GALAXY

TechTalk
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LISTENING TO BUSINESS, APPLYING TECHNOLOGY

India set to build Supercomputer Grid

Determined to raise India's ranking in the world of high-performance computers, the government is set to clear a Rs. 4,500-crore ($730 million) mission this month to build supercomputers nearly 40 times quicker than our fastest one.

A finance ministry panel mandated to clear all big-ticket investments recently okayed the National Supercomputing Mission, jointly steered by the department of science and technology and the department of electronics and information technology.

The mission intends to set up 73 supercomputing facilities on a buy-and-build approach at academic and research institutions across the country and network them into a grid. Three of them — the first ones to be set up over the first three years — would be India's first supercomputers capable of peta-scale computing and would join a global league of just 37 such machines.

Peta-scale computing refers to the ability to add at least a quadrillion (1,000 trillion) real numbers in a second. "This speed is equivalent to 5,000-6,000 high-end laptops working in tandem," said Professor Rajat Moona, director general of the Centre for Development of Advanced Computing that gave India her first supercomputer.

The seven-year plan has been divided into two phases — the first three years for construction of the machines and the next four for the applications that will use this grid. The supercomputers will occupy a space of over 20,000 square feet, or the size of 10 three-bedroom apartments.

At present, India has two supercomputing machines in the world's top 100, and nine in the top 500.

Its fastest supercomputer at the Pune-based Indian Institute of Tropical Meteorology is ranked 52.

A little less than half of all supercomputers in the top 500 — 233 — are in the US. But the world's fastest, Tianhe-2 (MilkyWay-2), belongs to China's National University of Defense Technology. A late entrant, China has 75 other supercomputers on the list — nearly as many as Japan (30), France (27) and Germany (23) put together.

IBM launches OpenStack services and also a Data Centre in Mumbai

IBM launched OpenStack services designed to meld on premise and cloud computing resources as well as a data center in Mumbai. The Mumbai cloud services launch comes on the heels of IBM's Cloud Center debut in Paris. IBM's Mumbai cloud delivery center is 31,000 square feet.

IBM's move comes as Amazon Web Services launched a data center in Germany. Microsoft has also expanded. The reason: Many countries have in-country data rules and U.S. cloud providers are building local facilities to meet data sovereignty requirements. About 100 countries have data sovereignty laws.

For Big Blue the cloud build out comes with a heavy dose of services and an army of 40,000 consultants positioned around the world.

IBM's OpenStack services include a 99.5 percent service level agreement, dedicated compute, storage and networking and a DevOps environment. IBM also rolled out an Object Storage service based on OpenStack.
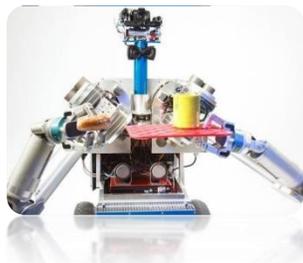
The Future is Now

Could a robot do your job?

As a personal care aide, Marcia Olson spends 35 hours a week cooking, cleaning, giving insulin shots or just spending time with her elderly client.

"Anybody can do this job, but it isn't for everybody," says the 61-year-old Olson, who has been a care aide for 23 years. It's a hard job, but rewarding, she says.

By 2017, about 225,000 more aides like Olson are likely to be needed, making it one of the fastest-growing jobs. But with wages around $10 per hour, it's hard to find good candidates.

It may get even harder. Home health care workers, food service workers, retail salespeople and custodians will account for nearly 1 million of the 2.4 million new, low-skill jobs expected to be added in the U.S. by 2017, according to a USA TODAY analysis of jobs data from Economic Modeling Specialists Intl. and CareerBuilder.

"We're moving the unskilled jobs into skilled jobs. And that is going to be a challenge for us going forward," says Henrik Christensen, director of the Institute for Robotics and Intelligent Machines at the Georgia Institute of Technology. "If you are unskilled labor today, you'd better start thinking about getting an education."

