

# Datacenter Industry:



## DATA CENTER SERVICE PROVIDERS STAND IN FAVOUR OF DATA LOCALIZATION

India was at 40,000 petabytes in 2010, in just a period of 10 years, it is to shoot up to 2.3 million petabytes by 2020 — twice as fast as the global rate. Mumbai, Bengaluru, Chennai, Delhi, and Hyderabad will be the major cities driving data center growth.

As we all know that data is the ‘new oil’ at present across the globe. It holds immense importance for every individual and organization. Data plays a significant role in every decision making of an organization. Data can be both personal and non-personal and privacy of that data is the fundamental right of the owner as per the Supreme Court of India. And this gave rise to Personal Data Protection Bill 2019.

Ravi Shankar Prasad, Minister for Communications, Electronics & Information Technology and Law & Justice, Govt of India said, “A good data center infrastructure is critical for a robust digital economy. India is rising high in the quest of data security, data use and data innovation. For the success of Digital India, we must become a big global Data Refinery – data cleaning, data processing, data innovation and research – and all of this will need to be done keeping in mind data privacy laws. We shall never compromise on the data sovereignty of India. The data economy has a lot of potential and in all its promise – a good data center is the pillar it builds on.”

For a populated country like India, protection of personal data is important. So as a nation, India needs a data localization policy. It is important to make sure that the critical and sensitive data of the country’s citizen should be stored locally within the border.

All companies categorized as public company, private company, corporate bodies, state entities, data fiduciary, data processors registered in India and offering services or good to individuals in India are required to comply with the Personal Data Protection Bill 2019.

“Today data is the single largest asset of a country. Critical Personal data of citizens and their financial, health related parameters and other related need to be protected. India is world’s largest democracy with

over 1.38 billion people and hence protecting personal data is essential. Hence, as a nation India needs a data localization policy. It is important to ensure critical and highly sensitive data of Indian citizens is protected, especially their sensitive data related to health, financial, biometric, affiliations etc. and any other data categorized as sensitive and/or critical should be stored locally within India,” feels **B.S.Rao, Vice President, Marketing, CtrlS Datacenters.**



**B. S. Rao**  
Vice President, Marketing, CtrlS Datacenters

Further adding to it, he says, “All business entities who fall in the categories as detailed in the Personal Data Protection Bill 2019 are now planning to store the data locally. In fact, they may have to implement data sharding - a process which breaks up large data tables into smaller chunks referred to as shards that are spread across multiple servers deployed in multiple locations.”

Recently the infrastructure major, The Hiranandani Group entered the data center space with Yotta Infrastructure, plans to build 3 data center parks across Mumbai, Navi Mumbai and Chennai with a capacity of 60,000 racks. The Adani Group has also committed to develop large data center parks in Andhra Pradesh over the next 20 years. Existing data center players are planning to ramp capacities and international players like Colt and Bridge have also announced their first data center project in India.

### DATA LOCALIZATION

If we scrutinize the reason behind data localization initiative then we can see that the prime reason is data security which means protecting national interest and citizen's right to privacy. And for this a strict law is a requisite.

“Data localization is the “What” piece of the puzzle. If we look at the core or the “Why” of this initiative, we will see that it is ultimately about data security which is necessary for safeguarding national interest and every citizen's right to privacy. That being said, what is more important is the robust implementation and enforcement of the law using appropriate technologies. We have heard many a times about the Aadhaar Data being leaked, and if that is a fact then it clearly proves that simply having data to reside within the nation does not solve the issue of it being not getting stolen and used in inappropriate ways. Therefore, I believe that Data Localization law is an important step towards protecting the sovereignty of the nation but only if equal importance is giving to the security aspect of it. One may always debate about the economic impacts it may have on the nation, but then again it can be argued both ways,” explains **Dr. Rajeev Papneja, Chief Growth Officer, ESDS Software Solution.**



**Dr. Rajeev Papneja**  
ESDS Software Solution

The data center market in India is witnessing significant growth in the data, which requires flash arrays as they offer high storage performance, especially in the virtualized data center environment.

India comprises one third of social media users and people are using free apps extensively through which they are sharing too much of personal information. Moreover, these companies do not store their data within the country which indicates that local laws will not be applied on them. With data localization initiative the government is trying to protect critical data.



**Ranjit Metrani**  
NxtGen Infinite Datacenter

“India is on the verge of losing its digital independence. With the rampant usage of free apps, the users are inadvertently sharing too much information about themselves. The stolen information has created companies which are larger than many countries themselves! It is imperative that the laws of land are applied to these businesses so that we can avoid misuse of data. One third of social media users are from India and none of these companies host the data in

the country and hence no local laws can be applied on them, nor is there an effect mechanism to put together a global framework of laws! I believe Government is doing the right thing to ensure at least critical data is actually stored within the country by businesses,” says **Ranjit Metrani, Head – Sales and Pre-Sales, NxtGen Infinite Datacenter.**

Sharing his views on data localization **Jatinder Singh Pabla, VP, Sales and Marketing, STT GDC India** says, “At STT GDC India, we believe that storing data locally allows for reduced network latency and apart



**Jatinder Singh Pabla**  
STT GDC India

from helping organizations to comply with government regulations. The terms of Data localization introduced in the bill asks that a copy of the personal data be stored in servers/data centres in India. Certain categories of data (to be notified by the central government/ DPAI) termed as critical personal data shall only be processed in a server or data centre located within the country.”

