

TechTalk

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India to Build a New Super Computer By 2017

India will get an indigenously – built supercomputer next year as part of the government's Rs 4,500-crore program aimed at taking India into an elite league of nations who have made advancements in the field.

The Centre for Development of Advanced Computing that built India's first supercomputer, Param, is handling the project, said Ashutosh Sharma, Secretary in the Ministry of Science and Technology. The government had in March last year approved the plan of the National Supercomputing Mission, under which 80 supercomputers will be built in the next seven years. "Some of them will be imported and the rest will be built indigenously. The first one will come up by August 2017," he said.

"We are working on how to control heat. The cost of power to run these supercomputers alone will be around Rs 1,000 crore," Sharma said.

The new supercomputers will be kept in different institutes across the country. "A supercomputer can be used for various purposes like climate modeling, weather forecast, discoveries of drugs among others," Sharma said. Currently, countries like the US, Japan, China and the European Union account for a major share of the top supercomputing machines in the world. India is opening up its supercomputing program to the private sector for the first time, prompting interest from some of the world's largest makers of personal computers and reflecting a new mindset that is open to partnerships outside the government.

The likes of Hewlett Packard Enterprises, Lenovo, Acer, Dell-owned EMC Corporation, and IBM are in the fray for the government's National Supercomputing Mission which involves a network of super computers which can help strengthen India's research and predictive capabilities in areas such as weather and climate modelling, biology and disaster management.

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Cook, Modi Meet to Discuss India Manufacturing Plans



Tim Cook, the CEO of the Cupertino based iPhone maker, Apple has met the country's Prime Minister, Narendra Modi to explore the possibilities of setting up its manufacturing base in the country as well as revamping its retail strategies. With India recently topples the US as the globe's second largest smartphone market, Apple is betting big to tap the mounting opportunities in the country's smartphone space. The hour long meeting was held in Central Delhi in which Apple illustrated its expansion plans to the country's top minister. The company is eyeing to expand its retail penetration in the country and is also mulling a license to come up with its wholly owned retail stores in India by the coming year. As per the government officials, India too is keen to have Apple's manufacturing facilities onboard, which will be a major milestone for the country's ambitious 'Make in India initiative'.

Apple also for the first time clocked a revenue of \$1 billion from India in the FY 2015 and with Tim Cook, touring the country for a 4-day business visit, the company would further like to inflate its earnings in the existing fiscal. A slump in the global shipments of iPhones, also comes as a major reason for Apple to focus on emerging markets like India. At present the company holds a market share of only 2 per cent in the country's smartphone market, which witnessed the sale of 100 million smartphones last year. Apple has also been eyeing the import of its refurbished phones in the country, but its request was rejected by the government earlier this month. The tech giant's CEO, during his trip also met the top officials of the country's corporate giants including Bharti Airtel and ICICI Bank. Apple has also inaugurated its software development center in Hyderabad, days ago along with a program to facilitate developers, working on the iOS.

The Future is Now

MasterCard Unveils the First Commerce Application for Humanoid Robot Pepper

Customers at Pizza Hut restaurants in Asia will soon get the chance to have their order taken by a robot.



MasterCard has unveiled the first commerce application for SoftBank Robotics' humanoid robot Pepper. The application will be powered by MasterPass, the global digital payment service from MasterCard that connects consumers with merchants, enabling them to make fast, simple, and secure digital payments across channels and devices. Pizza Hut Restaurants Asia P/L will be the inaugural launch partner working together with MasterCard to create innovative customer engagement with Pepper.

A major first step in bringing conversational commerce experiences to merchants and consumers, this new app will extend the robot's ability to integrate customer service, access to information and sales into a seamless and consistent user experience. Pizza Hut Asia will be piloting the Pepper robot in order-taking and personalized engagement in its stores by the end of 2016.

"Consumers have come to expect personalized service, customized offers, and simple and seamless processes both in-store and online," said Tobias Puehse, Vice President for

Innovation Management, Digital Payments & Labs at MasterCard. "The app's goal is to provide consumers with a more memorable and personalized shopping experience beyond today's self-serve machines and kiosks, by combining Pepper's intelligence with a secure digital payment experience via MasterPass." The robot will be installed in "between six and ten stores in Asia this year," said John Sheldon, Global SVP, Innovation Management, MasterCard Labs. Pepper can speak 19 languages and will "add more intelligence to kiosk ordering. Pepper guides you through the process of placing the order and can answer nutritional questions and communicate any specials."

