post-sales support and service	<ul style="list-style-type: none"> Showcase complete range of the brand Serve as customer experience center Brand building and visibility 	Brand/Distribution partner led
3	EBOs (Franchisee)	400-800 sq. ft. Latest products and technologies, Customer experience, Brand exclusivity, Creating brand loyalty, Strong post-sales support and service	<ul style="list-style-type: none"> Mix of Latest products and fast-moving products Technology and Servicing support Timely availability of products Training support 	Brand/Distribution partner led

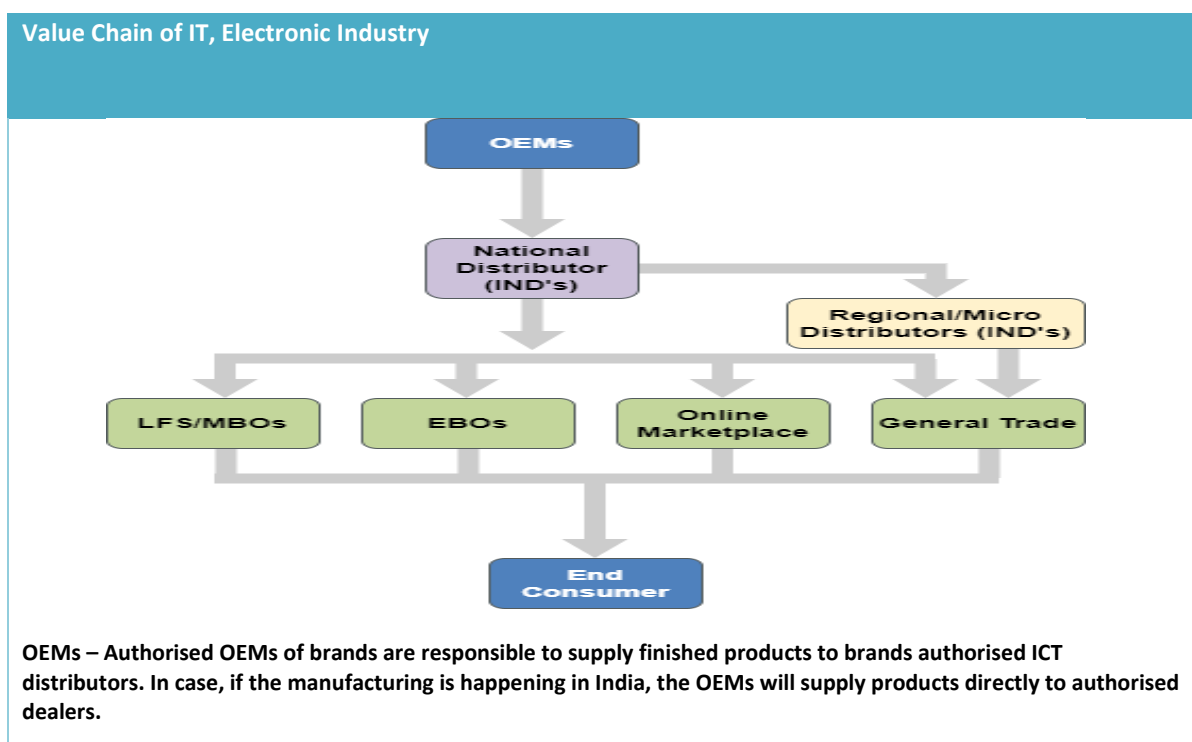
4	Regional/ Local Chains	1000 + sq. ft. Multi brand presence, fair range of products ranging from premium to mass, Fair mix of accessories, post-sales support and service, offers other services such as AMC extension, repair and maintenance through own or reference network, acts as go to store for all IT needs for local catchment	<ul style="list-style-type: none"> • Wide range of products from brands- latest to mass appeal • Technology and Servicing support • Timely availability of products 	Distribution led
5	National Chains	3000- 5000 sq. ft. Multi brand presence, high focus on popular SKUs, fair range of premium products, good mix of accessories, post-sales support and service, focus on discounts and offers to build customer loyalty	<ul style="list-style-type: none"> • High inventory of popular SKUs • Discounts & Schemes • Servicing support • Timely availability of products 	Brand/ Distribution- partner led
6	Online Market Places	NA	<ul style="list-style-type: none"> • High inventory of popular SKUs • Discounts & Schemes • Servicing support • Timely availability of products 	Hybrid

Source: Primary Research, Technopak Analysis, Industry Experts

6.3 Value Chain Comparison to Other Distributor led Models

The various type of stakeholders which are involved in value chain of IT Industry vs. Packaged Food Industry along with their role and responsibilities are mentioned below:

Exhibit 6.4: Value Chain Comparison



ICT Distributors

- In modern trade (EBOs, MBOs) & online channel (E-commerce platforms), ICT distributors are responsible for supply of products. Whereas, in general trade, the supply of products is done through national/regional or sub-distributors depending on the order quantity and other business terms.
- For timely delivery of products, ICT distributors have their warehouses and physical service centres for quick replenishment of product, resellers in turn supports the customers by providing services related to guarantee, warranty, repairs and maintenance and other value-added services such as AMC extension.
- Undertaking marketing activities to improve business through roadshows, exhibition participation, digital marketing, BTL activities etc.
- Strengthening their partners network by providing them training frequently to understand their right features and specifications of their offerings
- Distributors are also responsible for adding new retail channel partners to improve their top line.

Source: Technopak Analysis, Secondary Research

Note: General Trade – Sub Distributor/RD/Re distributor, Reseller, Retailers, System Integrators and Brand Stores