The data economy provides endless opportunities for citizens, businesses, markets, politics, culture, sports and entertainment. In India, the demand for data centers is also boosted by regulations related to data security and localisation.

### BEST PRACTICES

In line with the government's initiative of data localization, the datacenter companies are following some best practices. Web Werks India completely support government departments across the country and also promotes ‘Made in India’ initiative.



**Nikhil Rathi**  
Web Werks India

“Web Werks is part of the MeghRaj cloud initiative and one of the first few players to be empaneled by Government of India to provide Cloud & Data Center services for data localization and the digital India push. Web Werks actively supports the State government department of Maharashtra, Haryana, as well as central government departments across the country. Being a born in India company, Web Werks is promoting ‘Made in India’ initiative by indigenously build cloud technologies & DCs using best of breed international know how and partnerships,” highlights **Nikhil Rathi, CEO and Founder of Web Werks India.**

Talking about the best practices adopted by ESDS, Dr. Rajeev Papneja mentions that all their data centers are located in India and they do not believe in doing analytics on customer data. Elaborating on this he says, “As far as ESDS is concerned, we have always taken data privacy very seriously. We believe that we should do unto others what we expect them to do for us if we were in their shoes. All our Datacenters are in India so there is no question of data going out of the nation and most importantly we do not believe in doing analytics on customers data and therefore we ask the customers to bring their own analytics tools and we will only provide them with the Infrastructure and any other platform needed.”

“In recent times, we have witnessed a number of robust aspects driving the market, like accelerated digitisation, the growth of user data, e-commerce, advances in the cloud, etc. These strong drivers along with the practice of storing data locally will provide Indian businesses with skilled talent at a lower cost. Multinational organizations, in particular, will have to reconsider their data management practices and come up with measures to abide by these restrictions and ensure compliance.

As a colocation service provider, we don't process data while in rest or in transit. We maintain five layers of physical security and have necessary certifications and compliances in place that are mandated by regulatory authorities,” says **Jatinder Singh Pabla of STT GDC India.**

On this, **Ranjit Metrani of NxtGen Infinite Datacenter** views, “The big impediment for Government to force these companies to operate from India, is the digital infrastructure. Being the largest cloud provider based out of India, we are working closely with businesses with an intent comply with laws to migrate to India based digital infrastructure. Additionally, we are developing solutions that matter to the citizens of India, not just complying with evolving data-localization laws, but to protect the privacy of the individual. The first Global standard for privacy is now in place ISO 27701, specifies the requirements for establishing, implementing, maintaining and continually improving a privacy-specific information security management system.”

### GROWTH

With the growing e-commerce segment because of the low cost of

internet data, India has entered into the next phase of growth and to ensure better customer experience companies are planning to localize their data.

A recent CBRE report had stated that the datacentre capacity is expected to double in the next five years. The report also highlights that the facilities across tier I cities are expected to witness a supply addition of approximately 40% only in 2020.

“Indian e-commerce sector is stepping into the next phase of growth due to low cost of internet data, seamless availability of wireless internet on mobile and broadband. Today, India is home to 115 million online shoppers, 367 million social media users, an estimated 40 million OTT subscribers and about 300 million online gamers – they are distributed across metros, tier-2, tier-3 and rural areas. Hence to ensure all of them have a better experience most of the e-commerce players, social media companies, and online gaming companies will plan to localize their data and secondly will move closer to the customers in tier-2, tier-3 cities to provide low latency and enhanced customer experience through edge data centers. To address this growing market in India, we are planning to add 1,000 Edge Data Centers across Tier-2 and Tier-3 cities and support the expansion plans of such companies as they get closer to their customers,” sees B.S.Rao of CtrlS Datacenters.

Reiterating similar views Dr. Rajeev Papneja of ESDS Software Solution says, “India houses the fastest growing digital population and with Governments initiative of Digital India, there is no second thought that the growth is going to be exponential. We will be witnessing the real data explosion very soon in our nation. After demonetization, the way we transacted has been changed forever and today it is hard to find even a roadside tea stall who does not accept digital payment. Video content has become the new norm making the text way of explaining things almost extinct. Even without data localization, the growth would have been tremendous but with data localization I foresee it to be exponential in near future.”

Talking about the growth factors Ranjit Metrani of NxtGen Infinite Datacenter highlights, “The market will grow at a CAGR in excess of 25%, the profile of datacenters is changing, since the profile of compute infrastructure has changed. We now have a small super-computer with us, delivers 100 Terraflops of computing the performance and is sitting in half a rack. The growth will be significant in terms of power being consumed, not necessarily on the size of real-estate. India is very large country, there are 14 cities which have a GDP greater than many countries. Our thought process is to have three very large 50MW+ facilities and 11 smaller facilities with compute and storage infrastructure. We are also in the process of implementing countries first edge-cloud infrastructure at 236 identified locations, we may be able to deploy about 50 by the end of year.

The big demand for us comes not really from current business applications, but from the data being generated by IoT, CCTV and other applications. Gone are the days, enterprises are happy computing numbers, they are looking at video, speech and text analytics.”