Beating battery drain

Startup's power-conserving chip may increase smartphone battery life, save energy in cell towers.

Stream video on your smartphone, or use its GPS for an hour or two, and you'll probably see the battery drain significantly. As data rates climb and smartphones adopt more power-hungry features, battery life has become a concern. Now a technology developed by MIT spinout Eta Devices could help a phone's battery last perhaps twice as long, and help to conserve energy in cell towers.

The primary culprit in smartphone battery drain is an inefficient power amplifier, a component that is designed to push the radio signal out through the phones' antennas. Similar larger modules are found in wireless base stations, where they might use 10 or even 100 times the power.
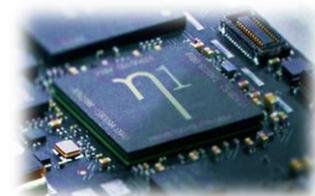
Prepared to send sizeable chunks of data at any given time, the amplifiers stay at maximum voltage, eating away power — more than any other smartphone component, and about 75 percent of electricity consumption in base stations — and wasting more than half of that power as heat. This means smartphone batteries lose longevity, and base stations waste energy and lose money.

But Eta Devices has developed a chip (for smartphones) and a shoebox-size module (for base stations) — based on nearly a decade of MIT research — to essentially "switch gears" to adjust voltage supply to power amplifiers as needed, cutting the waste.

"You can look at our technology as a high-speed gearbox that, every few nanoseconds, modulates the amount of power that the power amplifier draws from the battery," explains Joel Dawson, Eta Devices' chief technology officer and a former associate professor of electrical engineering and computer science who co-invented the technology. "That turns out to be the key to keeping the efficiency very high."

When trialed in a base station last year, Eta Devices' module became the first transmitter for 4G LTE networks to achieve an average efficiency greater than 70 percent, Dawson says. "The highest number we've heard before that was 45 percent — and that's probably being generous," he says. Backed by millions in funding, Eta Devices has partnered with a large base-station manufacturer. The goal is to deploy the technology in live base stations by the end of 2015. The savings could be substantial, Dawson says, noting that a large carrier could save $100 million in annual electricity costs.

Eta Devices has also entered conversations with major manufacturers of LTE-enabled smartphones to incorporate their chips by the end of next year. Dawson says this could potentially double current smartphone battery life.

Besides battery life, Dawson adds, there are many ways the telecommunications industry can take advantage of improved efficiency. Eta Devices' approach could lead to smaller handset batteries, for example, and even smaller handsets, since there would be less dissipating heat. The technology could also drive down operating costs for base stations in the developing world, where these stations rely on expensive diesel fuel for power.

And ultimately, it could impact the environment: If all midsized carrier networks were to replace current radio amplifiers with Eta Devices' technology, he says, the reduction in greenhouse gases would be equivalent to taking about 5 million cars off the road. "There are so many ways to leverage high efficiency if you have it." Dawson says.

Future-proofing technology

Today, Eta Devices' major advantage is that its technology is able to handle ever-increasing data bandwidths.

A few major smartphone manufacturers are now using envelope tracking (ET), which adjusts voltage to power amplifiers on the fly. But by adjusting that voltage continuously, ET efficiency falls apart for 4G/LTE and 802.11ac (WiFi) wireless standards, even up to 20 MHz bandwidth. ETAdvanced, in contrast, already accommodates ultrahigh bandwidths used by newer communication standards, such as LTE Advanced (up to 80 megahertz), and the next-generation WiFi standard (up to 160 megahertz).

Prepping for future communication standards is one thing that's helped the company thrive, Dawson says. "As a small company, you'll lose a fair fight with another technology — you have to have some overpowering advantage that they can't match you on," he says. "In introducing new hardware, you not only have to be better than the product of today, but also have to make compelling case for being future-proof."

