

TechTalk



Issue 55, January 2017

VMware and Galaxy Join Hands to Redefine Banking in Digital Era

The Indian banking and financial services segment is undergoing the inevitable changes introduced by digital transformation. Mobile device adoption, changing customer demographics, constant regulatory changes, increasing data breaches, and the need to create products rapidly are factors that are redefining the BFSI sector.

To help banks and financial institutions in addressing the changing scenario, Galaxy Office Automation, a leading IT Solutions provider, along with VMware, kick started its latest initiatives around 'Digital and Software-driven Enterprise', comprising industry events, and innovative solutions.

With VMware® Workspace™ ONE™ at the core, the initiatives are aimed at helping banks and financial institutions to gain operational efficiencies, while enabling them to secure data, stay compliant and reduce risk. The next-generation VMware Workspace ONE combines VMware Identity Manager and AirWatch Enterprise Mobility Management to deliver the widest variety of mobile, cloud and Windows apps to any device.

Its recently concluded Executive Foire on "Reimagine Banking with Digital Workspace", the first such initiative from Galaxy, focused on aspects such as customer experiences with mobile workflows, Business Continuity with High Availability of services and increasing security through policy based governance.

Entrenched in working closely with several BFSI customers, VMware has built product innovation architected on Industry Leading "Software Defined Data Centre", by enabling digital workspaces based on deeper industry-specific solutions for key enterprise vertical markets. With the powerful single sign-on (SSO) capabilities and built-in two-factor authentication, Workspace ONE helps increase security by minimizing risk factors.

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MD Speaks



"Dear Readers,

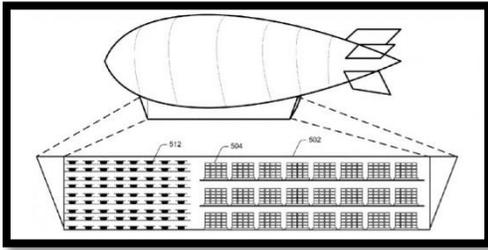
On behalf of the entire Galaxy & TechTalk team, I wish all of you a very happy and safe 2017. Last year we saw considerable growth in areas like mobility, analytics and security. I had hoped the penetration of IoT and Machine Learning would have been better, but I guess that will happen this year. We also saw the release of Pokemon Go which quickly became a global rage and has been the harbinger of a number of applications based on location-based and augmented reality technology. I believe that 2017 will see a lot more apps using bits and pieces of this technology to drive productivity. We also saw a lot of activity in the M&A space in the technology sector last year and this year promises to be no different. In India, with the Government's thrust towards taking everyone 'Digital', there will be tremendous opportunities in technologies like Mobility, Security & Cloud. The trick to success will lie in simplifying tasks while retaining security and mobility. We at Galaxy will be investing a lot of time and money to make sure that we are an integral part of this movement to take India Digital.

Happy Reading."

A.P. Khungat

The Future is Now

Amazon's Latest Idea is a Flying Warehouse That'll Deliver Your Stuff by Drone



Amazon is exploring the use of giant airships to serve as mobile, flying warehouses that could help the online retail giant deliver more of its goods by drone.

You might already be familiar with Amazon's drone delivery service, which recently received a demo in Britain for the first time. But the idea for a fleet of large airships, disclosed in filings to the U.S. Patent and Trademark Office, expand on those ambitions dramatically. Imagine you're at a baseball game and wanted to buy a meal or a jersey without ever leaving your seat. The system Amazon describes would allow you to place an order and receive the item within minutes. From its "airborne fulfillment centers" hovering near the stadium, Amazon would dispatch a drone with your purchase. The drone would float or glide most of the way, then turn on its

propellers and navigate itself to you directly.

While Amazon's existing goal with drone delivery is to get you your stuff within 30 minutes, airships could potentially reduce that time even further. Unlike Amazon's land-based warehouses, which by definition can't move around, airborne fulfillment centers could respond to surges in demand even before they occur, according to the patent filing.

Large gatherings of people for a specific event, such as a concert or a sports game, is one example Amazon highlights as a clear use-case. But Amazon also appears to believe that using airships could reduce the costs of drone delivery in general. In looking to airships, Amazon draws upon a long technological tradition dating back to the 19th century, when some of the world's first self-propelled dirigibles were created. (Amazon's patent was awarded in April, but news of the idea only spread recently after an analyst at CBInsights stumbled upon the filings.)