Nikhil Rathi of Web Werks India observes, “BCP on Cloud has its own set of benefits with higher availability. Organizations can reap benefits due to the flexibility, scalability and uptime that the Cloud brings. Enterprise in India needs to optimise their return on investment, reduce IT budgets and cope with the security concerns. As per IDC report, by 2022, 30% of organizations in India will have invested in automation and development life-cycle management of cloud-native applications to realize the cost benefits and operational

efficiencies. Growth in Cloud Services also means growth in Data Center business where the cloud is hosted. Education, basic healthcare, payments, communication, and essential services are shifting online. The 3rd party data centers house multiple Internet Service Providers (ISP’s) and Cloud Platforms, while facilitating a reliable and secure infrastructure for server colocation. This interconnected ecosystem allows organizations to maintain round-the-clock operability of their servers, at the same time ensuring scalability.

In the wake of the Covid-19, managed hosting and cloud computing have both proliferated in the past few weeks and there has been a tremendous growth in demand for co-location. Demand has increased by nearly eight times as companies moved equipment or placed urgent requests on data centers for equipment. Requests for virtualization and cloud infrastructure have also caused demand to surge more than usual.”

## IT IS THE NEXT BILLION DOLLAR OPPORTUNITY IN INDIA

Datacenter service providers support the government’s initiative of data localization and they also advocate to enact the Personal Data Protection Bill as soon as possible.

India’s push for data localisation, which require certain kinds of data to be stored within the country, has generated significant demand already as it is estimated that over 75% of this data now resides outside the country. Data centres may prove to be the next big opportunity in India .The industry had been growing at close to 30% in the last ten years, boosted by the introduction of 3G, 4G and move towards a connected, inclusive digital economy means more and more data is being generated across platforms such as Cloud and social media as well as accessed by more people using mobile technology. Given the number of customers, India needs 15 times more capacity. The data centre outsourcing market in India, currently pegged at close to \$2 billion, is projected to grow at a CAGR of 25% to reach \$5 billion by financial year 2023-24.

India is witnessing a considerable surge in demand for secure data centres as businesses undertake digital transformation and consumer demand for digital services continues to increase. The expansion of hyperscalers across the region following the government’s directive on data localization is propelling a lot of this demand, with other market drivers including the growth in user data and increase in cloud penetration.

- Netmagic, is the oldest players in this space, was acquired by Japanese tech firm NTT a few years ago and remains among the biggest in this space, with further capacity expansions planned in Mumbai, Chennai and Bengaluru.
- Adani group said it would invest up to Rs 70,000 crore to set up solar powered data parks in Andhra Pradesh
- Oracle announced the launch of its Gen 2 Cloud region in Mumbai, with another planned in Hyderabad
- ST Telemedia Global Data Centres (STT GDC), which currently has a capacity of 70 MW spread over 2.14 million square feet and plans to grow further to 200 MW over 4 million sq ft, within three years.
- Hiranandani Group announce a Rs 14,000 crore investment plan.
- Reliance Industries partnering with Microsoft to provide cloud services to small and medium enterprises.
- Carlyle Group acquires 25% stake of Rs.\$ 235 million for buying a quarter of Airtel’s Nextra in India, which has 10 large data centres and more than 120 edge data centres provides customers with co-location services, cloud infrastructure, managed hosting, data backup, disaster recovery, and remote infrastructure management.
- Linode, a US based company which offers data centre solutions mainly to the software developer community, set up base in the country recently.
- Equinix Inc, has acquired the India operations of GPX Global Systems, Inc. in an all-cash transaction value of \$161 million.This includes two data center campuses in Mumbai with more than 200 international brands and local companies, including the cloud service providers (CSPs), content delivery network (CDN) providers, all local carriers, 130 internet service providers (ISPs) and four internet exchanges.

India is riding this wave in the forefront, and is expected to attract



significant investments in the time to come. As per McKinsey, core digital sectors in India, such as IT and digital communication services are projected to double in size by 2025 to contribute \$355-435 billion to the economy.

The growing emphasis on digitalization, coupled with India's local data-storage requirements, is fueling the growth of the data center market. Several Internet giants, including Google and Amazon, have set up data centers in India. Cloud adoption by small and mid-sized enterprises will increase the need for Indian data centers. The coronavirus pandemic has provided an additional boost, as companies invest in tools to maintain social distancing. Rapid digitization has opened up a massive growth opportunity for data centers in India.

"More than 80% of the users in India are mobile first consumers. For example, Google collects a staggering amount of personal information about its users than what the users realise. They remember every search performed, everywhere one goes, every video watched and now they started listening to our conversations – it is shocking and unsettling. Government should realise that India's digital independence is at stake and move with urgent, make a start. Technology is moving so fast, it is also important that a committee reviews the law on a yearly basis and makes amendments as the scenery emerges. One time Personal Data Protection Bill will be woefully short of expectations, if there is no mechanism to adopt to change," feels Ranjit Metrani, Head – Sales and Pre-Sales, NxtGen Infinite Datacenter.

"The Personal Data Protection Bill should get passed and in the wake of "Local pe Vocal". It makes more sense to have India's data stored locally and ensure that personal data is not stored or transmitted out of our borders to other countries. This ensures growth of our local Cloud and datacenter ecosystem. This growth and similar bills have shown the same benefits in China and even advanced countries like Germany. When other countries implement this we should go ahead and have our own version of the same," feels Nikhil Rathi of Web Werks India.