Technology Focus

10 top technology trends for 2015

Wonder which are the technology trends that are likely to have a significant impact on organizations in the year 2015? Research agency Gartner has identified 10 such technologies that organisations cannot afford to ignore. However, it is not necessary that companies adopt and invest in all of these trends at the same rate, but companies do need to look to make deliberate decisions about them during the next two years.

Here's looking at the top 10 technology trends that will prevail in the coming year.

*1. Computing everywhere-*As mobile devices continue to proliferate, Gartner predicts an increased emphasis on serving the needs of the mobile user in diverse contexts and environments, as opposed to focusing on devices alone. According to David Cearley of Gartner, as phones and wearable devices become part of an expanded computing environment, it's the overall environment that will need to adapt to the requirements of the mobile user. This will create significant management challenges for IT organizations as they lose control of user endpoint devices. It will also require increased attention to user experience design.

2. The internet of things - The combination of data streams and services created by digitizing everything creates four basic usage models to manage, monetize, operate and extend. These four basic models can be applied to any of the four "internets.". Enterprises should not limit themselves to thinking that only the Internet of Things (IoT) (assets and machines) has the potential to leverage these four models. For example, the pay-per-use model can be applied to assets (such as industrial equipment), services (such as pay-as-you-drive insurance), people (such as movers), places (such as parking spots) and systems (such as cloud services). Enterprises from all industries can leverage these four models.

3. 3D printing- Worldwide shipments of 3D printers are expected to grow 98% in 2015, followed by a doubling of unit shipments in 2016. New industrial, biomedical and consumer applications will continue to demonstrate that 3D printing is a real, viable and cost-effective means to reduce costs through improved designs, streamlined prototyping and short-run manufacturing.

4. Advanced, pervasive and invisible analytics- Analytics will take center stage as the volume of data generated by embedded systems increases and vast pools of structured and unstructured data inside and outside the enterprise are analyzed. Organizations will have to find ways to manage how best to filter the huge amounts of data coming from the IoT, social media and wearable devices, and then deliver this information to the right person, at the right time. Big data remains an important enabler for this trend.

5. Context-rich systems- Ubiquitous embedded intelligence combined with pervasive analytics will drive the development of systems that are alert to their surroundings. Context-aware security is an early application of this new capability, but others will emerge. By understanding the context of a user request, applications can not only adjust their security response but also adjust how information is delivered to the user.

6. Smart machines- Deep analytics applied to an understanding of context provide the preconditions for a world of smart machines. This foundation combines with advanced algorithms that allow systems to understand their environment, learn for themselves, and act autonomously. Prototype autonomous vehicles, advanced robots, virtual personal assistants and smart advisors already exist and will evolve rapidly, ushering in a new age of machine helpers. The smart machine era will be the most disruptive in the history of IT.

7. Cloud computing- The convergence of cloud and mobile computing will continue to promote the growth of centrally coordinated applications that can be delivered to any device. In the near term, the focus for cloud/client will be on synchronizing content and application state across multiple devices and addressing application portability across devices. In the future, games and enterprise applications alike will use multiple screens and exploit wearables and other devices to deliver an enhanced experience.

8. Software-defined applications and infrastructure- Software-defined networking, storage, data centers and security are maturing. Cloud services are software-configurable through API calls, and applications, too, increasingly have rich APIs to access their function and content programmatically. To deal with the rapidly changing demands of digital business and scale systems up ? or down ? rapidly, computing has to move away from static to dynamic models.

9. Web-scale IT- Web-scale IT is a pattern of global-class computing that delivers the capabilities of large cloud service providers within an enterprise IT setting. The first step toward the Web-scale IT future for many organizations should be DevOps bringing development and operations together in a coordinated way to drive rapid, continuous incremental development of applications and services.

10. Risk-based security and self-protection- Organizations will increasingly recognize that it is not possible to provide a 100% secured environment. Security-aware application design, dynamic and static application security testing, and runtime application self-protection combined with active context-aware and adaptive access controls are all needed in today's dangerous digital world. This will lead to new models of building security directly into applications. Perimeters and firewalls are no longer enough; every app needs to be self-aware and self-protecting.

