

TechTalk



Issue 67th, Jan 2018

Galaxy Participates in APAC Canals Channels Forum in Perth, Australia



Canals is a leading global technology market analyst firm with a distinct channel focus, and offers unique insights and intelligence to vendor community through superior analysis services, custom research, and innovative partner-oriented events. Such insightful interactions help companies like Galaxy align better with customer expectations, and keep improving their solutions and services for target stakeholders!

The APAC Canals Channels Forum was conducted in Perth, Australia from 5-7 Dec, 2017. It attracted over 1,000 leading channel partners, distributors and vendors from nearly 28 countries across the region. The event featured keynote sessions, more than 2,000 one-to-one meetings and a spectacular gala dinner. Galaxy was invited to participate at this esteemed event, and was represented by Sanjay Patodia [CEO], and Nishant Jalan [Director – Security & IoT].

On the sidelines of the Canals Channels Forum, Dell EMC had organized its APJ Partner Advisory Board [PAB] meeting in Perth. Our CEO, Sanjay Patodia, was invited to be a part of an exclusive PAB welcome dinner, followed by PAB meetings on the following day. Galaxy is an active member of Dell EMC Partner Program, and looks forward to participation in PAB sessions every year.

Galaxy takes that extra step to pro-actively network with all organizations relevant to our business, and stay abreast of latest trends, technologies and policies that can make an impact on our industry!

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M.D. Speaks



"Dear Reader,

On behalf of the entire Galaxy & TechTalk team, I wish all of you a very happy, safe and successful 2018!

Last year we saw the rapid rise and acceptance of cryptocurrencies. This year we should see the technology behind the cryptocurrencies finding its way into several business and industry applications. The Blockchain technology is revolutionary in terms of record keeping and can track and document every change in a record or transaction. Industries heavily reliant on contracts like BFSI, real estate and entertainment are expected to be the early adopters of this technology. Apart from these, Government departments can use this technology for managing personal data securely. I will not be surprised if 2018 sees a plethora of startups leveraging blockchain technology to create solutions for these industries. Another trend that I expect to see is the emergence of software robotics to perform repetitive tasks like data entry and validation.

Shifting topics, the news that one of the most respected companies was deliberately slowing down their older models so that customers would upgrade to their newer models has been extremely disturbing. The company soon came out with a clarification that this was to manage the ageing batteries and not to promote upgrades. However, the fact that this was hidden from the consumer gave rise to a lot of discontent. How this will affect the sales remains to be seen. However, I would expect some lawsuits and maybe even fines to be imposed, pretty much like what was done to the car manufacturers last year.

Happy Reading"

Sanjay Patodia

The Future is Now

The Future Technology: 3D Food



3D printing which is also known as additive manufacturing, turns digital 3D models into solid objects by building them up in layers. The technology was first invented in the 1980s, and since that time has been used for rapid prototyping (RP). However, in the last few years, 3D printing has evolved into a next-generation manufacturing technology that can allow the local, on-demand production of final products.

The 3D printing of food has been an evolving over recent years, and the uses of this application are expected to grow even more. It has enabled designers to combine their 3D digital design knowledge with food to produce shapes, textures, tastes and forms that were previously challenging to create by hand, all whilst still being edible. This method of manufacturing could also prove to be a healthy alternative that's also good for the environment. The global market for

3D printed food is anticipated to be driven by a need for mass customization, as 3D printing saves both time and waste. The actual nutrients themselves can even be customized, so consumers can benefit from tailor made food for their dietary requirements. Proteins from algae, beet leaves and insects can be converted into edible products. Even NASA is using this technology to look at ways to 3D print food in space.

Currently, it is said that all microwave pancakes in the Netherlands are 3D printed, and it seems possible that there could be a rise in the popularity in 3D food printing machines, much like microwave ovens rose to power years ago. However, this method of food creation also has its restraints. Many food ingredients used for 3D printing need to be turned into paste or melted, which is a limiting factor as there many foods which cannot be turned into a paste, or melted. 3D printing food has the potential to trump many current food customization techniques, though the manufacturing cost is high. 3-D printed food is perfect for elderly people. Since all food needs to come out of a printer nozzle, everything must be paste-based and soft. Plus, the ingredients can be tailored for any number of nutritional compositions, like moderating the protein or carbohydrate content in whatever you're printing. There's a fair number of companies getting involved with this new way of producing food. Some of the key players include Philips, Electrolux, Barilla, Nestle, NASA, Hershey's, Choc Edge, 3D Systems, ZMorph. Maybe in the future you could buy your own customized 3D printed chocolate bar just as easily as you can buy your favorite snack at the corner shop, or even create your own from your own machine at home! Now that's some food for thought!