#### **DATACENTERS ADDRESSING THE NEEDS OF ORGANIZATIONS TO STORE DATA LOCALLY**

**ESDS:** ESDS does not exist to simply provide power, cooling and space on rent. ESDS works to help organizations disrupt their industries using technology. Banking, Smart city and SAP HANA community clouds, iPas (Integrated Planning Automation System) for Government department etc are testimonials to this. Along with the Datacenter, there will be a lot of demand coming for Remote Infrastructure Management services, SOC services, multi cloud support and ancillary tools that will use data in various ways to create sense out of it and this is where ESDS will have a big play with its team of 200 people in R&D and 300 people providing managed services round the clock. With its Datacenters in Nashik, Mumbai & Bangalore, though ESDS is currently in the expansion phase with plans to setup more DC sites to support the growing demand, we should also consider that the servers of today are coming with a configuration such that they can consolidate the infrastructure of last decade in 10% of the DC space today.

**NxtGen Infinite Datacenter:** Globally, the IT infrastructure is refreshed in the 4th/5th year. Every year, there is old infrastructure retired and new infrastructure is added. The way to approach it is ensure that the new refresh happens in India, rather than somewhere else in the world. Organizations should look for the potential that India has over the long-term and make the commitment. India has very low penetration of insurance, there is a big effort to move to digital financial transactions sponsored by Government, and impact of digital has just started in India.

**CtrlS:** Well there is always a resistance to change. The proposed Indian Personal Data Protection Policy 2019 has evoked the emotions - shock, surprise, anger. But it is important to realize that GDPR was successfully implemented in Europe – despite the resistance all businesses had to comply. The same applies to India. All those business entities who are mandated to comply will have to invest in servers, network equipment, racks, security tools and processes and collocate their infrastructure and applications.

At CtrlS, we are enhancing capacities across Mumbai, Delhi, Hyderabad, Bangalore, Chennai to ensure the growing demand due to localization is met. Besides, we have brought in automated processes

at our data centers to ensure higher efficiency and productivity. One of the other areas that we are focused is innovations – we have had 80 innovations in energy efficiency – this has resulted in industry lowest PUE of 1.38, our power tariffs are also lower as a result we are now equipped to offer our data center facilities with cost savings of 20% to 30% and in some cases even higher. We offer carrier neutral data center facilities backed by robust network (N+N) redundancy backed by multiple fiber paths. Lastly, Our data centers are all Rated-4 Hyperscale facilities hence we offer highest industry SLA of 99.995%, besides this we are deploying a 200 MW solar plant to ensure we reduce the carbon footprint.

#### **STT GDC India:**

Customers can benefit from the economy of scale that is offered by STT GDC India. It is evident that the scale brings cost optimizations as well.

Customers can benefit from our design and operational excellence. We are trusted with the mission-critical

architectures of some of the top companies offering cloud, social media, OTT and financial services. We have an extensive number of checks and measures along with elaborate redundancy system to provide all our customers' up to a 100 percent guaranteed uptime. We have built our best practices over the last 14 years and all this is offered to our customers as part of our services.

Customers can benefit by riding on our growth plans and reducing their CAPEX. As part of our growth plan in the next two years, we will offer more than 200 MW IT load to our customers. All this capacity is available to our customers on a consumption basis which reduces the CAPEX requirements for our end customers. This also means that the capacity is available when the customer needs it without waiting for multiple years of the build cycle.

Additionally, we help businesses run during tough times such as Covid-19. During the lockdown, data centres like us were given special status of "essential services" along with special passes for movement of personnel and other allowances and permissions. This, in turn, enables us to maintain, run and secure the data requirements of our clients and ensuring the smooth functioning of their businesses. Instead of creating personal structures, especially for large corporates, third party data centres are a better option as we already come equipped with the necessary requirement.

**Web Werks India:** One of the greatest myths relates to compliance which is compliance with the requirements of data localization be too expensive for small and medium-sized enterprises and entrepreneurs with studies suggesting a 30-60% rise in costs. However, if it didn't increase costs for other countries why would it increase the costs in India. The cost of keeping data outside India will be the same as keeping data inside the country. In fact, with newer hardware implemented in the country, it's not really a cost. In some cases, there might be a marginal increase in costs. However, the efficiency of data performance when stored locally covers up for these costs. There would also be a marginal cost of bringing the data here but that is basically the cost of any lift and shift and there are OPEX models available in the country which makes it easier for countries to move their data.

#### **AT LAST...**

Data localization does not only mean to keep the critical data within the boundaries but also protects the Indian citizen's right to privacy. Government should gear up to pass the Personal Data Protection Bill which will help to protect data as well as create wider opportunities for the datacenter ecosystem. At present the datacenter service providers are witnessing growing demands from their customers as India has stepped into next phase of growth. Other countries have also follow similar ways and got benefits. So with this bill into force we are hopeful that India too will get benefits from it.





# Indian IT Hardware Industry : A MIXED BAG

**While the overall Indian IT industry remained flat in 2019, an impressive PC sales boosted the morale, however the COVID-19 pandemic may put a big dent on the industry in the current fiscal**

It was a mixed bag for the Indian IT hardware industry in 2019. While a few industries registered impressive growth, some other continue to decline owing to multiple factors including changing technology dynamics, Covid-19 pandemic and a blurry future.