Tech News

Microsoft Band Is a Welcome Surprise in the Wearable Market

Microsoft's Band contains a display that shows text messages from a cellphone, Facebook alerts and even bar codes that allow people to pay for coffee at a Starbucks from their wrists.

Microsoft surprised the tech world by introducing a new fitness tracking wristband, along with an app and cloud-computing technology for tracking health and fitness data.

The bigger surprise is that the new Microsoft Band is pretty good.

The $199 band is, in some ways, a proof of

concept for Microsoft, which intends for its Microsoft Health platform to be integrated with other wearables, like Jawbone, and even data gathered from devices like iPhones or Samsung Android devices.

But compared to some of the competition, the Microsoft Band is a full-featured device that might be the most flexible wearable device on the market.

It combines useful smartphone notifications for incoming calls, text messages, emails and calendar items with fitness tracking that includes constant heart-rate monitoring. That feature is still rare even in fitness bands.

It tracks steps, estimates calorie use during activities at the gym, and has a built-in GPS so it can track your running or cycling route without your having to have your phone with you. It tracks your movements during sleep, and there is even a Starbucks app: You can load up a Starbucks card and make payments with the band. Battery life is also very good, especially compared with smartwatches like the Moto 360 or even the fitness-oriented Samsung Gear Fit.

It can do all that with an iPhone, Android phone or, naturally, a Windows Phone.

HP Unveils 3D Printing With Multi Jet Fusion Technology

HP announced HP Multi Jet Fusion, a revolutionary technology engineered to resolve critical gaps in the combination of speed, quality and cost, and deliver on the potential of 3D printing.

Multi Jet Fusion is built on HP Thermal Inkjet technology and features a unique synchronous architecture that significantly improves the commercial viability of 3D printing and has the potential to change the way we think about manufacturing.

10-Times Faster- Images entire surface areas versus one point at a time to achieve break-through functional build speeds that are at least 10 times faster than the fastest technology in market today.

New Levels of Quality, Strength and Durability- Proprietary multi-agent printing process utilizing HP Thermal Inkjet arrays that simultaneously apply multiple liquid agents to produce best-in-class quality that combines greater accuracy, resiliency and uniform part strength in all three axis directions.

Accuracy and Detail- Capable of delivering fully functional parts with more accuracy, finer details and smooth surfaces, and able to manipulate part and material properties, including form, texture, friction, strength, elasticity, electrical, thermal properties and more — beyond other 3D print processes.

Achieves Break-through Economics- Unifies and integrates various steps of the 3D print process to reduce running time, cost, energy consumption and waste to significantly improve 3D printing economics.

HP is planning to bring this printer to marker in 2016.

EMC Acquires Cloudscaling, Maginatics, And Spanning

These acquisitions will further extend EMC's reach and capabilities in cloud technology as each company acquired brings its own expertise.

The acquisition brings three distinct strengths to EMC's cloud capabilities: the ability to offer customers OpenStack-powered hybrid cloud solutions, cloud choice with data mobility across multiple clouds, and new protection capabilities for "born in the cloud" applications and data.

The key technologies gained from each company include:

Cloudscaling - a leading provider of OpenStack-powered Infrastructure as a Service, Cloudscaling also provided an operating system that managed compute, storage, and network in the cloud, Open Cloud System. The acquisition of Cloudscaling gives customers more options for running their private and hybrid clouds.

Maginatics - a cloud technology provider offering a highly consistent global namespace accessible from any device or location, unlocking enterprise hybrid cloud choice and flexibility through interfaces into a variety of private and public clouds. With the acquisition of Maginatics, EMC expects to integrate the newly acquired technology with existing data protection software, storage and services. This integration will extends EMC's cloud data protection strategy by enabling unified data protection and management across disparate private, public and hybrid clouds and facilitate efficient data mobility across multiple clouds with data deduplication, WAN optimization, handling of large objects and multi-threading.