Modern Trade – Multi-city Large Format Retail Stores chains, Regional LFRs

E Commerce – Flipkart and Amazon

6.4 Total Addressable Market

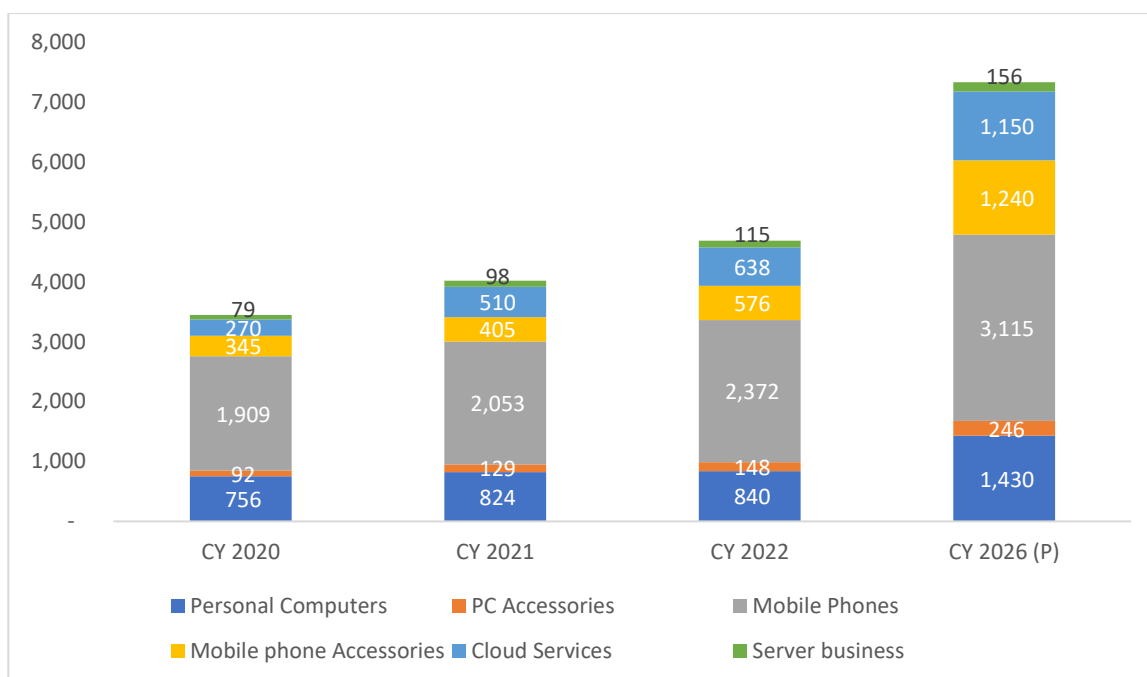
India has a large addressable market for the personal computing (PC) segment with including peripherals, storage, tablet PCs, mobile phone and accessories, cloud services, and server businesses. The market was approximately INR 4,689 Bn in CY 2022, which is projected to grow to approximately INR 7,337 Bn by CY 2026.

Exhibit 6.5: Total Addressable Market for Technology Distribution and Reselling business (in INR Bn)

Total Addressable market					
Category	Market Size (INR Bn)				
	CY 2020	CY 2021	CY 2022	CY 2026 (P)	CAGR (2022-2026P)
Personal Computers					
PC'S (including Desktops, Assembled Desktops, Laptops)	680	727	730	1,300	16%
Tablets	76	97	110	130	4%
Accessories					
Printers	15	15	17	19	3%
Storage devices	29	43	51	92	16%
Supplies	47	70	81	135	14%
Total	847	952	989	1,676	
Mobile Phones and Accessories					
Mobile Phones	1,909	2,053	2,372	3,115	7%
Mobile phone Accessories	165	188	218	350	13%
Wearables	23	30	105	235	22%
Hearables	158	188	253	655	27%
Total	2,254	2,458	2,948	4,355	
Cloud Services					
Public Cloud Services Market	270	510	638	1,150	16%
Total	270	510	638	1,150	
Server business					
Server Market	79	98	115	156	8%
Total	79	98	115	156	
Grand Total	3,450	4,018	4,689	7,337	12%

Source: Primary Research, Technopak Body of Knowledge and Technopak Analysis

Note: Gaming PCs and accessories are included in the Assembled PCs and Accessories.



Category	CAGR (2022-2026P)
Personal Computers	14%
PC Accessories	14%
Mobile Phones	7%
Mobile phone Accessories	21%
Cloud Services	16%
Server business	8%

6.5 Growth Drivers

a. Goods and Services Tax (GST)

Since its launch on July 1, 2017, GST has replaced several indirect taxes and duties levied by the Central and State governments with three types of GST, that is, central GST (“CGST”), state GST (“SGST”) and inter-state GST (“IGST”) as well as basic customs duty for imports. It has created a uniform national market.

GST has not only eliminated multiple taxes that were prevalent in the market but has also helped in improving efficiencies of logistics. Earlier, a brand was supposed to maintain multiple warehouses to avoid multiple taxes. These multiple warehouses were underutilized in terms of capacity, resulting in higher operating costs. However, in the GST regime the interstate movement of goods has eased and is less time consuming and more cost effective.

b. Efficient Supply Chain Solutions

Warehousing and logistics industry in India has witnessed tremendous changes in last 10 years due to increase penetration of international brands in India. The international brands have aided the transformation of warehousing and logistics industry as plug and play models have been introduced to obtain operational efficiencies. For brands to be successful in a geography like India, there is a need of right mix of distributors who have deep understanding of their region, supply chain network, logistics and warehousing set-ups, ease of moving products, tracking mechanisms, inventory planning systems, facility of reverse logistics etc. Global technology brands undertake continuous research and development and introduce new products from time-to-time. These global technology brands also have extensive supply chain capabilities which ensures availability of their products.

c. E-commerce Platforms are enabling the growth of Industry

E-commerce has emerged as a most preferred channel in last 6-8 years owing to the availability of brands & their entire product range along with competitive pricing, when compared to any offline point of sale. E-commerce platforms have led to an increase in demand of technology products in the country by allowing ease of browsing, product availability, timely delivery etc. ICT product distributors are also expected to get benefited by new e-commerce policy introduced by Government of India, which imposes restrictions to e-commerce owned re-sellers for selling on these platforms.

d. Extended Producer Responsibility (EPR) and E-Waste Management

With growing focus on EPR and pollution caused by e-toxins generated by e-waste, Governments and social bodies are advocating the brands to take-up responsibility of the products after its end of life and dispose the products in a way where pollution and contamination is reduced. For the same, Government of India in its E-Waste Amendment Notification dated 06.04.2018 has defined EPR targets for producers as listed below:

To comply to Government guidelines, the producers either have to invest in creating a reverse logistics system for e-waste collection or can rely on their ICT distributors to do the same for them. As ICT distributors already have a supply chain system in place for supplying products to resellers, and for product returns to the brands. This existing system of ICT product distributors who already have supply chain system in place for supplying products to resellers, and for product returns to the brands can be used for collection of e-waste and compliance with EPR guidelines set by the Government. This will also be a cost-effective model as compared to establishing a complete reverse logistics only for e-waste collection. Understanding the importance of e-waste collection many players in the distribution of ICT Products such as Redington India, Rashi Peripherals Limited India etc. have already established reverse logistics and are helping brands in meeting their EPR goals.