Hyundai Moves on Robot Taxis to Catch Google

Hyundai is now developing vehicles and software systems for a planned driverless taxi service to compete with both its traditional rivals like Nissan Motor Co and General Motors Co, and tech companies such as Waymo, the unit of Google's parent Alphabet Inc., which has vowed to offer fully autonomous cars for public use soon.

Chi Young Cho, the chief innovation officer and executive vice president in charge of Hyundai's Strategy & Technology Division says mobility service is their top priority now and though they are late to the game, the opportunity has not been completely shut down. Chi's division will coordinate their activities, creating a blueprint to integrate everything from artificial intelligence to robotics to energy storage. Unlike its traditional go-it-alone strategy, this time the automaker has tie-up partnerships with Cisco Systems Inc. and Baidu Inc. for connected cars, and SK Telecom Co and Hanwha Asset Management Co to set up a \$45 million fund to invest in AI, smart mobility and fin-tech. As the industry shifts away from conventional gasoline-powered vehicles with drivers, software and vehicle-related applications are becoming key to the future for automakers. A senior analyst at Hyundai Koh Tae-bong thinks they may not be able to commercialize a self-driving shared mobility service before 2021. He believes that to start a robotaxi business overseas, it is essential for them to have strategic partnerships with ICT companies such as telecommunications, map and big data firms, and have testing periods before rolling self-driving taxis on the road. To hasten its efforts, Chi says Hyundai may buy companies around the \$50 million to \$100 million scale that could bring in more expertise. M&A looks good on the surface and may boost a firm's value in the short term, but he feels they are not at that stage yet, and still requires better learning of integration. Hyundai may buy one or two small companies this year, and should they work out well, it may try bigger-sized deals in 2019.



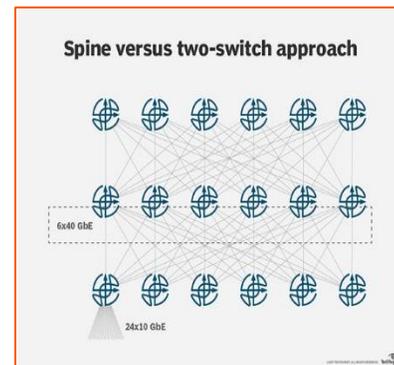
Catching Up will be difficult as GM expects to have a fleet of its self-driving cars ready for a ride-share service in 2019, while Nissan has said it will test an autonomous ride-hailing service on public roads in Japan as early as March. Waymo, which has racked up the most autonomous test miles on roads, has said it is "really close" to putting customers in its vehicles. Meanwhile, Hyundai has also been battling declining sales in the US, where it lacks enough SUV models to benefit from a boom. In China, its biggest market, political tensions with South Korea sparked a consumer backlash, causing a plunge in sales last year. Many of these factors puts Chi and his team under pressure to succeed quickly. He hence believes that speed is crucial in every aspect and now asks his colleagues to report tasks everyday instead of once in a week.

Technology Focus

Mulling Network Device Types: Two Switches Better Than Many?

Recent studies reveal that using two large chassis switches instead of multiple ToR devices might be a good alternative for data center performance when deploying network device types. At a certain scale, it just makes sense to deploy a couple of large switches as a data center fabric. For instance, assume a fabric that requires 140 physical servers, each supporting a modest 10 virtual servers or containers -- and each requiring dual homed connections for resilience. These requirements might suggest 280 10 Gigabit Ethernet (GbE) ports, which is a port count many large chassis switches can easily support.