A customer will be able to initiate an engagement by simply greeting Pepper and pairing their MasterPass account by either tapping the Pepper icon within the wallet or by scanning a QR code on the tablet that the robot holds. After pairing with MasterPass, Pepper can assist cardholders by providing personalized recommendations and offers, additional information on products, or assistance in checking out and paying for items. Pepper will initiate, approve and complete a transaction by connecting to MasterPass via a Wi-Fi connection and the entire transaction happens within the wallet. Pepper has a number of human-like features. The robots "are intentionally designed to convey emotion," using sensors and cameras "to interpret the emotional state of the person they are interacting with and the cameras that it's using are evaluating the behavior." For example, if the customer is excited and animated, so, too, would be Pepper. If the customer's movements are more muted, "then it would instead respond with a lot calmer and smaller gestures, so as to put that person at ease." If the customer gives his or her permission, the robot can remember their order history and ask if they want the same food or drink this time.

"We are excited to welcome Pepper to the Pizza Hut family," said Vipul Chawla, Managing Director of Pizza Hut Restaurants Asia. "Core of our digital transformation journey is the ability to make it easier for customers to engage, connect and transact with Pizza Hut. With an order-and-payment-enabled Pepper, customers can now come to expect personalized ordering, reduce wait time for carryout, and have a fun, frictionless user experience."

Futuristic Bus Concept to be tested in China

A radical new "straddling bus" that allows cars to drive underneath it will be tested in China this summer.



Plans for the Land Airbus – proposed by the Transit Explore Bus Company – have been floating around for several years. Previous versions failed to have much of an impact, but last week a model was showcased at the China Beijing International High-Tech Expo (CHITEC); and a full-scale prototype is now planned for testing on the streets of Qinhuangdao, a coastal city about 200km east of Beijing, this July or August. The Land Airbus would measure 60m (197 ft) in length, 7.8m (25 ft) in width and 4.5m (15 ft) in height. Travelling on rails at each side of a road, it could arch over the flow of traffic, spanning two lanes, with cars and other small vehicles able to pass below.

"The biggest advantage is that the bus will save lots of road space," said chief engineer Song Youzhou, in an interview with Xinhua, the state-owned news agency. Youzhou has worked on the project since the beginning, in partnership with various companies.

Carrying up to 1,400 commuters and moving at 37 mph (60 km/h), its combination of speed and capacity would enable the Land Airbus to do the equivalent work of 40 traditional buses. Electrically powered, it would also help to reduce air pollution currently a major problem throughout China – and cut greenhouse gas emissions. Furthermore, costs would be substantially lower than a subway.

"It has the same function as the subway, but it costs only 16 percent of what a subway costs," added Youzhou. "Manufacturing and construction times are also much shorter than that for a subway."

Technology Focus

How to Maximize your Returns on Investment in SSD Storage

An investment in high speed solid state drives (SSDs) is just like any other investment: it should be carried out with a view to maximizing the return on investment (ROI).

When you look at it like that the decisions about whether to invest in SSDs, how much SSD storage to buy, and where to deploy it become much easier: it becomes a matter of working out what course of action maximizes your SSD ROI. One way to do this is to think about investing in SSDs in the context of a portfolio. A financial portfolio will often contain a mixture of cash, stocks and bonds, and its exact make up will depend on the investor's attitude to risk versus return, as well as the need for income and other factors. You can think of an enterprise storage portfolio as something similar: it will usually consist of some combination of tape, hard disk drive (HDD) and SSD storage, and its exact make up will depend on the enterprise's need for storage capacity and the storage requirements of the applications it runs. But, crucially, the makeup of an enterprise storage portfolio also depends on the financial resources it has at its disposal. That's because if the storage budget were unlimited (or, put another way, if all storage was free to buy and operate) then running an all SSD environment would be a no-brainer.

Software defined storage key to SSD ROI

So going back to a financial portfolio, one of the key decisions an investment manager needs to make is about asset. What that comes down to is this: how much of the portfolio should be allocated to stocks, how much to bonds, and how much left in cash. Each asset class has its own risk and return characteristics, and changing the mix of three types of assets affects the risk and return profile of the portfolio as a whole.

Something similar is true with a storage portfolio. One of the key decisions you need to make is how much storage should be allocated to SSD, how much to HDD and how much to tape. Each storage medium has its own performance and cost characteristics, and the mix of each storage type affects the profile of the storage portfolio as a whole.