Sending drones out from a ground-based facility requires substantial energy, the filing says, because the drone must have its propellers spinning constantly to stay aloft. What's more, making a return trip to the warehouse with no payload onboard could be a wasteful expense. By contrast, Amazon said it believes that it could be more efficient to deploy drones from airships; the drones could float or glide most of the way down to earth by way of gravity, rather than using their own power. The airships would have to be resupplied periodically, of course. Amazon envisions still more airships — smaller ones — that could shuttle more drones, products and other things needed to keep the airships functioning up to the larger carrier.

There's no word on when such a system might debut; an Amazon spokesman didn't immediately respond to a request for comment. Some patents never even lead to actual products. But companies such as Facebook and Google have floated the use of airships and drones to beam Internet connectivity down to earth, so it was probably only a matter of time before Amazon began thinking about how to apply the same technology to its business.

Giant Robot Could Patrol Military Borders

A four metre (13 ft), 1.5-ton bipedal robot, designed and built by military scientists in South Korea, has taken its first steps.



As shown in the figure, "Method-2" can hold a pilot who sits inside the torso and controls its arms and legs, allowing it to walk. Fans of science fiction movies like *Aliens* and *Avatar* will notice the similarity with hi-tech machines depicted in those films. The robot is so large and heavy that it shakes the ground nearby when walking.

Its creation has involved the work of 30 engineers at robotics company Hankook Mirae Technology, guided by lead designer Vitaly Bulgarov who has previously worked on films such as *Transformers*, *Robocop* and *Terminator*.

"One of the most common questions we get is about the power source," he said on Facebook. "The company's short-term goals include developing robotic platforms for industrial areas where having a tethered robot is not an issue. Another short-term, real world application includes mounting only the top part of the robot on a larger wheeled platform – solving the problem of locomotion through an uneven terrain, as well as providing enough room for sufficient power source."

"Our robot is the world's first manned bipedal robot and is built to work in extreme hazardous areas where humans cannot go (unprotected)," said company chairman Yang Jin-Ho. He has invested 242bn won (\$200 million) in the project since 2014 to "bring to life what only seemed

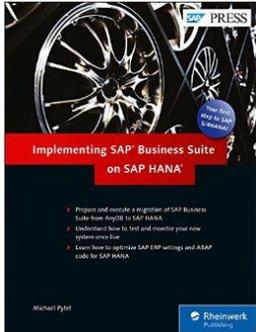
possible in movies and cartoons".

The company has already received inquiries from manufacturing, construction, entertainment and other industries. There have even been questions about its possible deployment along the Demilitarized Zone with North Korea. It might also be used for cleaning up disaster sites like Fukushima. However, the machine needs further research and development first to improve its balance and power systems. At present, it remains tethered by a power cable, but if all goes according to plan, it should be able to move more freely within the next couple of years. The price tag for Method-2 will be 10bn won (\$8.3 million).

Technology Focus

What Are Key Tips for Implementing SAP Business Suite on HANA?

Migrating to SAP Business Suite on HANA requires that you invest strategic effort into infrastructure planning so you don't underestimate or overestimate the required landscape.



A strategic approach to SAP HANA infrastructure planning is a must for CIOs who have their sights set on implementing SAP Business Suite.

Fortunately, it is possible to perform several tasks associated with implementing SAP Business Suite on HANA well ahead of the actual migration project to ensure greater success. Depending on the current state of their SAP systems, companies may first require additional upgrade efforts before migration. SAP systems with SAP NetWeaver 7.31 or higher will require minimal upgrade efforts, while those on SAP ERP 6.0 on SAP NetWeaver 7.0 will need greater preliminary work to bring their current SAP systems up to par with SAP HANA migration requirements. The required upgrade of SAP systems to the Primary Application Server (PAS) is important, as SAP has already laid out clear landscape guidelines for PAS.

CIOs and SAP NetWeaver teams need to focus on the following five areas:

Enqueue server: The enqueue server is the SAP NetWeaver function that manages the lock table in the system's memory and minimizes business interruptions. For example, if one user is processing a purchase order and another tries to access the same purchase order, the system will display an error message to the second user to prevent data inconsistency.

For large SAP systems, SAP highly recommends using a stand-alone enqueue server for better performance and scalability. In future releases, a stand-alone enqueue server will be a mandatory prerequisite for migration to SAP Business Suite on HANA. It is possible to split the enqueue server from the main instance using SAP Software Provisioning Manager (SWPM), and this can be done weeks or months before initiating the migration to SAP Business Suite on HANA.

