



# TechTalk

## Issue 45

### March 2016

## Tech Companies Rally to Apple's Side in Encryption Debate

Apple's row with the US Justice Department regarding smartphone encryption, unlocking and back-doors continues, and now a number of high profile companies in the technology industry are planning to file a joint motion in support of Apple. According to people familiar with the matter, Alphabet Inc, Facebook, and Microsoft are among the names on the list.

At least one other major tech company is expected to join the filing, with Twitter's name being suggested as a possible candidate. Although the official wording is yet to be announced, the joint motion is expected to generally support the idea that unlocking smartphones, even those owned by alleged terrorists, would undermine industry efforts to protect users' digital information. This won't be the first time that key industry players have come out on Apple's side of the argument, but a combined and very public united front involving a number of household Silicon Valley names will certainly up the ante. Microsoft President and Chief Legal Officer Brad Smith told Congress on Thursday that his company would file a motion supporting Apple. Google CEO Sundar Pichai took to twitter last week to voice his concerns, stating that law enforcement plans would set a "troubling precedent," and Facebook's Mike Zuckerberg has also offered similar sentiments about security back-doors not being an "effective way to increase security."

This news comes after Apple filed a motion asking U.S. Magistrate Judge Sheri Pym to effectively reverse her order demanding that the company said investigators in bypassing security pass-codes on the iPhone belonging to Syed Rizwan Farook, who was involved in December's San Bernardino shooting. The company argued that the order was "unprecedented" and that it had no support within the law.

Apple, along with others in the industry, argue that it should be up to the Congress to make a ruling around the issue of encryption and digital security, rather than courts and the FBI taking matters, and effectively the law, into their own hands. The debate has polarized opinions across the country and around the world. Clearly, there is still a way to go before a resolution is found.

## Microsoft acquires Xamarin, a leading platform provider for mobile app development



Microsoft recently announced that they have acquired Xamarin, a leading platform provider for mobile app development. Xamarin has more than 15,000 customers in 120 countries and more than 1.3 million unique developers are using their technology. This is a great news for developers and Microsoft. Along with Visual Studio, Xamarin provides a rich mobile development offering that enables developers to build mobile apps using C# and deliver fully native mobile app experiences to all major devices – including iOS, Android, and Windows. Apart from their platform, through Xamarin Test Cloud, all types of mobile developers—C#, Objective-C, Java and hybrid app builders—can also test and improve the quality of apps using thousands of cloud-hosted phones and devices.

Xamarin's approach enables developers to take advantage of the productivity and power of .NET to build mobile apps, and to use C# to write to the full set of native APIs and mobile capabilities provided by each device platform. This enables developers to easily share common app code across their iOS, Android and Windows apps while still delivering fully native experiences for each of the platforms. Xamarin's unique solution has fueled amazing growth for more than four years.

### IN THIS ISSUE

**Future is now** 2

*Wireless Charging Loses the Pad, Gains a Three- Dimensional Bubble*

*Eternal 5D Data Storage Could Record the History of Humankind*

**Technology Focus** 3

*Why is All-Flash Adoption Growing So Fast?*

**Tech News** 4 & 5

*Lenovo Launches New Travel Ready Windows 10 Devices*

*5 Game-Changing Ideas of Vishal Sikka*

*IBM-VMware to Help Cos Realize Hybrid Cloud Potential*

**Special Focus** 5

*EMC and VMware Launch Hyper-Converged VxRail Appliance*

# The Future is Now

## Wireless Charging Loses the Pad, Gains a Three-Dimensional Bubble



Wireless charging is becoming commonplace with many smartphones coming with the technology built-in and some businesses offering compatible charging pads. However, all existing systems still require you to place the phone on the pad in a certain way so the coils can line up. A team of researchers at Korea Advanced Institute of Science and Technology (KAIST) have developed a prototype for a wireless charging system that works at distances up to half a meter and in any orientation.