To maximize your SSD ROI you need the flexibility to change your asset allocation as your requirements, prices and the performance of storage devices change, and the way to get that is through software defined storage (SDS), according to Mark Lewis, a former CTO of EMC and GM of HP Storage who is now CEO of storage software startup Formation Data Systems.

He argues that SDS provides the storage agility required to add SSD resources to whichever applications can benefit from them the most at any given time – helping to maximize SSD ROI – and since SSDs can be installed in commodity hardware (rather than specialized arrays) that also helps improve SSD ROI.

In fact, it is SDS that enables storage to be treated as a single portfolio (or "pool") of different storage assets rather than as a collection of disparate and sometimes incompatible devices. For companies yet to invest in SSDs, Lewis adds that software defined storage can also help SSD ROI by insulating buyers from the need to deal with new vendors selling hardware that may be incompatible with their existing storage systems.

"Flash shouldn't be disruptive because it is just a new technological development and a good storage architecture should make that transparent," he says. "So with software defined storage there is no discontinuity – you don't need to deal with new vendors and learn to use new hardware to take advantage of flash."

Internal markets to boost SSD ROI

Before you can tackle the problem of storage asset allocation you need to have a clear idea of the monetary value to your organization of better storage performance for specific applications. Let's go into the issue in a little more detail. It may be desirable for a particular application to run on faster storage. But unless you can articulate how desirable that is by figuring out what the financial benefit would be over a fixed timeframe – if the storage performance were x% faster or y% faster – you can't calculate whether it is worth making the investment in SSDs needed to achieve an x% or y% performance gain. The other side of the equation is the amount that needs to be invested in SSDs over that time frame to achieve an x% or y% performance gain. It's only then that you can calculate SSD ROI. The cost of SSDs themselves is obviously important, but the total cost of ownership (TCO) over the time period is actually what's relevant. This includes the purchase cost of the SSDs themselves, but other factors that need to be taken into account include:

- **Power consumption** – SSDs consume less power and require less cooling than HDDs, and a relatively small number of individual SSDs may replace a large number of short-stroked HDDs.
- **Array or other enclosure costs** – SSDs have tended to be lower capacity than HDDs in the past, resulting in higher rack space requirements per gigabyte stored than HDDs unless short stroking is being employed. (That is becoming less of an issue because SSDs now has capacities on a par with HDDs, although they are very expensive.)
- **Savings from reallocating HDDs** – drives that have been replaced by SSDs can sometimes be redeployed to other storage duties, obviating the need to purchase new disks. (It's worth noting that if HDDs have been short stroked to provide higher performance than the storage capacity that has been freed up will be magnified if the drives are subsequently deployed without short stroking.)

Jim Handy, an analyst at Objective Analysis, points out that the Storage Networking Industry Association (SNIA) has a useful tool dating back to 2009 that can help you work out which of your applications can get you the biggest SSD ROI.)

Tech News

Internet Sathi Initiative Benefits 1Lakh Rural Women



While women have made rapid progress in adoption of Internet in urban areas of India, women in rural India are getting left behind. To lift up the rural women's internet knowledge, Google India launched 'Internet Sathi,' in collaboration with Tata Trusts and Intel in July 2015. Within 10 months about one lakh women in rural India have benefited from its internet literacy drive under the 'Internet Saathi' initiative, Google India said recently. The Internet Saathi program is expanding in four more states — west Bengal, Assam, Uttar Pradesh and Tripura. In the villages of Rajasthan, Gujarat, Jharkhand, Andhra Pradesh and Madhya Pradesh the program has already helped 1, 00,000 women, it added.

The program focuses on training women and larger communities in rural India to explore various uses and benefits of the internet. Google provides the devices and the training material to the Saathis and

Saathis then impart training to the rural community in their own and neighboring villages. Internet-enabled devices like tablets and smartphones are also placed on school premises and at community centers, self-help group meeting places, agriculture centers.

"Internet usage by women in rural areas continues to remain a challenge. Only 1 in 10 internet users in rural India is a woman. With this program, we are creating an enabling environment that empowers them while also bridging the technology gender divide," Google India Head Marketing Sapna Chadha said. She added that the program expansion will take the company closer to its aim of reaching 3 lakh villages in India in next few years.

Facebook and Microsoft Collaborate For an Undersea Cable



US based technology giants, Microsoft and Facebook have entered into an agreement to build a subsea cable system, which will pass through the depths of the Atlantic Ocean. The cable, MAREA as per the two companies will address the increasing demand for high speed and seamless connections for cloud as well as online services from the customers of Microsoft and Facebook. Both the companies are in advanced stages of the contract, with the construction of the cable expected to initiate by August 2016. The cable project is expected to be completed by October 2017.