6.6 Key Success Factor of Reseller & Distribution Models

- ICT Distributor's role is not limited to order placement to dealers or re-sellers. In IT technology product category, ICT distributors are also providing end-to-end complementary servicing including guarantee, warranty, repairs and maintenance services and other value-added services such as AMC to their customers
- Support from brand in Pre-sales support for high end products like servers, storage, software etc.
- Efficient operation model by having their own retail infrastructure in terms of warehouses to quick turnaround the inventory and service centres to supports their customers from product related issues after purchasing E.g., Rashi Peripherals Limited India has 50 service centres branches across India to support their client base
- Robust IT infrastructure to efficiently managing of purchasing, inventory planning etc.
- Relationship with vendors is also an important factor for any ICT distributor to success
- National distribution partnership rights with vendors is another important factor for any ICT distributor to success
- Trade transparency, maintaining each channel partner profitability and best offerings to them in terms of best pricing, schemes and credit note facilities to support their businesses
- Value addition by marketing of their product portfolio through roadshows, exhibition participation, digital marketing, BTL activities etc.
- Strengthening their retail channel partners network by providing training frequently to understand them about the right specification and features of their offerings
- As part of their General Trade channel, they typically rely on Channel Partners for distribution of ICT products.
- Skilled & experienced resources on feet to provide support to their channel partners

6.7 Key Opportunities & Challenges

i. Supply Chain Constraints

Due to monopoly of international markets such as China, Taiwan etc. in manufacturing of semiconductors, the industries such as Automobiles, Electronics, ICT products etc. are forced to rely on these markets for delivery of chipsets which is one of the core components in Electronic & ICT products. The spread of COVID 19 across world had disrupted the supply chain in terms of shortage of semiconductors and owing to the undersupply of this crucial component a long list of orders is pending and is yet to be fulfilled. The lag between a chip being ordered versus being delivered increased from 3 days to around 7 months. This increase in delivery days and demand shortage of chipsets and future uncertainty in terms of availability, manufacturing etc. is impacting the brands in fulfilling the demand. However, the supply issue is temporary due to monopoly in manufacturing by key manufacturing companies. The demand of IT technology products in India is promising due to rise in usage of technology in day-to-day life. The urban market has by and large evolved to a certain extent but the rural markets still untapped. There is limited channel business in non-metro cities and selected large partners create alternate distribution channels in non-metro markets. The demand from rural market may override the urban demand due to rapid rise in adoption of social media, rise in number of online shoppers etc. India has around 6 lakh villages which would be opportunity for technology related brands in near future. ICT product distributors will be indispensable for any technology brand and will act as a catalyst to fulfil both urban and rural demand given their experience, infrastructure and understanding of local nuances.

ii. Limited Technology Usage in MSME Sector

India has around 63 Mn MSME companies, out of which 62 Mn companies are Micro (59 Mn) & Small (3 Mn) enterprises who have yearly turnover less than INR 0.05 Bn & INR 0.50 Bn respectively. Majority of these business stakeholder are yet to adopt technology and are less invested & involved on technology-oriented infrastructure for advancement of their business due to limited knowledge, awareness among them. However, the spread of COVID 19 has forced these stakeholders to overcome their traditional methods and have now started exploring Usage of technology and IT infrastructure upgradation.

iii. Mandatory License for import of laptops, tablets, and personal computers (PCs)

To further strengthen its new and upgraded production-linked incentive scheme for IT hardware manufacturing, Government of India has decided to mandate licensing for import of laptops, tablets, and personal computers from November 1, 2023. This import restriction is intended to promote domestic manufacturing of laptops, tablets etc. as well as limiting the supply of such products from China. It will help in further expanding the organised play in ICT products distribution market in India. This is going to serve as a great opportunity for leading players in the market like Rashi Peripherals Limited, to further increase their market share.

6.8 Key Players in Re-selling and Distribution of ICT technology products

In terms of product offerings, services offerings, retail network in terms of warehouses, channel partners, sales offices, service centres, Rashi Peripherals Limited score higher as compared to their competitors. Rashi Peripherals Limited has efficiently optimized their network in last 2 years to become a leading company by outpacing their competitors in terms of growth.

ICT Distributors, across all industries play a pivotal role in increasing brand reach across geographies. In IT Technology products, the ICT distributors not only increase the reach by appointing resellers but also help in providing infrastructure related to servicing and repairing of products along with making spare parts available. Rashi Peripherals Limited has around 50 service centres in India and Competitor 2 has around 39 service centres globally. Key ICT distributors in the Indian market and their reach are illustrated in the exhibit below:

Exhibit 6.6: Key ICT Distributors

Particulars		Rashi Peripherals Limited	Competitor 1	Competitor 2	Competitor 3
Product Offerings					
Service Offerings					
Infrastructure Capabilities	Channel Partners				
	Warehouses				
	Sales Office				NA
	Service Centres		NA		NA
No. of Brands Associated					

Source: Company websites, Primary & Secondary Research, Technopak Analysis

Note: Harvey balls assigned values are based on the datapoints available on company websites and annual reports

: 4/4 : 3/4 : 2/4 : 1/4

Values are on relative basis

NA: Not Available

6.9 Key capabilities required for re-selling or distribution business

a. Skilled Resources

Skilled resources in sales and marketing, servicing, training, customer management and reseller onboarding are the key for any company to build brand loyalty, generate demand, push sales, customer satisfaction etc. In IT industry, skilled resources play a very crucial role in terms of creating continuous product demand by giving pre-sales support to end consumer, retail channel partner relationship, providing training to their existing or new retail partner in related to products in terms of features, pre & post-sales support etc. These resources are also responsible for on-boarding of new resellers and dealers by their actively street presence and frequently engaging with them to understand their requirements.

b. Supply Chain & Retail Network Capabilities

Procuring, stocking & efficiently distribution of products to meet the market demand at the earliest, ICT distributors are bound to have supply chain management as a core competency i.e., starting from import, warehousing and stock movement across the geography, packing/repacking, order processing and delivery to any part within the geographies operate. To ensure product availability at all times, increasing reach and servicing geographies a company needs robust logistics services and warehouses at strategic locations. In order to make their presence within cities more cost effective and on order to increase efficiencies of supply chain and logistics, companies like Rashi Peripherals Limited have doubled their service centres as warehouses and are

present across 50 cities within India. These service centres are responsible to product reselling and to supports their customers by providing services related to guarantee, warranty, repairs and maintenance and other value-added services such as AMC extension.

In addition to efficient supply chain and warehouses, the distribution company needs to have a strong network of resellers and dealers to push products in the market and increase throughput. In order to onboard resellers and dealers one needs to have a strong understanding of local geography, fleet of feet-on-street, market credibility, selection of brands with customer pull. Also, for maintaining sales throughput from the resellers and dealers a distributor needs to have a robust training programme in place and continuous exposure to new product launches with associated brands. Below details of brands with count of their resellers.