While the Indian PC market displayed a record growth – highest in last six years – the printer market showed a decline. Similarly, the storage market that consistently grew for the first three quarters, plunged to an abyss in Q4, taking the average Y-o-Y growth to a new low. The Indian server market showed a consistent decline throughout the year. Covid-19 pandemic turning out to be a big blow to the overall industry as it forced the market to shut down, forcing the supply chain and thus shipments to a halt, and at the same time it injected a sort of pessimism to the market that appeared to cautious now. This trend is expected to continue in

2020 as well, experts believe.

### PC Market

The India traditional PC market inclusive of desktops, notebooks, and workstations finished 2019 with an impressive 18.1% year-over-year (YoY) growth, shipping 11 million units during the year, according to IDC. 2019 also turned out to be the biggest year for PC shipments in the last six years. The growth was largely propelled by the government-driven education projects and upgrade purchases for Windows 10.

The last quarter of the year also saw a healthy 16.5% YoY growth with 2.3 million shipments, primarily contributed by the strong 26.5% annual growth in the commercial segment. Also, after a YoY decline for five straight quarters, the consumer segment saw

Company	2019 Shipments ('000)	2019 Market Share	2018 Shipments ('000)	2018 Market Share	Year-over-Year unit change (2019 vs 2018)
1. Lenovo	3,514	32.0%	1,913	20.6%	83.7%
2. HP Inc.	2,907	26.5%	2,878	31.0%	1.0%
3. Dell Technologies	2,172	19.8%	2,139	23.0%	1.5%
Others	2,383	21.7%	2,366	25.4%	0.7%
Total	10,976	100.0%	9,296	100.0%	18.1%

*Source: IDC*

growth of 4.6% YoY in 4Q19 shipping close to 950 thousand units.

As notebook PCs become thinner and lighter with enhanced mobility features, they are increasingly getting preference from the consumers, education sub verticals, and enterprises. Notebook PCs saw highest-ever annual shipments with a 67.7% category share in 2019. The desktop category also witnessed a 5.7% YoY growth largely driven by the refresh buying from banking and financial institutions and touched a 30.7% category share for the year.

On the processor front, shortage in availability of Intel's CPU was a concern point for vendors throughout the year. This provided room for AMD to enter certain segments and helped vendors to fill the gaps to some extent. However, Intel remains a leading processor brand with a 70.8% share in the traditional PC category.

### Segment highlights

The large government education projects, Windows 10 refresh orders along with vendor initiatives to target SMEs even in the lower-tier cities and helping them with easy finance options were the key drivers of strong growth in the commercial segment, aiding in its growth of 44.8% annually in 2019, says IDC.

The commercial segment saw healthy growth in all four quarters of 2019. However, vendors struggled to achieve meaningful growth in the consumer segment despite adding more ultra-slim devices with higher processing power and optimized performance in the portfolio. One notable growth area was the Gaming based PCs, which grew 51% YoY in 2019. While most of the vendors increased their shipments in the gaming segment, Asus stood out as a leading vendor with one in every four notebooks shipped being a gaming one from the vendor in 2019.

Lenovo slipped to 2nd position in 4Q19 but remains the leader for the overall year. Lenovo's commercial segment grew 32.1% YoY and the consumer segment witnessed 13.5% annual growth in the last quarter of the year, resulting in the annual growth in all four quarters of the year for the vendor.

In Q4, HP regained the top position as its shipments grew 8.6% from the same time a year ago. However, the company remained in the 2nd position for the overall year. The growth in 4Q19 was driven by the fulfilment of few education deals and strong growth in the enterprise segment.

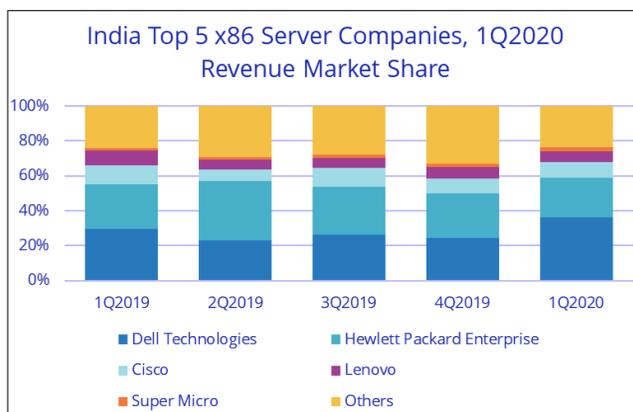
Dell Technologies maintained its 3rd position in 4Q19 and the overall year. The vendor had registered strong growth in the commercial segment driven by refresh orders from its global accounts and steady growth in the mid-market segment. However, vendor struggle continues in the consumer segment as its shipments remain flatish, when compared to the same quarter last year, according to the research firm IDC.

India's SMB market provides a large opportunity for PC vendors in the next few years, as SMBs strive to adopt new technologies for their digital transformation journey. However, the vendors need to be more innovative to deal with the aspirations of this segment and would require a cohesive ecosystem focus to improve the infrastructure and support for small and medium businesses

### Server Market

The overall Indian server market declined 10.13% in FY19-20 on account of a big fall in x86 server revenue.