Deploying two data center switches provided by a single vendor seems, on the surface, a very simple option. The vendor's platform is going to provide a strong suite of vertically integrated services, such as Layer 2 overlays and link aggregation. There will only be two network device types to manage, as well. This means a smaller chance of having more than one version of code, or one set of command-line interface commands, to master. In fact, there is likely a network device at this scale that can be reduced to a GUI and a wizard -- a simple-to-automate, vendor-driven platform designed to be administered through the occasional visit from a consultant or vendor rep. What would it take to replicate this two-switch design using a spine-and-leaf fabric built out of 1 RU white boxes? If you assume each top of rack (ToR) can support 24x10 GbE ports down, and 6x40 GbE ports up, you are going to need 12 ToR switches in your fabric. The easiest spine configuration is going to be six of the same switches, each configured with 12x40 GbE ports, for a total of 72x40 GbE ports in the spine, as shown in adjoining diagram.



Software will need to be considered in addition to the hardware. The first question a designer is likely to ask is, which of these two options is going to be less expensive? For the sake of argument, assume both costs are about the same over a five- or 10-year period, so the issue of cost cannot be used as a real differentiator. Or, maybe the desire is for one throat to choke? This seems to be a primary draw for most companies; if something fails, the vendor, who -- in theory -- has a lot more resources, can both send the right people on site to fix the problem and take the blame. There is, of course, another name for one neck to choke: If the vendor fails to support you, your one neck to choke becomes a single point of failure. On what basis, then, can you decide which of these approaches is correct? Perhaps the best way to decide is to return to the basics. Note the specifications laid out above -- port count and speeds and feeds. These are the kinds of requirements engineers tend to be comfortable asking. What has not been asked is anything relating to the business. And that's one of the most important questions to answer. Here are some to consider:

What is the growth pattern for the business? If the business tends to have increasingly larger requirements, then buying two large chassis switches means buying two network device types large enough to handle the growth projected, against the projected life of the purchased equipment. The chassis must be able to support enough blade slots and traffic to handle the largest load anticipated before the equipment is aged out. The two-large-switch model is based on scaling the network up, which means increasing the capability of a small set of large devices over time to keep up with requirements. A spine-and-leaf design built out of a single kind of device, on the other hand, can be designed in a way that permits growth by scaling the network out. In the scale-out model, more components are added in parallel to increase capacity; the system is made larger, rather than the density or performance of the individual devices. A well-designed spine and leaf can be scaled up in a number of ways -- for instance, by increasing the speed of the fabric, by increasing the number of spine switches or by moving from a simple three-stage spine and leaf to a more complex five-stage using a Benes or butterfly topology. Scale-out models tend to support variable workloads at a lower cost, and higher efficiency, than scale-up models.

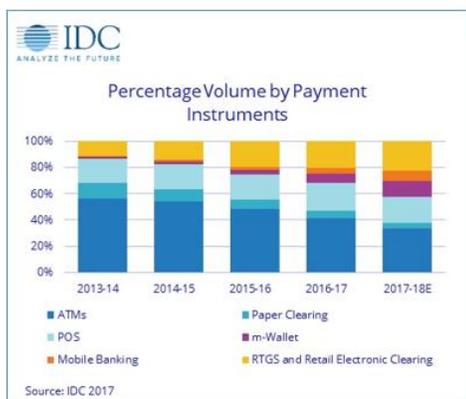
What is the replacement model for the system? No system is truly future-proof. Equipment and software eventually reaches end of life; vendors replace older, outdated architectures with new ones to offer new features. In the case of a two-network-device-types switch data center fabric, replacing the system means building a new fabric and moving the workload when the equipment reaches end of life, or taking a downtime hit to replace the two switches. If one device fails at some point close to the end-of-life cycle for the switches, the cost of replacing the failed switch with a new one of the same model, or replacing the entire system, must be weighed out and considered. A more disaggregated option, using a larger number of smaller devices, will require more ownership on the part of the business, but this also means the components of the network can be replaced over time through a natural cycle.

What features are required of the network? When the application is owned by the business, or the business is willing to push back on the application developer to make the interaction between the application and the network a two-way street, the network needs to support fewer features. In an environment where the network is focused on doing a smaller set of things very well, a more white-box-oriented approach is going to more easily meet short-term needs, while providing the flexibility for future network requirements. Remember: There is a direct tradeoff between feature requirements, complexity and flexibility; adding more features will always add more complexity and reduce longer-term flexibility. The bottom line is this: Whether the two-switch option will be the best idea for your data center fabric or not, is going to depend on a lot of different things -- the most important of which is understanding the business requirements to which you're designing. Either choice can be valid -- there is much more here to consider than how many hosts, servers and other network device types you need to connect to the fabric.