Rashi Peripherals Limited has wide and deep retail network in India with presence in 733 cities as of FY 2023.

Exhibit 6.7: Key Players Retail Network

City Type	Rashi Peripherals Limited	Competitor 1	Competitor 2	Competitor 3
Metros				
Mini-Metros				
Tier 1 Cities				
Tier 2 Cities				
Tier 3 Cities + Others				

Source: Company website, Industry Interaction

Metros: Delhi NCR, Mumbai

Mini Metro: Next 6 cities with population >5 Mn. (Ahmedabad, Bengaluru, Chennai, Hyderabad, Kolkata & Pune)

Non-Metro: All cities excluding Metros

Tier 1: Population 1 to 5 Mn.

Tier 2: Population 0.3 to 1 Mn.

Tier 3: Population less than 0.3 Mn.

Harvey balls signify the degree of adherence to the criterion.

:4/4 : 3/4 :2/4 : 1/4

Values are on relative basis

c. Working Capital Requirement

IT distribution business model is a working capital-intensive business that requires the adequate amount of resources in terms of capital to purchase the products by availing cash discounts, offering credit discount to the reseller or dealers, keeping optimum amount of inventory, managing credit cycles and maintain optimum level of working capital to run the business operation smoothly.

d. Domain Experience & Relationship with Channel Partners

Channel partners are one of the most strategic stakeholders in the distribution business. Distribution business completely relies on relationship with retail channel partners. It requires time to understand the specific requirement of the channel partners and build the synergy or relationship with them. Retail partners usually prefer ICT distributors who have knowledge, expertise in the geographies they cover. Further, ICT products, because of its technological nature, require specific technical expertise and domain knowledge.

e. Relationship with Vendors

Relationship with brand vendors plays a pivotal role on distribution business. It requires time to build the synergy or relationship with vendors to have a common objective. Hence, both the partners are equally important to each other to build their businesses by supporting each other. Also, diversification of vendors helps in encouraging innovation, better customer experience, navigate sales increase and survive surge of prices.

6.10 Impact of COVID-19 on the industry

a. Demand of Computing & Peripheral Products

Restriction on opening of offices, school, colleges etc. due to spread of COVID 19 across the world had forced individuals to work/study remotely from safer locations. This remote working/studying acted as a catalyst in fuelling the demand of computing products such as computer, laptop, notebooks, webcams, earphone & headsets etc.

India's traditional PC market shipment, which includes desktop, notebooks, workstation, grew 44.5% YoY in CY 2021. The notebook category was the volume driver due to remote work requirements. The desktop category was driven by demand in the education and virtual learning environment segments. Other product categories such as webcams, earphone & headsets etc. have also observed surge on demand due to remotely working/studying requirements.

b. Surge in demand of Gaming Products

Indian gaming industry generated a revenue of USD 1.5 Bn in FY 2020 and is expected to grow with a CAGR of 27% and to reach over USD 5 Bn by FY 2025. Due to restriction on outing, gaming emerged as a preferred mode of entertainment especially for millennials. The pandemic led the shift in habits of gaming enthusiasts to seek an upgrade from mobile gaming to towards PC and console, driving up the demand for gaming PC/Laptop/Console and their related products in India. In FY 2021, Sony has witnessed the double growth demand of their console during lockdown. Asus has witnessed 3 times increase in sales of their gaming laptops as compared to FY 2019-20. Another brand MSI witnessed 3 times increase in social media queries for gaming notebooks and 1.5 times increase in actual sales of gaming notebooks during FY 2021. Being a national distributor of leading motherboard and graphic cards brands such as Intel, AMD, ASUS, Gigabyte, MSI, Zotac etc. Rashi Peripherals Limited contributes 46% share to the India graphic card demand and 20% to the motherboard demand in India in FY 2022.

c. Surge in Demand of Private Label Brands

COVID 19 has surge the demand of products such as webcams, earphone & headsets, gaming accessories, smart wearables, appliances etc. from online platforms (Amazon, Flipkart etc.). Due to surge in demand many domestic re-sellers started selling private label brands of their own or imported brand by procuring through international markets such as China, Taiwan etc. Due to their less or competitive pricing against branded products, demand for these private labels has also gained traction. E-commerce platforms have helped brands tap the domestic consumption by offering higher discounts to their end consumers.

7. Competitive Landscape of IT resellers in India

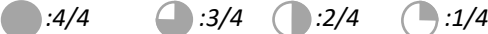
IT Industry has witnessed significant growth in last decade and specifically in the last 5 years due to increase in skilled workforce, digitalization push from Government of India, technology enablement by industry for ease of operations etc. The reach of ICT Products has now reached beyond 800 cities due to increasing digital literacy and internet penetration. The faster proliferation and availability of ICT products across major cities and towns had only been possible due to presence of large ICT distributors in this segment who have the worked on increasing their capabilities to widen their reach and make infrastructure investments to achieve the scale. Companies such as Redington, Rashi Peripherals Limited, Ingram Micro, Savex etc. are key part of the retailing ecosystem of ICT products for route to market and providing outstanding customer experience.

For brands to create market awareness and demands for their products in the new territory, the right set of ICT distributors are required who have deep understanding of their coverage area and strong market partnerships with their channel partners. It is eminent that international companies like Dell, HP, Asus, Lenovo etc. get the India presence right and rely on trusted ICT distributors who has better supply chain infrastructure (warehousing, transportation) and right channel partner’s network. The Indian market has presence of domestic & international companies which are involves in distribution businesses of ICT products in India e.g., Savex Technology & Rashi Peripherals Limited started their India operation in 1989 and are the early entrant in distribution business followed by another company Redington (1993) and Ingram Micro (1996).

Exhibit 7.1: Key Players in ICT Distribution in India

Company	Key Parameters						
	Scale (Revenue)	Technology	India-Focus	Value-Added Services	Product Portfolio	Customer diversification	India Network
Rashi Peripherals Limited	3/4	4/4	4/4	4/4	4/4	3/4	4/4
Competitor 1	4/4	4/4	2/4	3/4	4/4	2/4	3/4
Competitor 2	4/4	4/4	1/4	3/4	2/4	2/4	3/4
Competitor 3	4/4	3/4	4/4	4/4	2/4	1/4	4/4

Source: Company Websites, Secondary Research, Technopak Analysis
 India network includes warehouse, sales office, channel partners etc.
 Customer diversification refers to extent of diversified customer base which includes expansion in new markets and other business segments beyond its core.