Spanning - a leading provider of subscription-based backup and recovery for "born-in-the-cloud" applications and data, prevent business interruption due to data loss in Google Apps, Salesforce.com, and soon Microsoft Office 365. The acquisition of Spanning helps users confidently deploy data protection solutions across all applications and workloads, regardless of where the data is created or where the applications reside through a combination of Spanning's services and EMC's data protection portfolio.

Tech News

IBM to put supercomputing to work in Ebola outbreak

IBM officials confirmed that the company will be applying its analytics and engagement technologies in West Africa to join the battle against Ebola there.

Combining expertise from IBM's global network of research labs with its experience in humanitarian disaster response, the computing giant will apply mobile technology, data analytics and cloud computing to help governments and relief agencies contain the deadly virus.

The technology will be in play in Sierra Leone, enabling communities affected by Ebola to communicate their issues and concerns directly to the government. Also, a donation of IBM Connections technology in Nigeria is aimed at strengthening the Lagos State government's preparedness for future disease outbreaks. The effort also includes a platform for sharing Ebola-related open data.

IBM's new Africa research lab, in collaboration with Sierra Leone's Open Government Initiative, has developed a system that enables citizens to report Ebola-related issues and concerns via texts or voice calls. It provides insight to the government about the day-to-day experiences of communities directly affected by Ebola to help improve its strategy for containing the disease. Tapping supercomputing and analytics capabilities via the cloud, the system is able to rapidly identify correlations and highlight emerging issues across the entire data set of messages. Because the SMS and voice data are location specific, IBM is able to create opinion-based heat-maps which correlate public sentiment to location information. For example, it has already brought to light specific regions with growing numbers of suspected Ebola cases that require urgent supplies such as soap and electricity, as well as faster response times for body collection and burials. The system has also highlighted issues with the diagnosis of Ebola empowering the government to approach the international community to request more testing facilities and equipment.

IBM's Connections technology has a proven track record in humanitarian disaster response situations. It provides health workers and administrators with a reliable and secure digital platform to work together virtually and in person, enabling them to securely share documents, identify experts, exchange video, chat and audio messages, provide updates, tap into information via mobile devices and hold virtual meetings. Storing information securely and conveniently in the digital cloud means that vital information can be accessed by authorized users anywhere. IBM is broadly offering access to its IBM Connections cloud-based platform to all government agencies and non-governmental organizations working to stem the spread of Ebola.

Globally, IBM volunteers are leading a community effort to help identify, inventory and classify all open data sources related to the Ebola outbreak and are calling on organizations worldwide to contribute data. The goal is to create a cloud-based Ebola open data repository that will provide governments, aid agencies and researchers with free and open access to valuable open data related to Ebola.

Special Focus

AirWatch named a leader in IDC MarketScape for Enterprise Mobility Management

AirWatch by VMware has been named a leader in IDC's inaugural assessment of enterprise mobility management software vendors. The new report, "IDC MarketScape: Worldwide Enterprise Mobility Management Software 2014 Vendor Assessment," highlights enterprises' need for a comprehensive EMM platform that provides not only device management, but also app-level management and the security required to meet government and compliance mandates, all while providing a consumer-like end-user experience.

"As mobile becomes more and more intrinsically woven into the fabric of the IT infrastructure and desktop and mobile OS alignment continues, the idea that today's mobile architecture could serve as the new paradigm for managing and securing all endpoints becomes more salient," wrote report author Stacy Crook, who is research director for IDC's Enterprise Mobility research practice. "The value of being a leader in this space is the opportunity to help customers reduce the risk often associated with embracing innovative technology such as mobile and cloud."

The report also highlighted the breadth of devices that can be managed with AirWatch, including rugged devices and BYOD. The AirWatch EMM platform enables unified management of all devices, regardless of form factor, starting the day new devices and operating systems are released.