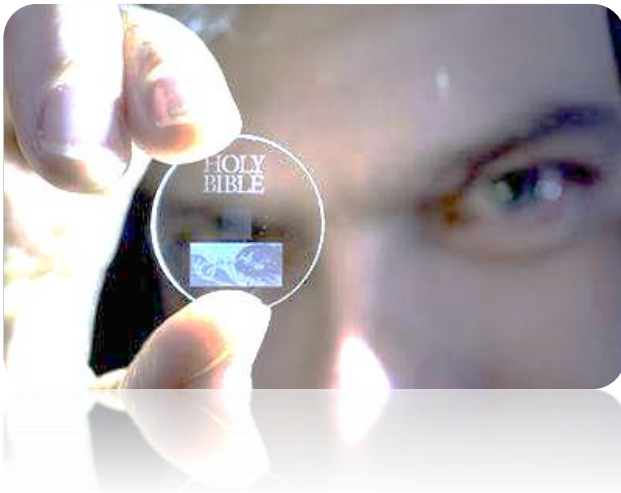
KAIST researchers report the "Wi-Power" system is safe for use around humans and offers numerous benefits compared to traditional wireless charging. The transmitting coil can send power to multiple devices at the same time, and it doesn't matter if the receiving coils are pointed at the charger. You could conceivably have a phone in your pocket that just starts charging when you get near the pad.

The researchers compare this system to WiFi in that it doesn't matter what orientation the device is in as long as it's within the Wi-Power zone. This wireless power transmission system uses a dipole coil resonance system to induce magnetic fields to "move" power from the transmitter pad to the device.

This system is based on the technology developed at KAIST in 2014 to transmit more significant amounts of energy over even longer distances. That "WiFi for power" proof of concept was able to transmit as much as 1403 watts at three meters. As you get farther away, the peak power decreases until you reach five meters, where the maximum output is 209 watts. So, it's probably much the same with this scaled down version of dipole coil resonance — it's more efficient the closer you are. The peak power of Wi-Power is 30 watts, so there should still be enough capacity around half a meter to keep a phone charged (about 1 watt).

KAIST has formed a spin-off company called TESLAS Inc. to commercialize the technology. The first step will probably be to produce cases for popular phone models that enable charging. After that, you'd want to get the technology built-into phones. That's the only way it'll ever become mainstream.

## Eternal 5D Data Storage Could Record the History of Humankind



Scientists at the University of Southampton have made a major step forward in the development of digital data storage that is capable of surviving for billions of years. Using nanostructured glass, scientists from the University's Optoelectronics Research Centre (ORC) have developed the recording and retrieval processes of five dimensional (5D) digital data by femtosecond laser writing.

The storage allows unprecedented properties including 360 TB/disc data capacity, thermal stability up to 1,000°C and virtually unlimited lifetime at room temperature (13.8 billion years at 190°C) opening a new era of eternal data archiving. As a very stable and safe form of portable memory, the technology could be highly useful for organizations with big archives, such as national archives, museums and libraries, to preserve their information and records.

The technology was first experimentally demonstrated in 2013 when a 300 kb digital copy of a text file was successfully recorded in 5D.

Now, major documents from human history such as Universal Declaration of Human Rights (UDHR), Newton's Opticks, Magna Carta and Kings James Bible, have been saved as digital copies that could survive the human race. A copy of the UDHR

encoded to 5D data storage was recently presented to UNESCO by the ORC at the International Year of Light (IYL) closing ceremony in Mexico.

The documents were recorded using ultrafast laser, producing extremely short and intense pulses of light. The file is written in three layers of nanostructured dots separated by five micrometers (one millionth of a meter).

The self-assembled nanostructures change the way light travels through glass, modifying polarization of light that can then be read by combination of optical microscope and a polarizer, similar to that found in Polaroid sunglasses.

Coined as the 'Superman memory crystal', as the glass memory has been compared to the "memory crystals" used in the Superman films, the data is recorded via self-assembled nanostructures created in fused quartz. The information encoding is realized in five dimensions: the size and orientation in addition to the three dimensional position of these nanostructures.