Values are on relative basis

In last 2 years, Rashi Peripherals Limited has emerged as a leading and fastest growing ICT distributor having all the leading brands/OEMs as compared to other leading ICT distributors in India.

Rashi Peripheral Limited has emerged as leading national distribution partner for ICT products and services in India. As of FY 2023, the company has wide diversified customer base with 200+ end customers, 800+ enterprises clients, and 9,990 channel partners from industry such as educational institutes, data centers, telecom, media, oil & gas, manufacturing, government institutes, IT etc. Categories like Gaming/ Do-it-yourself (DIY) PCs, PC

components and its accessories, Rashi Peripherals Limited acts as a leading provider in India market. The company is India focused and strong own distribution network backed by their on-ground sales team for efficient operation and quick turnaround of their inventory. As of FY 2023, the company is partnered with 53 international brands and has leading wallet share for the major brands on their India business due to their value-added marketing. Rashi Peripherals Limited emerges as a partner of choice for ICT brands/OEMs in product categories like components, peripherals and its accessories, computing, networking, lifestyle, enterprises and embedded solutions. These brands are among Fortune 500 brands worldwide. The company has national distribution partnership for brands like Asus, Dell, HP, Lenovo, NVIDIA, Western Digital, Toshiba etc. for India market.

By having vast retail network, vendor & channel partner associations, wide presence across cities in comparison to leading competitors, Rashi Peripherals Limited is able to outpace the growth of leading competitors in last 2 years by optimising their operation & business model efficiently.

Exhibit 7.2: Distributor Companies, Operational Model and Presence in India (FY 2023)





Particulars	Rashi Peripherals Limited	Competitor 1	Competitor 2	Competitor 3
Market Entry	1989	1996	1993	1988
Presence across Indian Cities	730+	NA	NA	750+
No. of Warehouses in India	65	53	168	42
No. of Channel Partners	9,990	15k+	34k+	12k+
Partner Brands	53	200+	290+	43

Source: Company Websites, MCA, Secondary Research
NA: Not Available





7.1 International technology brands introduced to Indian Market

Resellers and distributors have been instrumental in bringing leading technology brands to India. In the last 2 decades leading ICT distributors have partnered with multiple leading IT brands from across the globe e.g., Rashi Peripherals Limited was important in creating demand and brand loyalty of Logitech brand in India. Without the distribution network of these re-sellers and distributor companies, international & domestic brands would be uncertain on their market entry and demand in the Indian market and were not able to capture the market like they have as of now. It is imperative that international & domestic brands scout for the right mix of distribution partners in Indian market to keep their product demand growing without significant challenges e.g., Rashi Peripherals Limited is the national distributor for brands like Logitech, Intel, Eaton etc. Mentioned below are the leading companies in distribution of IT related products along with their key brand partnerships in India.

Exhibit 7.3: Key Players and Brands Partnerships

Particulars	Rashi Peripherals Limited	Competitor 1	Competitor 2	Competitor 3
Brands	Logitech, Toshiba, Lenovo, Western Digital, Dell, ASUS, HP, NVIDIA, Intel, APC and others	Apple, Acer, Microsoft, AMD, Zebra, Samsung, D Link, Compaq and others	Apple, Dell, Lenovo, HP, Toshiba, MSI, Western Digital, Jabra and others	Microsoft, D Link, HP, Logitech, Bose, LG and others
Customer Diversification				

Source: Company Websites, Secondary Research

 :4/4  :3/4  :2/4  :1/4
Values are on relative basis

Wallet Share Analysis by Brand

Rashi Peripherals Limited is able to capture a substantial share of demand in product categories such as processors, graphic cards, internal storage devices, and others

Rashi Peripherals Limited commands nearly 50% of the Indian consumer demands in product categories like processors, graphic cards, internal storage etc. in FY 2023 followed by other competitor companies such as Ingram Micro, Redington, Savex etc. In product categories like Hard Drives and Routers etc. Rashi Peripheral Limited commands nearly 1/3rd of the domestic demands followed by other leading competitor companies.

7.2 Warehousing Footprint

Rashi Peripherals Limited has wide presence in terms of own warehouse network across India

Logistics and warehousing are the critical part of supply chain. Efficiency of the logistics & delivery dictates the time it takes for brands to reach their final destinations timely. Being associated with IT industry, these ICT distributors are aware of and have access to efficient and advanced IT infrastructure using newer technologies for streamlining their processes. IoT has become an important part of these businesses for efficient operation by allowing simplified pallet tracking, data analysis, inventory management and forecasting in terms of right mix of product for ordering. Inventory is the most significant component for any business and to ensure that adequate inventory is maintained to prevent a stock-out during spike in demand the companies are bound to use such technologies.

Exhibit 7.4: Warehouse Footprints of Key Players in FY 2023

Particular	Rashi Peripherals Limited	Competitor 1	Competitor 2	Competitor 3
No. of Warehouses in India	65	53	168	42

Source: Company Websites, Secondary Research

7.3 Business Model Comparative

Each distribution company has multiple business nuances in their operations that help them to differentiate from their competitors. Major companies involved in distribution business of IT related products have expanded their offerings from just supplying products to offering services such as product repair, product service, AMC etc. Moving to offering services is a natural business extension and not only generates additional revenue but also helps in customer loyalty along with de-risking their business in terms of demand uncertainty, supply constraints, competitive environment etc. Mentioned below are the products & services offers by key players in distribution business.

Exhibit 7.5: Product Ranges of Key Players

Offerings	Product Category	Rashi Peripherals Limited	Competitor 1	Competitor 2	Competitor 3
Products	Computing	✓	✓	✓	✓
	Components	✓	✓	-	✓
	Peripherals & Accessories	✓	✓	✓	✓
	Software	✓	✓	-	✓
	Networking	✓	✓	✓	✓
	Mobile, Tablets & Accessories	✓	✓	✓	✓
Services	Financial services	✓	✓	✓	✓
	IT Consultancy	✓	✓	✓	✓
	ITAD	✓	✓	-	-
	Logistics solutions	✓	✓	✓	-
	Post sales service	-✓	✓	-	✓*

Source: Company Websites, Secondary Research

✓ indicates presence * They are providing post sales services for select brands only.