Galaxy Office Automation Pvt. Ltd. is a leading provider of state-of-the-art networking solutions to ensure smooth support to our customer IT teams, across a diverse set of industries.

Tech News

Digital Payments in India to Supersede Cash by 2022: IDC

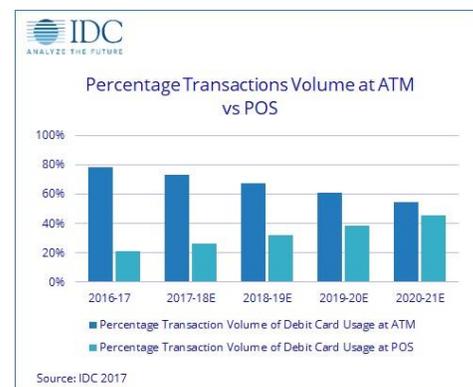


India has predominantly been a cash-obsessed nation. However, the scenario has been rapidly changing in the last one year, with demonetization, rise of digital currencies and increased use of mobile internet. The country now has the third-largest internet user base in the world with 300 million users. Out of which, nearly 50 percent of them are mobile-only internet users. Moreover, with next-generation payment structures, such as mobile wallets, payments banks, BharatQR, and electronic authentication, creating new forms of digital payment channels and servicing capabilities, digital payments in India is likely to supersede cash by 2022.

IDC Financial Insights highlights the key trends in the digital payment space and their impact on the payment industry, and shows the spectacular growth of noncash, digital payments in the once hard-to-crack market. Senior Research Manager, IDC Financial Insights, Anuj Agrawal stated that the payment industry in India is clearly going through gigantic changes. He says the tremendous growth in the digital payment space has elicited a passionate debate across the industry over the last few years. However, the next several years will certainly see a transformation of how consumers, businesses, and the government move money.

As was highlighted by an earlier IDC FutureScape report, by 2018, several markets worldwide will launch a nationwide mobile payment scheme for POS, ecommerce, and ATM transactions, the report discusses how India appears to be steadfast in this goal, taking major steps to be among the first few countries to launch a nationwide mobile payment scheme.

Usage of digital payment instruments has seen a tremendous improvement year over year versus traditional non-digital channels other than cash. The contribution of digital payment instruments such as retail electronic clearing, mWallet, and mobile banking means the volume of transactions has already doubled in 2016-17 and is expected to grow further by the end of FY17-18, from 32 percent in 2013-14 to 62 percent in 2017-18 (estimate) (see 1st Figure) Source: Reserve Bank of India(RBI) Payment Indicators, IDC Analysis. Further, according to the IDC Financial Insights estimates, the percentage of transactions at POS will supersede the transaction at ATM by 2022, both in terms of volume and value. (See 2nd figure). Source: Reserve Bank of India(RBI) payment indicators (2016-17); IDC analysis (2017-18E to 2021-22E).



Apple Will Replace Your Iphone Battery Even If It Passes a Test

The company is pulling out all the stops to make customers happy



When Apple revealed that it was secretly slowing down old iPhones as their batteries aged, some were understandably annoyed. When Apple announced it would replace those batteries for just \$29 each, some were still worried that their phones might not qualify for the fix. (The replacement cost has been lowered to £25 in the UK and AU\$39 in Australia). After all, Apple said the battery replacements would be available "for anyone with an iPhone 6 or later whose battery needs to be replaced," but the company didn't define what "needs to be replaced" actually means -- and Apple's previous policy was to test batteries first to see how much energy they can store, and replace them if they had less than 80 percent capacity.

But for Apple's \$29 battery replacement mea culpa, Apple has reportedly decided to waive those test results. According to a leaked memo obtained by iGeneration -- and independently confirmed by MacRumors with Apple itself -- the company is telling Apple Stores to offer the \$29 replacement batteries

even if a customer's phone passes the battery capacity test with flying colors. We've asked Apple if there are any other conditions we should know about. (Apple didn't immediately reply to a request for comment). Anecdotally, we can confirm that at least one Apple Store was willing to waive the test results. When CNET's Oliver Padilla went to ask for a battery replacement yesterday, they promised him one -- even though his phone passed the battery capacity test with a "green" result.