Professor Peter Kazansky, from the ORC, says: "It is thrilling to think that we have created the technology to preserve documents and information and store it in space for future generations. This technology can secure the last evidence of our civilization: all we've learnt will not be forgotten."

The team are now looking for industry partners to further develop and commercialize this ground-breaking new technology.

# Technology Focus

## Why Is All-Flash Adoption Growing So Fast?

Flash storage has become the perennial odds-on favorite for IT professionals looking to solve storage performance problems, and there are plenty of flash implementation options available to them. These options include installing flash in servers, mixing flash with hard drives in a shared storage array or all-flash array (AFA). Of these, AFAs seem to be resonating the most with initial adopters. This early lead by AFAs is something that appears counterintuitive given that the hard disk and hybrid alternatives should be less expensive. Another alternative, converged infrastructure, claims to not require a dedicated storage network and hybrid arrays use hard drives. When the challenges that alternatives create are considered, AFAs have earned their popularity by providing a more consistent level of high performance along with easier design and ongoing management.

### *The Server-Side Flash Challenge*

Server-side flash started exclusively as a point solution. An organization facing a performance problem installed a flash board into the server and either through caching software or simply by copying the entire application to it, alleviated the organization's performance issue. When used for just a few servers, server-side flash was a cost-effective method to address an immediate problem but at scale, it became expensive and challenging to manage. Server-side flash was the natural starting point for a flash journey that would typically end with one of the shared flash options.

The server-side flash journey has been interrupted lately by flash-based hyper-converged architectures. These hypervisor-based designs work by aggregating flash installed on the physical hosts to create a virtual flash pool. The benefit is the architectures still can leverage cost-effective server flash and eliminate the need for a dedicated storage network.

There are multiple problems with this approach, beginning with ensuring predictable performance. "Shared everything" infrastructure makes it difficult to deliver that consistency. A spike in application use can cause the allocation of CPU and memory to be out of balance and unavailable to the hyper-converged storage software, directly impacting performance.

Hyper-converged has a role to play. In small data centers the likelihood of a "run" on performance to the degree that it would impact the hyper-converged storage software is rare. In larger enterprises, hyper-convergence will end up converging the data center down to two layers—a compute tier and a storage tier—since it is very rare for these two resources to grow in lockstep.

### *Hybrid Challenges*

Hybrid storage mixes hard disk drives and flash drives into a single chassis. Most of these systems provide intelligence that moves data between the flash and hard drive tiers. The primary challenge with hybrid, again, relates to performance predictability.

Hybrid systems attempt to balance performance and costs by leveraging hard disks in conjunction with flash. The hope is that the majority of data access will come from the flash tier, hiding slow hard disk performance. The problem is that the performance delta between these two forms of storage is substantial. If there is a tier miss, the gap in performance between the two tiers often is noticeable to users and may lead to complaints.

Some hybrid vendors have tried to address the predictable performance problem by selling extra flash capacity and by offering volume pinning capabilities with their systems. Additional flash capacity reduces the cost advantage of hybrid arrays. Pinning capabilities may reduce the predictability problem, but they also increase flash capacity consumption and require additional administration time, as storage planners fine tune workload placement.

### *The All-Flash Panacea*

AFAs are a performance panacea. An AFA provides a significant performance boost to the data center, helping administrators address performance limitations on even the most demanding applications. By leveraging features like compression and deduplication AFAs make the consolidation of workloads economically comparable to HDD based solutions. AFAs also are popular because they eliminate performance tuning specifically and general storage management as a whole. Every storage administrator can tell war stories of hours and even days spent troubleshooting and fine-tuning storage performance. AFAs effectively eliminate storage tuning and return untold hours to the storage administrator's day. It is enticing administrators to move additional workloads to an AFA.