1. Rashi Peripherals Limited

Rashi Peripherals Limited is the fourth largest player in distribution business of ICT products and services in India. The company started their operation in 1989. Rashi Peripherals Limited is one of the fastest growing national distribution partners for global technology brands in India in terms of revenue growth between Fiscal 2021 and Fiscal 2023. Their vendor base comprises 52 global technology brands/OEMs as of September 30, 2023. Rashi Peripherals Limited have expanded the distribution network across India and as of September 30, 2023, they had one of the largest ICT products distribution networks in India. As of September 30, 2023, the company had one of the largest ICT products distribution networks in India with 50 branches, 63 warehouses and 50 service centres across 50 cities in 28 States and Union Territories in India covering 680 locations in India (which is expected to reach 700+ locations by end of FY 2024), through an ecosystem of 8,402 channel partners for 10,508 SKUs. The company also have the largest market share in the Component business (namely CPU, Graphics cards) and Storage Peripherals (namely keyboard, mice, and other accessories), AMD based laptops and Gaming laptops & PCs business in the country. Rashi Peripherals Limited is the national distribution partner of global ICT brands and OEMs in product categories such as personal computing, mobility, enterprise, embedded solutions, components, lifestyles, storage and memory devices, power and accessories. Rashi Peripherals Limited are one of the leading companies in India with extensive distribution capabilities enabling them to be their preferred national distribution partners of global technology brands/OEMs. Apart from distribution of IT products, the company also offers services such as consulting and technical support, testing labs, marketplace fulfilment services, financial services, warranty management services, reverse logistics etc. With the liberalization of the Indian IT sector in CY 1991, Rashi Peripherals Limited transitioned to distribution of ICT products of global technology brands in India. Rashi Peripherals Limited have and business relationships for more than 15 years with several global technology brands/OEMs that they currently service and were the first national distribution partner for a few of such global technology brands.

Rashi Peripherals Limited has been instrumental in facilitating the entry of a number of OEMs/ global technology brands and were among the select players that led the formalization of the fragmented and unorganised ICT products distribution in India. Prior to the agreement with such brand, its products were available in the Indian market through unorganized channels leading to limited brand visibility in Indian markets and low acceptance due to high price points. Rashi Peripherals Limited used brand promotion activities to position products in different markets and introduced a range of their products such as wireless mice, keyboards and gaming devices for the first time in India. Currently, Rashi Peripherals Limited is distributor of brands like Intel, Logitech, Eaton, Belkin, Lenovo, Dell, LG, Asus, Intel, Nvidia, Western Digital, Toshiba etc. The company is a market leader in product categories such as CPU, hard drives, graphics cards, accessories, gaming devices, pen drives, tablets, routers etc. The company has 50 service centres across India which acts as end-to-end complementary servicing including guarantee, warranty, repairs and maintenance services and other value-added services such as AMC for their dealers/re-sellers/retailers. Both the global technology brand and Rashi Peripherals Limited have expanded our operations and business across India and Rashi Peripherals Limited have acquired a leading position in the market in peripherals segment. Rashi Peripherals Limited is among the leading national distribution partners for global technology brands in India for information and communications technology ("ICT") products in terms of revenues and distribution network in Fiscal 2023. Rashi Peripherals Limited among the select players in India instrumental in leading the formalization of the fragmented and unorganized ICT products distribution in the country. The company has strong distribution network for more than 30 years.

The device as a service (DaaS) model offers PCs, smartphones, and other mobile computing devices as a paid service for commercial use. Rashi Peripherals Limited are looking at DaaS as a next big business opportunity for growth of their business and operations in future. OEMs are developing software to track such productive monitoring systems so that organizations can deploy workload-based systems that will further drive efficiencies in their operations. Rashi Peripherals Limited intends to become the fulfilment partner of DaaS to Corporates.

Rashi Peripherals Limited has leveraged their presence across India to make latest ICT products and solutions available to consumers in India. Following infographic depicts presence of Rashi Peripherals Limited on a pan-India basis.



Rashi Peripherals Limited has presence in Singapore

Rashi Peripherals Limited has emerged as a leading B2B technology provider in last 2 years with one of the most comprehensive and balanced products and solutions portfolio that ranges from small value product devices such as storage devices to high-end and complex equipment required to build super computers and servers. Mentioned below are some value propositions offered by company to stand out as compared to their competitors in Indian market. Rashi Peripherals Limited aim to expand our geographic presence by entering and growing our presence in non-metro cities which includes tier I and tier II cities. These tiers I, tier II and non-metro cities and other rural geographies are becoming centre of consumptions for ICT products such as personal computers, smartphones, internet devices, networking devices and hence, there is requirement for ICT product distributors and resellers to have a pan-India presence.

- In-house logistics, reverse logistics and warehouse management for smooth & efficient operation
- 360-degree marketing approach tailored for OEM/brands, redistributors, retailers to fill the marketing gap
- Valued added services to their channel partners such as RMA Support, Channel activities & Online marketing support to their channel partners
- Robust warehouse network with spare capacity to handle seasonal demands
- Facilitate credit facility to their customers through 3rd party financial services firms
- Assist brands/OEMs on formulating go-to-market strategy based on their experience
- End to end technology solution providers & after sales service to their customers through their own 50 retail network
- Latest server and storage solutions are available at their state-of-the-art Demo Lab for Remote POC
- Long term relationships with brands/OEMs
- Rashi Peripherals Limited have conducted extensive roadshows across cities in India for consumers, invested in product training and undertook channel engagement activities.
- Rashi Peripherals Limited are among the few players in the industry to offer value-added services such as: (i) Just-in-time logistics capabilities and inventory management; (ii) After-sales support and warranty management; and (iii) Re-distributor financial support and others.

Some of the best practices and process followed by Rashi Peripherals Limited are mentioned below.

Technology as an Enabler

The company has real-time inventory management through the software to optimize workflow, inventory management, on timely delivery schedules, faster decision making and improved visibility of their stocks. The company also follows account management through SAP software for evaluation of key parameters of business such as profitability, inventory turnaround, sales ordering, profitability, liability or outstanding etc. for smooth & effective operations.

Efficient framework for Customer Concentration

To mitigate the risk of dependency on certain re-seller or retailers the company has robust and efficient framework for their re-sellers or retailers to ensure that the demand concentration for certain cluster is not greater than 25% on each re-seller or retailer.

Long Term Relationships with Channel Partners

By mitigating the risk of dependency on certain re-seller or retailers the company is able to manage a steady relationship with their channel partners by ensuring the profitability of each re-seller or retailer.

2. Ingram Micro

Ingram Micro is an American company involved in distribution of information technology products and services. The company started India operations in 1996. Apart from distribution business of IT related products, the company offers other services like 3 PL (3rd party logistics services), Cybersecurity services, e-waste management (IT asset disposition), training & education services, B2B2C e-store services etc. to mitigate the risk and sole dependency to IT distribution business.