If we go by quarterly basis, IDC reports, in Q4 2020 the overall server market in India witnessed a year-over-year (YoY) decline of 22.1% in terms of revenue to reach \$232.1 million in 1Q2020



Source: IDC

(Jan-Mar) versus \$298.0 million in 1Q2019. The x86 server market accounted for 85.2% of the overall server market in terms of revenue.

Major contribution to the x86 server market continues to come from the professional services and telecommunications segments, followed by banking and manufacturing verticals. Large deals were witnessed from telecommunication vendors, nationalized banks, digital wallets companies, global high-tech semiconductor manufacturing companies, and various federal government departments during 1Q2020.

The x86 server market in terms of revenue declined YoY by 25.3% to reach \$197.9 million in the fourth quarter of the financial year 2020 as against \$264.9 million in the same period a year ago. The decline was due to the lack of spending from global hyperscalers and spillover of deals into the next quarter, IDC said in its report. The restriction on the movement of goods amidst the pandemic resulted in delivery constraints with customers waiting to materialize their previous orders before placing newer ones. The market is expected to decline further in 2Q2020 due to Covid-19 affecting the financial and operational balance of the industries. Recovery is expected to be observed in 2H2020, owing to spend coming from federal government agencies, bank refresh, and network modernization projects from telecommunication vendors.

The non-x86 server market grew YoY by 3.6% to reach \$34.2 million revenue, in the last quarter. IBM continues to dominate the market accounting for 74.1% of revenue share with a revenue of \$25.4 million. Adoption of IBM's server offerings is growing primarily across banks for their core banking and internet banking workloads. As a result, 79.4% of its revenue was seen coming from banks, followed by manufacturing. Oracle came at second position followed by Hewlett Packard Enterprise (HPE) with a revenue share of 14.6% and 11.3% respectively.

In Q3 20, the overall server market in India witnessed a year-over-year (YoY) decline of 2.8% in terms of revenue to reach \$299.6 million versus \$308.1 million for the same period a year back. The x86 server market accounts for 88.1% of the overall server market in terms of revenue. The contribution to the x86 server market primarily came from professional services, education, telecommunications, manufacturing, and banking verticals. Large deals were witnessed from telecommunication vendors, nationalized and payment banks, high-tech semiconductor manufacturing companies, and education in India, during the period.

The x86 server market in terms of revenue declined YoY by 1.2% to reach \$264.0 million in Q3 as against \$267.1 million in Q3, 2018. IDC reported that the professional services vertical which includes public cloud providers, traditional IT/ITES companies, witnessed a drop in revenues of 24.1% to account for 36.1% of the overall market.

However, there was the increase in spending from verticals such as banking, telecommunications, and manufacturing that grew 33.5%, 42.9%, and 18.4% respectively. The education vertical registered the highest YoY growth of 189.9% in the x86 market during the period, according to the research firm.

The non-x86 server market declined YoY by 13.2% to reach \$35.6 million in revenue. IBM tops the market with a revenue share of 74.0%, followed by Hewlett Packard Enterprise with a share of 18.2%, and Oracle with 7.8%. Banking remains top vertical with 75.2% revenue share followed by manufacturing and insurance with 12.3%, and 3.6% respectively.

In Q2 the market grew by 0.8% in terms of revenue to reach \$280.1 million in CY 3Q19 versus \$277.8 million in CY 3Q18. This growth is majorly driven by non-x86 server market as it registered big deals from large public and private banks in India during 3Q19.

In Q1 the market declined by of 1.0% in terms of revenue to reach \$350.2 million versus \$353.9 million in the corresponding period a year ago. The x86 server market accounted for 89.9% of the overall server market in terms of revenue. The contribution to the x86 server market primarily came from professional services, telecommunication, and retail verticals. The market segment witnessed large deals from IT and ITes customers, nationalized banks, telecom service providers, and e-retail in India during the period.



Going forward, experts believe, the industry would behave cautiously and would hold on to their spend on account of pessimism in the market because of Covid-19. The industry may closely watch the next couple of quarters before investing in big scale server space.

**External Storage**

The Indian external storage market was growing consistently, around 10%, for the first three quarters till Covid-19 hit the industry in Q4. Traditional investors like Governments, banks and professional services organizations have been pumping money into the system but a sort of caution and wait-and-watch attitude was witnessed in the last quarter driving the overall industry to decline for the entire year.

In Q4 of FY2019-20, the external storage market declined by 20.6% Year-over-Year (YoY) by vendor revenue and stood at USD 87.8 million in 1Q20 (Jan-Mar). The majority of the YoY decline in storage spending was seen in professional services, manufacturing, and telecommunications organizations.

In its report, research firm IDC said that due to Covid-19, most of the organizations have reduced their IT spending for this FY2020.