### *The Importance of the All-Flash Package*

The potential role of an AFA to consolidate all production data onto a single device means it needs to meet a high set of standards. Flash media is the common denominator, but the storage software and hardware that surround it are critical to meeting these high standards. As mentioned earlier, scale-up AFAs are typically purchased to address a specific performance problem but as workloads are added to the array the limitations of this initial purchase become obvious. Scale-out architectures offer some relief to the problem of mixing workloads, but should be combined with intelligent provisioning of the various resources within the architecture to maximize the AFA approach.

### *Conclusion*

Of the available options for implementing flash, AFAs seem to be the favorite of IT professionals. Consistently, the reason given is the simplicity they provide by eliminating performance concerns and the associated tuning that those concerns cause. But it is important that IT professionals look for the complete all-flash package that is both scalable and intelligent in the provisioning of performance so that it meets today's demands while enabling the next-generation enterprise.

**Please call Galaxy's Storage Consultants to help you reduce the Burden of Data Management.**

# Tech News

## Lenovo Launches New Travel-Ready Windows 10 Devices



The recent Mobile World Congress has been seeing several products launched from the manufacturers across the globe. For those who are unaware about Mobile World Congress, it is a conference and exhibition that features prominent executives representing mobile operators, device manufacturers, technology providers, vendors and content owners from across the world. One of the most significant launches in this year's Mobile World Congress is the Lenovo Windows 10 laptops. These 'travel-ready' laptops are a great innovation towards combining mobility with traditional computing. Here are three Lenovo Windows 10 laptops that were unveiled in this year's Mobile World Congress. Microsoft and Lenovo together launched latest Windows 10 devices from Lenovo. These three devices include 2 PCs, namely YOGA 710 and YOGA 510 PCs, and a detachable tablet, ideapad MIIX 310. Mobility is the common factor between these three Lenovo Windows 10 laptops.

On this occasion, Johnson Jia, senior vice president, PC Business Group, Lenovo said, "Technology advancements inspire us to live more vibrant and active lifestyles. Today people get connected wherever and whenever they want across devices. That's why we've infused the YOGA 710 and 510 convertible laptops and ideapad MIIX 310 detachable tablet with the features needed to meet the most mobile users' demands for productivity, entertainment and design by giving you PC productivity."

## 5 Game-Changing Ideas of Vishal Sikka



Infosys has extended Vishal Sikka's tenure by two years, till 2021, and also significantly enhanced his compensation. The recent move signals strong support for the chief executive under whom Infosys has staged a dramatic turnaround after a lackluster growth. Sikka is reportedly getting a total compensation of \$11 million annually as against \$7.08 million. Sikka, who took over the reins of Infosys in August 2014, was to head the company till June 13, 2019. According to the new agreement, which comes into effect from April 1, Sikka will remain CEO till March 31, 2021.

As Sikka is striving to make Infosys the IT bellwether again, we point out some of his game changing ideas that has instilled confidence among stakeholders – employees, customers and investors – and helped in steering the company in the right direction.

**1. A change in the work culture:** Sikka brought some changes to the rule book to enhance office work culture in order to make the company look like a new-age, youthful, firm, very different from the traditional Indian IT majors. One obvious thing he did was getting rid of formal dresses, the Infosys CEO told employees that they could stop wearing ties and wear jeans and t-shirts at work. The idea is to make them comfortable in the office. The company has also extended maternity leave and institutionalized family events, including carnivals for employees' children. The other area was improving employee engagement, making employees a part of the company's decision-making process. Sikka started a trend to interact frequently with his employees via blogs, town halls, InfyRadio, and InfyTV, bridging communication gaps, unlike before.

**2. Automation to increase revenue:** For a company like Infosys, which boasted of being very much people-centric, Sikka proved that automation can make work simpler and more profitable. He has shown that Infosys can adopt the new employee system, 'next technologies' and business model and do it faster than the rest of the industry. Higher revenue contribution from new automation services such as design thinking, artificial intelligence and intellectual property, Sikka is constantly making use of these technologies to make existing service lines more efficient, increase the proportion of revenue coming from so-called next-generation services, and increase overall revenue productivity.