"Microsoft and Facebook are collaborating on this system to accelerate the development of the next-generation of Internet infrastructure and support the explosion of data consumption and rapid growth of their respective cloud and online services. MAREA will be the highest-capacity subsea cable to ever cross the Atlantic - eight fiber pairs and an initial estimated design capacity of 160Tbps," said the release issued by Facebook on its page. The submarine cable, stretching across 6,600 km will be managed by Telxius, the

telecom and infrastructure division of Spanish Telecom Company.

The cable will be compatible with a host of networking equipment and will help bring down costs as well as well ease the scaling up of equipment. Telxius will also serve as the operator for the subsea system and will sell capacity to other operators under their infrastructure business. Google has already invested in two subsea cables which span across the western coastlines of the United States, connecting the country with Japan, while another underwater cable of the company links US with Brazil along with different part of the Asian continent. The joint move is being cited as an effort to create an indigenous network infrastructure with Microsoft and Facebook, to save on their operating expenditures arising from leasing bandwidth from the existing cable frameworks.

Intel's New Initiatives to Support Digital India



Intel India has announced three initiatives to help facilitate the Prime Minister Narendra Modi's Digital India program. It launched three projects designed to accelerate digital literacy at the grassroots level by reaching out to the population in non-urban India, upskill citizens in tier two cities and beyond and encourage innovation from the local level.

"We are thrilled to see the progress made through our collaboration with the government of India on various initiatives like 'Digital India' that are bringing technology and innovation mainstream in India," Robby Swinnen, general manager, Intel Corporation (Asia-Pacific & Japan) said in a statement. Building on the momentum of its "Ek Kadam Unnati Ki Aur" initiative to accelerate access to technology in non-

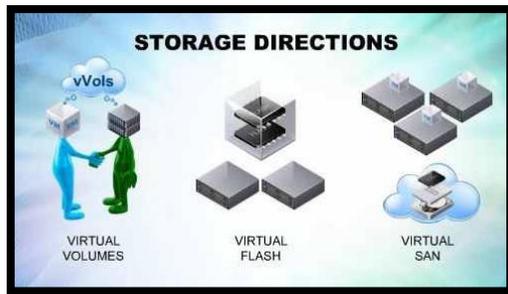
urban India, Intel India e-launched its latest "Unnati Kendra at Common Service Centre" (UK at CSC) in Karnal, the first in Haryana. The 'UK at CSC' will serve as the common access digital learning centers for people of the state. Intel India is working with the government to open a network of up to 100 'UK at CSC' facilities across 10 states this year, with 10 such facilities already set up in the state of Telangana. Intel India also announced the "Digital Unnati" website that is being set up in collaboration with the CSC e-Governance Services India Ltd. It will enable Village Level Entrepreneurs (VLEs) to learn how to assemble a PC online and upskill their technology know-how.

In addition, inspired by the overwhelming response and the success of the first chapter of the Intel and DST- Innovate for Digital India Challenge, Intel India is laying the groundwork for launching the challenge later this year. This challenge supports local innovation and entrepreneurship and is a nationwide competition inviting technology solutions to solve real problems faced by citizens. "Intel India is fully committed to achieving the realization of a truly Digital India and has been supporting this vision by fostering innovation and upskilling of the non-urban population," Debjani Ghosh, vice president, sales and marketing and director, Intel South Asia, added.

Special Focus

VMware VVOLs Could Lift External Storage Systems

VMware VVOLs could be the elixir traditional external storage systems need to gain ground on VM-centric storage and hyper-converged products.



Over the past couple of years, the traditional external shared storage market has been under attack. Inexpensive scale-out cloud storage has become the technology of choice for "born-in-the-cloud" applications. Meanwhile, in on-premise data centers, the popularity of hyper-converged products and other virtual-machine-centric storage has skyrocketed. Many shops are moving away from a DIY approach using top-of-the-line components toward converged and hyper-converged products which offer a simpler storage management experience. These technology trends present a challenge for the traditional external storage providers like Dell, EMC, HP, IBM and NetApp. However, another new technology may help swing momentum back toward traditional external storage systems. VMware vSphere 6.0 includes a new storage feature called VVOLs. VVOLs allow for provisioning and management of storage at a virtual machine (VM)-level, rather than at a LUN, volume or mount point level. VMware says that VVOLs make external storage arrays "VM-centric" in respect to managing their capabilities,

which eases storage management. This is similar to the capabilities that hyper-converged players such as Nutanix and SimpliVity, along with Tintri VM-centric storage, have been delivering.