3. Redington India

Redington India is an Indian based ICT distributors of information technology products and services. It started operation in 1993. The company is involved in distribution of IT related products along with other services like 3 PL (3rd party logistics services), Cybersecurity services, e-waste management (IT asset disposition), training & education services, Enterprise Professional Services, Cloud Managed Services, Support Services, 3D Printing services etc.

4. Savex Technologies

Savex Technologies is another home-grown distributor of information technology products and services. The company is an early entrant in distribution business and started their operation in 1987. Along with distribution, the company offers services such as Consulting & Technical support, marketplace fulfilment service, financial services, online store services etc.

* FY 22 data is not available

7.4 Omnichannel Mix

Historically, the business and trade were limited to offline channel. However, in last few years online platforms have become popular destination among consumers due to convenience, extensive product range, competitive pricing etc. Factors such as increased digital push from Govt of India, increase in penetration of internet and smart phones have fueled the growth of overall e-commerce industry in India. These factors not only enable the demand of online shopping from e-commerce marketplaces like Amazon, Flipkart etc. but also aided specialty e-commerce players like The IT depot, Compassco etc. to create their niche market. Due to sudden change in consumer preferences, brands are forced to adapt the omnichannel approach to their retail channel mix.

Exhibit 7.6: Channel Mix & Retail Network of Key Players

Particulars		Rashi Peripherals Limited	Competitor 1	Competitor 2	Competitor 3
Network	India Presence/Footprint				
	Global Print				
Modern Trade	MBOs				
Traditional	Traditional Retailer				
Online	Own Website (Product Enquiries/B2B)			NA	NA
	Specialty Retailers				
	E-Commerce Marketplaces				

Source: Secondary Research, Technopak Analysis

: 4/4 : 3/4 : 2/4 : 1/4

Values are on relative basis

NA: Not Available

7.5 Technology backed

The automation in Supply Chain sector is witnessing a steady growth over last 3-4 years. Digital technology has revolutionized warehousing services in India. Technologies like artificial intelligence (AI), machine learnings,

blockchain technology, IoT etc. are aiding warehousing and transportation industry towards automation to improve the efficiencies in operations. Automation holds immense benefits for warehousing industry in terms of solution to labor shortage, opportunity for improved productivity, and greater flexibility.

The internet of things (IoT) is being widely used across the sector. It is used for connecting data with other devices and systems over the internet, automatically, without human intervention. Some of the features enabled by IoT are real-time location tracking, automation of processes, improving warehouse security, end-to-end inventory tracking, getting updates on weather conditions (e.g., humidity, temperature) to ensure secure storage of goods, updates on the condition of goods in stock, etc.

Other technology like Blockchain helps on predicting demand and prepare the warehouse operations to have the right type and quantity of goods in stock.

7.5 Scalable business model

The ICT distribution industry is reasonably dependent on relationship between OEM brands and their distribution network and channel partners.

a. Reduced dependency on Vendors

ICT Distributors are usually partners with multiple vendors for the same product category to mitigate the dependency risk on handful of vendors for their smooth operation and to safe themselves for business losses. Due to COVID 19, the IT industry has to face the shortage of semiconductor chipset leads to the supply constraint in terms of delay delivery of finalized products to the customers. By having right mix of larger, medium and smaller brands, ICT distributors are able to fulfill the market demand timely.

b. Reduced dependency on Retail Channel Partners

It is necessary for ICT distributors to have a right mix of retail channel partners. In distribution business, offering credit to their retail channel partners are common to support them in terms of financial flexibility. However, the credit service to retailers depends on the relationship between distributors and retailers and the kind of business retailers are doing. To balance out the credit facility and dependency on certain retailers for business, ICT distributors are bound to add new retail channel partners to their network to improve their top line.

c. Brand Mix

Distribution business are working capital-intensive business that require efficient capital allocation. To achieve overall healthy bottom-line and better margins, ICT distributors partner with different type of brands with strong consumer pull and new entrants who are entering in the business or geography.

7.7 Product and segment mix as a part of de-risking

To maintain a healthy bottom-line, the ICT distributors maintain a mix of products with high margin along with low margin products. Brands offer lower margins on fast moving products as compared to slow moving products.

Also, to mitigate risks related to sales of products only and to stay ahead of competition, the ICT distributors have been diversifying their business from distribution of hardware products to other value-added services which are complementary to the core business of IT related products and are trying to create one stop solution for IT technology related products and services.

Due to their existing infrastructure in terms of logistic and warehousing, ICT distributors companies have started offering logistics solution services to other businesses. Cyber security has also been a newer addition to the service list of multiple IT distributors as cybersecurity itself is a growing industry in India. Companies have also started their IT consulting services for SME's or MSMEs for improving or incorporating their IT demands in the business to maximize their operational efficiency. Other services such as Annual Maintenance Cost (AMC), Repair & Maintenance, ITAD (IT Asset Disposition), financial services etc. are also considered by these distribution company to balance out their business from completely hardware distribution to services solution provider.

A decade back, the trade of business was majorly through offline retailers i.e., traditional retailers & exclusive brand outlets (EBOs) of certain brands. Factors like flagship program “Digital India” which was started by Government of India to transform India into a digitally empowered country with decreased cost of internet tariffs and rising availability of smartphones etc. aided the industry to create market awareness and enabled the demand of these services from online marketplace platforms like Amazon, Flipkart etc. and other specialty online retailers which usually deals in IT related products.

7.8 Relationship with Vendors

Relationship with brand vendors plays a pivotal role on distribution business. It requires time to build the synergy or relationship with vendors to have a common objective. Mentioned below are the partnership relation between company and brands.

Exhibit 7.7: Association with Brands of Key Distribution Companies (in FY 2023)

Brands	Product Type	Rashi Peripherals Limited	Competitor 1	Competitor 2	Competitor 3
Acer	Computing	-	19	-	-
Acronis	Cybersecurity	-	6	-	-
AOC	Peripherals	4	-	-	-
APC	UPS	15	-	-	-
Aruba	Networking and Security Solution	-	-	5	-
Asus	Computing	24	-	-	-
Belkin	Peripherals	13	-	-	-
CISCO	Software Solution	-	-	15+	-
Citrix	Cloud computing	-	-	-	3
Consul Neowatt	UPS	-	-	-	3
Dell	Computing	6	9	-	-
Delta	Components & Power System	-	5	-	-
D-Link	Networking Device	-	11	-	-
EATON	UPS	1	-	14	-
ECS	Components	15	-	-	-
Hitachi	Electronic	-	-	10	-
HP	Computing	11	-	15+	9
IBM	Software Solution	-	-	15+	-
Intel	Component	9	-	11	-
Lenovo	Security Software	12	-	-	-
LG	Peripherals	2	-	-	-
Logitech	Peripherals	10	-	-	9
McAfee	Security Software	-	-	9	-
Microsoft	Software Solutions	-	-	7	-
NVIDIA	Components	6	-	-	-
Sonicwall	Cybersecurity	-	25+	-	-
Targus	Peripherals	-	-	-	-
Toshiba	Peripherals	14	-	9	-
Western Digital	Storage	6	-	10	-