Galaxy's offers "smart" mobile devices and solutions to organizations with attractive after-sales support services, to enhance their workforce productivity, through connectivity and any-time access to critical data, while ensuring information security at device and network levels.

Tech News

Amazon shipped more than 5 billion items via Prime in 2017

Amazon says Prime members around the world used their digital benefits more in 2017 than ever before.



The company said it shipped more than 5 billion items via its Prime service in 2017. Prime, which costs \$99 a year or \$10.99 a month, provides members with free two-day shipping on eligible purchases in the US, as well as unlimited streaming of movies and TV shows with Prime Video, among other benefits. Newer paid members joined Prime this year than any other year, Amazon Prime Vice President Greg Greeley said in a statement, adding, "members used digital benefits like Prime Video, Prime Music and Prime Reading more than ever before."

Amazon said last week that it had its "biggest holiday season" this year, and that more than four million people started free trials of Prime or bought memberships in a single week. Amazon's own Fire TV Stick and Echo Dot topped list of best-selling products purchased by Prime members in the US.

Special Focus

VMware Talking with Microsoft on VMware Virtualization on Azure

FlexPod hardware is like Azure's bare metal SAP HANA large instances.



VMware isn't planning to work directly with Microsoft on the technical details of its emerging VMware virtualization on Azure solution, but the company has dropped some of its initially condemnatory language about it. Microsoft's VMware virtualization on Azure preview, announced back in November, is still available for testing, with general availability expected in "the coming months," according to an announcement last month by Microsoft.

Corey Sanders, director of Azure compute at Microsoft, explained in a December announcement that the preview, a bare-metal Microsoft Azure-hosted solution for running VMware virtual machines, will use FlexPod hardware with NetApp storage. FlexPod is a datacenter hardware stack validated by Cisco and NetApp that typically consists of Cisco Unified Computing System servers and Cisco Nexus switches, along with NetApp storage hardware, according to a NetApp description.

FlexPod was first introduced in November 2010 aimed at enterprises running private clouds. FlexPod hardware has been "tested and validated across leading hypervisors and operating systems from VMware, Red Hat, and Microsoft," according to Cisco's FlexPod overview document (PDF). Sanders further explained that the FlexPod hardware used by Microsoft's VMware virtualization on Azure preview "is similar to Azure's bare metal SAP HANA Large Instances solution that we launched last year" (in 2016). Microsoft and SAP certified HANA on Azure as part of a broad partnership effort announced back then.

Since the FlexPod implementation of the Microsoft VMware virtualization on Azure preview is described as a "bare-metal" deployment, it seems that Microsoft can deploy specific hardware in its Azure cloud datacenters on an ad hoc basis. However, the use of the Azure infrastructure specifically will facilitate application connections to various Azure services, according to Sanders' description. "With this approach, we will enable you to use the same industry-leading VMware software and services that you currently use in your on-premises datacenters, but running on Azure infrastructure, allowing L3 network connectivity for existing applications to Azure-native services like Azure Active Directory, Azure Cosmos DB, and Azure Functions," Sanders explained.

In the revised VMware announcement, Ajay Patel, senior vice president for product development at VMware Cloud Services confirmed that Microsoft's VMware virtualization on Azure solution was "being offered as a dedicated, server-hosted solution similar in approach to other VMware Cloud Provider Partners (VCP)" offerings, and it was using FlexPod hardware. He also reiterated that "this offering is being developed independent of VMware." The details being discussed between Microsoft and VMware don't appear to be technical details. It seems that VMware will not directly certify the VMware virtualization on Azure solution. Instead, that'll be left to VMware's partners. That approach differs from VMware's previous work with other public cloud service providers, such as Amazon Web Services (AWS) and IBM, where VMware had taken a hands-on approach to certifying its solutions. It was a point emphasized by Patel in the original November VMware comments.

The talks between Microsoft and VMware are still ongoing, but it's not exactly clear right now if a VMware partner-certified solution would be equal to a solution certified by VMware itself. We at Galaxy have relationships with multiple OEMs, and offer custom solutions to clients that best suit their requirements and operating constraints, and help them achieve their business objectives.



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- ✚ An ISO 9001:2008 organization, founded in 1987.
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- ✚ 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.



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