The research and development team at AirWatch is 600 employees strong, which enables AirWatch to offer instant support for new devices and operating system updates. The report also highlighted the real-time data analytics and reporting tools that allow IT administrators to analyze AirWatch-managed device and app use across an organization and generate reports in real time.

Additionally, IDC highlighted AirWatch Mobile Application Management software, which enables the use of volume purchase programs from public app stores, app licensing and lifecycle management, as well as the ability to add security and management to public or internal apps with AirWatch App Wrapping or the AirWatch Software Development Kit.

Last month, after research closed for the report, AirWatch launched AirWatch AppShield to ensure apps built with common enterprise tools would automatically include AirWatch security features and management capabilities. The IDC MarketScape also highlighted AirWatch's enterprise file sync and share solution AirWatch Secure Content Locker, which "enables flexible and secure content storage and sharing in a cloud, on-premise or hybrid environment."

About Galaxy

- One of the most respected Information Technology integrator of the best of breed products and solutions for Enterprise Computing, Storage, Networking, Security, Automation, Application Delivery, ERP and Business Intelligence.
- An ISO 9001:2008 organization , founded in 1987
- Committed team of over 200 skilled professionals
- PAN India presence
- Trusted IT services provider to more than a 1000 companies
- Experienced consultants certified on a wide spectrum of technologies
- The Galaxy Technology Innovation Centre, a state-of-the-art integrated hardware and software laboratory, allows customers a hands-on look at the latest storage, backup, security, application delivery and virtualization technologies.
- Customer list includes many of India's leading corporations, banks and government agencies
- Four business units collaborate to provide a full spectrum of services and ensure smooth projects. Together, they provide our customers with truly end to end professional IT Services.

Galaxy Business Solutions System integrators of best of breed technologies to deliver solutions to the problems and challenges that confront enterprises	**Galaxy Technology Services** Skilled pool of resources consistently maintains and delivers enterprise class service levels
Galaxy Network Solutions One of India's most trusted active and passive networking specialists	**Galaxy BI Consulting Services** Helps organizations to deliver and leverage business intelligence to create substantial business impact

VISION

"*To become the most preferred technology solution partner by listening to our customers, anticipating their needs and providing reliability, flexibility, responsiveness and innovative products and services. Achieving market leadership and operating excellence in every segment of our company.*"

MISSION

"*Total customer satisfaction; through innovative insights, quality service and excellence in technology deployment.*"

VALUE PROPOSITION

"*We understand the need of a common vendor for all your IT needs. Hence, we are committed to long-term partnerships by delivering on our commitments.*"

MD Speaks

"*Last month we saw a lot of action in the India e-tailer space. Almost all the big players were accused of crashing websites, unfulfilled promises, trumped up prices, late deliveries, selling merchandise at lower than cost prices and even murder and manslaughter. Well, I'm kidding about the murder and manslaughter bit, but the way in which accusations were running thick on all types of media even that would have sounded like fair game.*

What is the reason for such widespread accusations when it appears as if the largest number of people benefitted by buying stuff at huge discounts? Let's start with the crashing websites......just as one clicked the button to buy and expensive TV set at 80% discount, the website crashes and when it gets back on the discount has been reduced to 60%. Definitely cause for complain. Some others were not able to lay their hands on the limited offers, well because they were limited offers and got over before they logged in! Late deliveries because of the massive quantum of orders - I really cannot imagine that the e-tailers did not expect that. Some large fashion brands and electronic giants crying foul because their 'brands' were devalued because of excessive discounting. Well, well, well...except for the crashing website and unclear delivery communication, the rest seem to be angst against market disruption. And that is exactly what the e-tailers have managed to do. One can only expect the brick and mortar retailers to come up with innovative solutions to attract the consumers back to them. This is going to be a really interesting battle which I will be monitoring very closely. As the old saying goes...'Money can't last forever'."