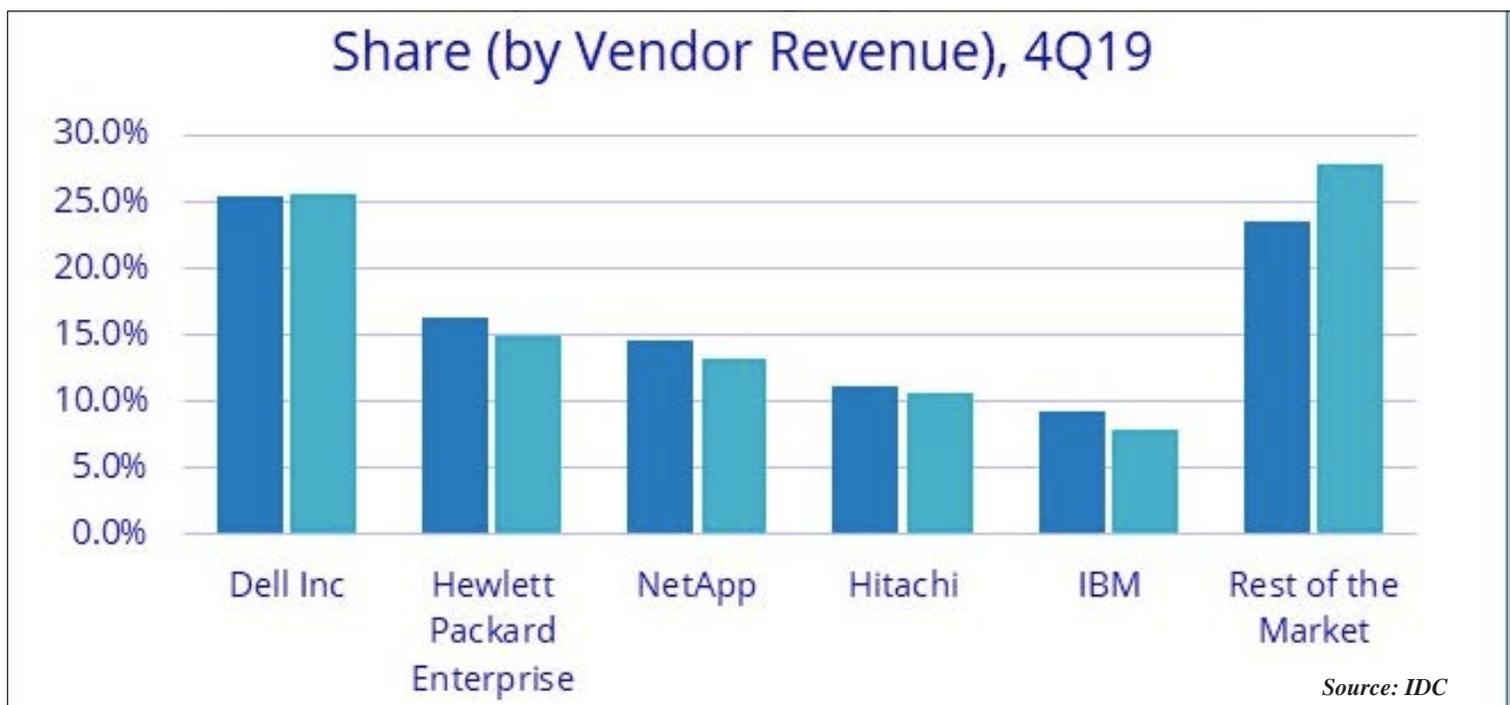
Businesses are revisiting their CAPEX spending and would invest only if there is a pressing need, else would opt for OPEX models. Organizations are moving to Public Cloud (Backup and DRaaS) so that they can avoid capital spending in these hard financial times.

All-Flash Arrays (AFA) contributed 37.6% to the overall external storage systems market in 1Q20. With the advent of NVMe, more organizations are expected to adopt new-age flash technologies to address the growing demand for high-density applications such as artificial intelligence, machine learning/ deep learning, real-time analytics, etc.

High-end storage systems grew by 3.7% YoY due to increased investments from Banking and Government organizations in 1Q20. The Entry and Midrange storage segments witnessed a steep double-digit YoY decline in Q120, IDC reports.

Organizations are expected to delay their IT spending on technology refresh but would spend on new projects which would drive automation, increase performance, and optimize costs due to cash flow issues. Businesses would prioritize projects such as digital transformation, IoT, artificial intelligence, etc. in the near future.

Dell Technologies continued to be the market leader with a



31.4% market share by vendor revenue, followed by Hewlett Packard Enterprise (HPE) with a 15.9% market share in 1Q20. Hitachi and IBM witnessed strong YoY growth in 1Q20 due to key wins from government and banking organizations respectively in 1Q20.

India's external storage market witnessed a growth of 6.0% Year-over-Year (YoY) by vendor revenue and stood at \$91.0 million in Q3. Banking, professional services, government, manufacturing, and telecommunications industries contributed 81.2% to the overall external storage market during the period.

India's external storage market witnessed a growth of 8.0% Year-over-Year (YoY) by vendor revenue and stood at USD 91.8 million in Q2. Professional services, banking, government, manufacturing, and telecommunications industries contributed 83.2% of overall external storage market in Q2.

In Q1, India's external storage market witnessed a growth of 16.4% Year-over-Year (YoY) by vendor revenue and stood at \$ 101.8 million in 2Q19.

Investments from Professional Services and Banking organizations drove the growth in 2Q19 majorly due to infrastructure modernization, technology refresh and investments on emerging technologies.

Across all the storage class categories, High-End storage grew by 69.6% YoY due to large wins in FSI, Government, Media, and Telecommunications organizations in 2Q19. Entry and Midrange external storage segments also witnessed a YoY growth in 2Q19, IDC reported in its quarterly tracker.