Traditional external shared storage benefits

External shared storage was created as a way to optimize performance and reliability for spinning media. The performance of individual hard disk drives has never kept up with the advances in computing and networking capabilities. This need to innovate around spinning media deficiencies was very profitable for many companies and created storage-centric juggernauts like EMC and NetApp. The following key attributes of external storage systems still have tremendous value today:

- **Quality of service.** The easiest way to guarantee quality of service (QoS) is to control and design all the components that go into the product. External storage providers can regularly claim five to six nines of availability and guarantee this by having well-defined access interfaces controlled by known hardware components. This also allows vendors to guarantee a certain level of performance in combination with high availability of the entire system.
- **Centralized hardware management.** It is critical to know where your data physically resides when dealing with compliance and security issues. Also, centralized storage hardware makes component repair easier.
- **Cost optimized, hardened data services.** Centralizing particular data services still make sense when applied across a large pool of replaceable storage components. RAID protection, data capacity optimization technology, performance tuning, snapshots and replication are a few mature data services that have been hardened through years of quality control.

Ease of use falls short

Unfortunately, these external storage attributes contributed to massive complexity. Because of this, companies have traditionally invested heavily in storage management specialists to maximize the benefits of these advanced features. But today, there are many cloud-based infrastructure as a service and storage as a service system that dramatically reduce complexity and acquisition costs. Cloud-based services are being embraced by customers at an accelerating rate. Storage vendors' first attempt to combat cloud economics came in the way of a converged infrastructure. This was the first step toward reducing storage complexity as more and more customers rejected the DIY approach to data center design. Now, hyper-converged infrastructure is eroding the dominance of traditional three-tiered, on-premises storage architecture by improving the ease of use and lowering the acquisition cost even further. Newer generations of external storage systems for virtualized workloads have embraced a flash-first design and have invested heavily in QoS capability. Some vendors have invested in data-aware capabilities that unleash a full set of real-time analytics to unlock the value of the data stored. While these additional capabilities have helped stem the tide of market stagnation, the next generation of shared storage arrays must also embrace a dramatically simpler management paradigm. This is why VVOLs are positioned to have a profound effect. Embracing a VM-centric approach to provisioning and managing storage significantly reduces the storage complexity in a virtualized environment.

VVOL systems not all equal

VVOL capable systems promise to transform the administrative experience while unleashing the benefits and features of traditional external shared storage. However, not all VVOL implementations are equal, as each vendor can integrate different storage features with VVOLs. This can dramatically affect how VM-centric the array actually is. Data generated by "born in the cloud" and "big data" applications will forever reside in distributed scale-out data storage technology. However, for on-premises deployments and virtualized enterprise workloads, VVOLs will help swing the momentum back toward shared external storage systems by providing the key benefits enterprise customers have embraced for years while making them easier to use.

The stampede toward stemming the cloud economics problem with software-defined everything products has a lot of momentum. Traditional array vendors will fight in a variety of ways to keep the cloud from usurping revenue and margins. VVOLs will be an important tool in that battle. The good news is, they also make your job easier.

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MD Speaks

"Dear Readers,

The elections in four states are over and the results are out. Though none of the results were shocking, a definite trend seems to be emerging in many states. Indian politics is getting disrupted. The first signs of disruption were in 2011, when the Trinamool Congress (TMC) coming into power in West Bengal after defeating the incumbent of 34 years. Then the Aam Aadmi Party (AAP) came to power in Delhi, albeit for a very short time followed by the BJP storming the centre and reducing the incumbent Congress to less than 10% of the seats. Then the AAP whitewashed the Delhi elections, an unlikely partnership of erstwhile sworn enemies - Nitish Kumar and Lalu Prasad Yadav won Bihar, TMC retained West Bengal and the Congress is nearly wiped out. Sounds familiar! A well set giant falling to an upstart. David winning against Goliath.

Nokia, Kodak, Blockbuster Video Rentals, Barnes & Noble Booksellers and a host of well-set companies losing out to disruptive competitors. And it's not that they did not know or could not prepare about the disruption. In fact in Kodak's case it was quite the opposite. Steve Sasson, the Kodak engineer who created the first digital camera in 1975, has documented the response to his invention this way: "Management's reaction was, 'That's cute — but don't tell anyone about it.'" So Kodak's leaders were aware, but in denial. There's a lesson to be learnt from this for all of us. Especially the political parties in India.....and now the USA too!

Happy Reading."