**3. New Strategy - 'New and renew':** The new strategy, the so-called 'renew and new', had the company focusing on re-engineering the existing business while also devoting resources for new kinds of future businesses, which would mean products, platforms and solutions. In effect turn Infosys into a customer-centric organization. In addition to overhauling the sales engine of Infosys, Sikka has brought changes to its delivery structure. Abandoning the 3.0 strategy has been one of the most sensible goals, note experts who believe it is time to look out for newer areas of growth, new markets, and technologies, to keep up with the momentum.

**4. Making the company future ready:** Sikka altered the existing business model and make the company future-ready. Sikka has been exploring advanced technologies like automation, robotics and artificial intelligence and believes these will be key drivers of change in the future. The acquisition route, which was more conservative in the past, is now becoming a strategy for Infosys to steer itself. Since 2012, the software leader has made acquisitions worth over \$200 million, mostly in start-ups. In an interview with CNBC-TV18, CFO Rajiv Bansal stressed upon the fact that the company was keenly focused on the realigning its business, automation, more acquisitions and more prudent use of its vast cash reserves.

**5. Making the effects visible:** After a lackluster growth in some of its earlier quarters, IT major Infosys has finally surprised analysts with a better-than-expected earnings numbers in the last quarter. Vishal Sikka emphasized on its Aikido initiative (focus on design thinking, platforms and knowledge-based IT) launched in August 2015.

In the words of Sikka, "We continue to see growing adoption of our Aikido services, bringing the power of intelligent systems, automation and software to amplify the skills and imaginations of our people. This combination helped us deliver encouraging results despite the traditional seasonality of the quarter and the additional headwinds, and will strengthen the execution of our strategy towards consistent profitable growth."



# Tech News

## IBM-VMWare to Help Cos Realize Hybrid Cloud Potential



The two global tech giants, IBM and VMware, join hands to help enterprises accelerate hybrid cloud adoption. The new agreement will enable enterprise customers to easily extend their existing workloads, as they are, from their on-premises software-defined data center to the cloud. With nearly all the Fortune 100 customers utilizing VMware technologies, enterprises will be able to leverage VMware's technologies with IBM's growing footprint of 45 cloud data centers globally, helping companies scale globally while avoiding retooling expenses, development risks and reducing security concerns. For this, IBM and VMware have jointly designed an architecture and cloud offering that will enable customers to automatically provision pre-configured VMware SDDC environments, consisting of VMware vSphere, NSX and Virtual SAN on the IBM Cloud. With this SDDC environment in place, customers will be able to deploy workloads in this hybrid cloud environment without modification due to common security and networking models based on VMware. IBM will utilize its

extensive Cloud Builder tools and workload automation capabilities to automatically provision pre-configured or custom workloads to the cloud validated by VMware's design patterns for Software Defined Data Center architectures. In addition, VMware has extended vRealize Automation and vCenter management tools to deploy and manage environments on the IBM Cloud as if they are part of a customer's local data center. The two companies also will jointly market, and sell new offerings for hybrid cloud deployments, including seamless workload migrations, disaster recovery, and capacity expansion and data center consolidation.

"This partnership, an extension of our 14-year plus relationship with IBM, demonstrates a shared vision that will help enterprise customers more quickly and easily embrace the hybrid cloud," said Pat Gelsinger, chief executive officer, VMware. "Our customers will be able to efficiently and securely deploy their proven software-defined solutions with sophisticated workload automation to take advantage of the flexibility and cost effectiveness of IBM Cloud."

"We are reaching a tipping point for cloud as the platform on which the vast majority of business will happen," said Robert LeBlanc, senior vice president, IBM Cloud. "The strategic partnership between IBM and VMware will enable clients to easily embrace the cloud while preserving their existing investments and creating new business opportunities." According to a statement, IBM and VMware will provide the expertise, solutions, and cloud infrastructure to help customers manage, and scale their IT resources running in private and public clouds, utilizing the tools, processes and APIs that customers are already familiar with.