With the advent of Digital Transformation initiatives, there is a clear need for innovative Storage technologies to address the ever-growing storage requirements. Hyperconverged infrastructure, Object Storage and Software Defined Storage are getting more traction in the

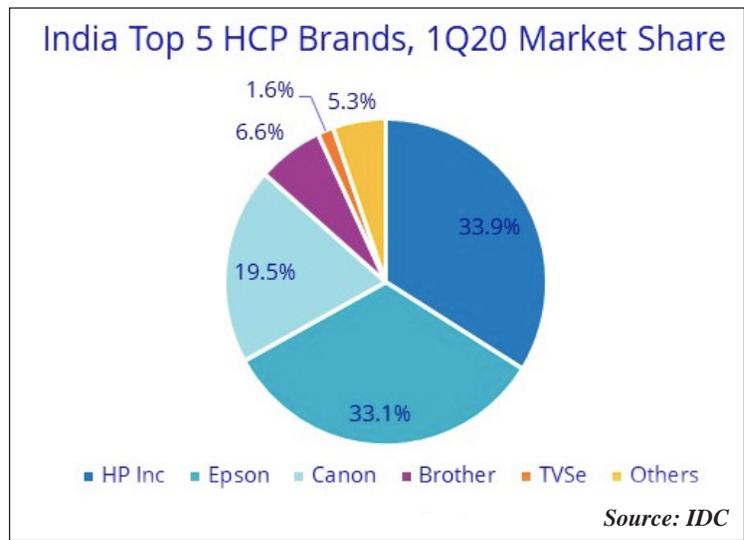
### India Market.

As a growing requirement in the digital economy, organizations are opting for automation technologies, which are self-healing even at the infrastructure layer and consumption-based pricing to lower their CAPEX and to avoid unwanted over-provisioning of infrastructure. To address these needs some of the major vendors are embedding machine learning/deep learning to infrastructure and have started offering consumption-based pricing.

Going forward, the experts afraid, the market would grow at a single-digit compounded annual growth rate (CAGR) for the 2019 – 2024 time period and storage spending in CY 2020 to decline majorly due to Covid-19 impact.

### Printer Market

The India Hard Copy Peripherals (HCP) market that includes printers and copiers, shipped 3.5 million units in CY2019 and registered a year-over-year (YoY) decline of 4.7% due to weak consumer segment demand. The annual decline was primarily from laser printers (excluding copiers) declining by 11.8%, as the market continued to be impacted by weak demand as well as migration to Ink Tank printers. The laser copier market grew by 6.9% with



strong corporate demand and continuing decline of refurbished copier market. The inkjet market remained stable with a decline of 0.1%. The year ended with the inkjet market commanding more than half of the market.

In 4Q19 the market shipped 0.79 million units, a YoY decline of 7.3%. 4Q19 witnessed low demand, which was a result of overstocking of the channel in 3Q19 and prevailing consumer sentiment.

Ink Tank printers grew by 7.0% and now command 73.2% of the inkjet market. The Ink Tank segment overtook the overall laser printer segment for the first time in 2H19. The laser copier segment also noted a growth of 6.9%. In 2018, Government's strict regulation on the refurbished Copier (RC) market through tight monitoring and increased seizing of illegal units at major ports gave a boost to the original copier segment, which continued in 2019 as well. However, by 2H19 the market resumed its normal pace of growth as the effect of RC market stabilized, reports IDC in its quarterly tracker study.

### Top 3 Brand Highlights:

HP maintained its leadership in CY2019 HCP market with a market share of 39.1%, while posting a YoY decline of 7.4%. HP's Ink Tank shipment grew by 14% YoY as a result of strong channel schemes and end-user promotions. Its Laser A4 segment witnessed a decline of 9.7% YoY, its highest decline since CY2009. On the bright side, HP's share in the copier segment grew by 29.4% YoY owing to strong channel push.

Epson maintained its 2nd position in the overall CY2019 HCP market with 26.8% market share. It also continued to hold its leadership in the inkjet segment with a market share of 45.7% and YoY growth of 1.4%. Epson's stable numbers despite muted market sentiments can be primarily attributed to Epson's strong brand recall, channel depth and multiple channel schemes in the first half of the year.

Canon recorded YoY decline of 6.3% in CY2019 and maintained its 3rd position in the HCP market. In the copier segment, it maintained its leadership position with a 29% unit market share as a result of its strong corporate connect and steady flow of government orders. In the Ink Tank segment, Canon witnessed a strong YoY growth of 15.7% because of its increased focus on the Ink Tank segment with launch of new models, attractive channel schemes and end-user promotional campaigns. In 2H19, Canon overtook HP to become the 2nd largest player in the Ink Tank segment.

Due to Covid-19 pandemic resulting in multiple tranches of nationwide lockdown, there is a lot of uncertainty resulting in frequent changes to the outlook for the coming quarters. However, under the assumption that things become normal from 3Q20 onwards, vendors are still likely to face a slowdown in consumer demand as they prioritize their spending towards essential goods.

However, despite weakness in consumer demand, IDC expects the India HCP market to start showing signs of recovery from 3Q20 onwards as economic growth starts rebounding. Vendors are likely to go aggressive with their marketing and promotional campaigns during 4Q20 to cash in on the festive season.