Source: Primary Research, Secondary Research

7.9 Market Share by Segment

In product categories like pen drives, graphic cards, CPU etc. Rashi Peripherals Limited fulfils nearly the half of the total market demand of these categories in India by volume followed by other product categories like Routers, Hard Drives, Monitors etc. Rashi Peripherals Limited command significant market share in India in product categories such as processors (45%), graphic cards (47%), and Pen drives (42%), hard drives (29%), keyboards and mice (21%), Monitors (27%), UPS (13%), Laptops (10%), Desktops (10%), Routers (33%), and Switches (10%) in Fiscal 2023. Being a national distribution partner of a leading motherboard and graphic cards

brand, Rashi Peripherals Limited has contributed approximately 47% share to the Indian graphic card demand and approximately 25% to the motherboard demand in India by volume in Fiscal 2023.

Exhibit 7.8: Segment wise Market Share of Key Companies, by volume in Fiscal 2023

Category	Key Products	Rashi Peripherals Limited (% to total market share)	Others
Components	CPU	45%	55%
	Motherboard	25%	75%
	Graphic Cards	47%	53%
	Hard Drives	29%	71%
Peripherals & Accessories	Pen Drives	42%	58%
	Keyboards and Mice	21%	79%
	Monitors	27%	73%
	UPS	13%	87%
Personal Computing	Laptops	10%	90%
	Desktops	10%	90%
Networking	Routers	33%	67%
	Switches	10%	90%

Source: Primary Research, Secondary Research, Technopak Analysis

Other represents ICT distributors like Ingram Micro, Redington India, Savex Technologies etc.

Note: Market share is determined on the basis of units of a particular product distributed by Rashi Peripherals Limited divided by the total units of products sold in Fiscal 2023.

8. Financial Analysis of Key Resellers & ICT Distributors in India

In India, Rashi Peripherals Limited main competitors in the Reseller & Distribution Industry are Savex Technologies Private Ltd, Ingram Micro India Private Ltd, and Redington (India) Ltd. All the companies under consideration for the purpose of this report, are in stable financial health and continuity of operations.

Exhibit 8.1: Financial metrics of key players in Technology Reselling & Distribution Industry (in INR Mn)

Particulars	Competitor 1			Competitor 2			Competitor 3			
	FY 2021	FY 2022	FY 2023	FY 2021	FY 2022	FY 2023	H1 FY 2024	FY 2021	FY 2022	FY 2023
Revenue from Operations	2,66,877	3,11,757	3,47,275	5,69,459	6,26,440	7,93,768	4,34,073	2,11,283	2,35,562	3,16,071
EBITDA	8,007	9,384	11,143	14,391	18,792	22,607	10,406	5,060	8,545	11,936
EBITDA Margin	3.00%	3.01%	3.21%	2.53%	3.00%	2.85%	2.40%	2.39%	3.63%	3.78%
PAT Margin	2.06%	2.10%	2.29%	1.38%	2.10%	1.81%	1.31%	1.48%	2.27%	2.15%
Marketing and advertising yield	NA	0.00%	0.01%	0.16%	0.25%	0.16%	NA	0.69%	1.03%	1.78%
Return on Owner's Equity (ROE)	15.27%	15.59%	16.17%	16.40%	23.87%	21.91%	7.99%	23.33%	29.61%	28.48%
Inventory Days	27	30	31	22	23	28	32	18	26	31
Trade Receivable Days	52	53	55	44	45	48	55	32	42	52
Trade Payable Days	43	48	50	47	53	50	52	8	17	25
Working Capital Days	37	35	36	19	15	26	35	42	51	57
Debt/Equity	0.00x	0.00x	0.00x	0.08x	0.10x	0.43x	0.44x	0.82x	1.02x	1.30x
Interest Coverage	33.15	43.48	28.68	8.25	15.04	7.74	4.91	7.28	7.89	4.73

Particulars	Rashi Peripherals Limited			
	FY 2021	FY 2022	FY 2023	H1 FY 2024
Revenue from Operations	59,250	93,134	94,543	54,685
EBITDA	2,152	3,052	2,676	1,657
EBITDA Margin	3.63%	3.28%	2.83%	3.03%
PAT Margin	2.30%	1.96%	1.30%	1.32%
Marketing and advertising yield	0.14%	0.21%	0.16%	0.14%
Return on Owner's Equity (ROE)	39.69%	37.56%	19.33%	10.35%
Inventory Days	35	37	55	64
Trade Receivable Days	37	38	39	37
Trade Payable Days	36	35	41	44
Working Capital Days	36	40	53	57
Debt/Equity	1.23x	1.52x	1.53x	1.82x
Interest Coverage	7.20	5.47	2.91	2.90

Source: MCA and Company Annual Reports

NA: Not Available

EBITDA = Profit Before Tax (includes other income) + Finance Costs + Depreciation & Amortization

Return on Owner's Equity is calculated as Restated profit after tax attributable to owners (i.e., total PAT minus non-controlling interest) divided by average equity attributable to owners

Inventory Days = Average Inventory / Cost of Goods Sold * 365 (For H1 FY 2024: *182)

Trade Payables Days = Average Trade Payable / Purchases of stock-in-trade * 365 (For H1 FY 2024: *182)

Trade Receivable Days = Average Trade Receivable / Revenue from Operations * 365 (For H1 FY 2024: *182)

Working capital Days = Trade Receivable Days + Inventory Days – Trade Payable Days

Debt/Equity ratio is calculated as total borrowings (current+ non-current) divided by total equity

Interest Coverage Ratio: EBIT/Finance Cost where EBIT is Earnings before interest and taxes

Marketing and Advertisement Yield = Advertising and/or promotional spend divided by revenue from operations

Note: H1 FY 2024 financial particulars for Savex and Ingram are not available in public domain



Ankur Bisen
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Between Fiscal 2021 to Fiscal 2023, Rashi Peripherals Limited reported highest revenue growth compared to its competitors*. Rashi Peripherals Limited have achieved the highest EBITDA margin and return on equity compared to other key players in the technology reselling and distribution industry in FY 2021, FY 2022 and FY 2023 which shows that the company is managing its business operations efficiently and shows their ability of converting the equity financing into profits.

**Benchmarked with Player 1.*

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