Through sophisticated workload automation clients will have the ability to quickly provision new, or scale existing workloads to the IBM Cloud. VMware customers will be able to use a flexible monthly-based consumption pricing model that makes it more cost effective for users by enabling a simple pay-as-you-go option, the companies informed.

## Special Focus

### EMC and VMware Launch Hyper-Converged VxRail Appliance



Storage vendor EMC and virtualiser VMware have jointly launched a family of hyper-converged infrastructure appliances (HCIA) for VMware environments. The plug and play gadgets are meant to simplify infrastructure management in departments experiencing high growth.

The VxRail appliance family combines EMC's data services and systems management with VMware's software such as vSphere and Virtual SAN. The intention is to create software defined storage natively integrated with vSphere in a single product family with one point of support. The all-flash VxRail appliances could simplify VMware customer environments and boost performance and capacity in a simple plug and play operation, the vendors claim.

The appliances were jointly engineered to integrate virtualization, computing, storage and data protection in one system with a single point of support, say the vendors. Since they can be aggregated at great scale, the estate of appliances can grow from supporting two virtual machines (VMs) to thousands of VMs on a 'pay-as-you-grow' basis.

Starting prices for small and medium businesses and remote offices are around \$60,000, with options for performance intensive workloads to be catered for with up to have 76 TB of flash. The appliances will run EMC's data services including replication, backup and cloud tiering at no additional charge. In addition RecoverPoint for Virtual Machines, Virtual SAN, vSphere Data Protection and EMC Data Domain are all available.

Meanwhile VCE VxRail Manager will provide hardware awareness with timely notifications about the state of applications, VMs and events. VxRail Appliances can use EMC cloud tiering to extend to more than 20 public clouds such as VMware vCloud Air, Amazon Web Services, Microsoft Azure and Virstream. These can provide an additional 10TB of on-demand cloud storage per appliance.

"The new appliances put IT organizations on a path to eliminating complexity and collapsing cost structures," said Chad Sakac, President of the Converged Platforms division of EMC.

According to ESG research on hybrid cloud 70% of IT respondents plan to invest in HCI in the next 24 months. The new appliance family is due out on Q2 2016.

# 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.
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## NEWSLETTER COMPILED BY

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## VISION

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## VALUE PROPOSITION

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## MD Speaks

"Dear Readers,

As India gears up to becoming 'Digital' and 'Smart', I expected this year's union budget to provide a host of 'incentives' to support this objective. In that sense, I must admit that I am a bit disappointed. However, I understand that the yearly budget is not the only platform where such 'incentives' can be announced and I remain hopeful that this will happen sometime during the course of this year. 'Incentives' need not be and infect should not be in terms of subsidies or tax-breaks but rather in terms of creating an environment where companies providing or intending to provide such services can thrive and succeed. Uber and Ola have made the taxi industry smart and the ubiquitous black and yellow cabs have had to follow suit by providing an easy taxi hailing platform. The erstwhile taxi unions tried to resist by means of strikes, disruptions etc., but without any intervention by the Government, they had to finally offer competitive services. Digital wallets have made traditional banks go digital, private bus bookings have gone online, most private stores have a digital presence, and even utility bills and taxes can be paid online. The only laggards at least in a large city like Mumbai seem to be the city and government services. By making these services digital and smart, a large number of illegal touts and agents will be eliminated and the service experience can be drastically improved. I hope to hear some announcements on this front shortly.

Another welcome announcement will be in terms of cash incentives and tax breaks for clean and renewable energy sources that are truly 'Made in India' and not just assembled in India. Allocations to research in this field will surely yield great returns in the future. With the USA Government standing up for its manufacturers and refusing to share technology to have the same made in India, the Indian Government needs to reply in kind. And what better way than to push such technologies to be researched and made in India."