Dual-stack split: To prevent system performance issues, as well as to reduce system maintenance efforts, SAP no longer supports dual-stack systems. A dual-stack system is a single SAP instance having both an ABAP Application Server and an Application Server for Java that share a single system ID and database. Using SWPM, it is possible to split the enqueue server from the main instance; this is a prerequisite to initiating the migration to SAP Business Suite on HANA. Like the enqueue server procedure, this task of splitting can be initiated weeks or months ahead of the migration project.

Sizing: It's best to use an SAP-provided an ABAP report to begin SAP Business Suite for SAP HANA sizing. Doing so will provide an estimate of the main memory requirement for the SAP HANA database, but it will not provide an estimate of the SAP Application Performance Standard, which is the processing power of the application server. Be sure to engage your SAP hardware vendors, who are likely to have the necessary skills and expertise to provide a realistic estimate of the required hardware and memory.

Three sizing tools and methods with varying degrees of accuracy are available; they are ballpark sizing, SAP sizing for SAP Business Suite on HANA and the SAP Quick Sizer. In ballpark sizing, the existing database size is halved, and a 20% buffer is added, followed by another 50 GB for the repository, stack and other services. The second sizing tool, SAP sizing for Business Suite on SAP HANA, is available if the current SAP ERP Central Component (ECC) system is already upgraded to EHP 7.0. With the Quick Sizer, the sizing estimate is even more accurate, as it is either user-based or throughput-based. User-based estimates are categorized by low-, medium- or high-activity users. With throughput, the sizing estimation is based on the number of transactions and documents (throughput) generated over a period of time.

You should also undertake performance testing of your target landscape before going live to mitigate any risk of poorly estimated sizing.

Backup: SAP HANA, being an in-memory database, uses persistent storage, thereby allowing for database backup. SAP supports a scale-up scenario of Business Suite on HANA migration, but not a scale-out scenario.

The backup strategy of a company often starts with SAP recommendations, best practices and the company's own experience with SAP ECC. The standard backup point from HANA to disk is every five minutes, which can be changed if needed. The backup options are a daily storage snapshot, automatic log backups and a weekly backup of the entire database.

Using multiple backup options reduces risk and reduces your dependency on a single component for the backup solution. Companies often move one copy of the backup to cloud storage in case of a HANA appliance or storage failure.

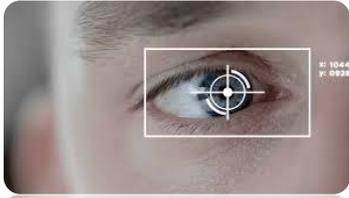
Recovery: A good recovery process ensures database recovery to a data center in the case of a power outage, disk drive failure or major mishap. SAP HANA offers the latest recovery options, including recovery to the latest point in time, a specific point in time or restoration to a new system to create a copy of the database.

The parameters of a recovery point objective for HANA are set by SAP, but the system administrator can change them to suit their company's particular business needs. Another best practice is to ensure that, as soon as the SAP Business Suite for HANA backup is complete, a copy of the production environment is made to a quality assurance system. Doing so will enable SAP consultants, system administrators and programmers to fix any go-live errors in the QA system that may occur in the production system.

It's also highly recommended that you conduct regular performance testing during your SAP Business Suite for SAP HANA migration project to mitigate the risks associated with an incorrect sizing that may lead to a system slow down after going live.

Tech News

Facebook Acquires Eye Tracking Company The Eye Tribe



Facebook has acquired The Eye Tribe in a move that'll likely see the Danish startup's eye tracking technology being used to improve the virtual reality experience through Oculus. A Facebook spokesperson confirmed the acquisition but declined to cite the terms of the deal.

Started in 2011 by four students from the IT University of Copenhagen, The Eye Tribe set out to make eye tracking more accessible to the masses. The company promises that it can enable eye control for consumer devices "that enables simplified and enhanced user experiences," which makes it a good fit for Facebook's Oculus division. The Eye Tribe started out with a developer-focused product, selling 10,000 units of its eye-tracking system to embed into hardware devices. It also has a consumer product line, and this year it launched a prosumer version called The Eye Tribe Tracker Pro for \$199. This version lets anyone affix a device to a laptop or other computing machine to

monitor your eye movement as you do whatever you have to do — Want to read sheet music on a monitor? Need to securely log into the computer? Scroll down a page? All of this are billed as feasible through The Eye Tribe.

The acquisition appears to be squarely for Oculus' benefit versus the rest of the Facebook team. Having sophisticated eye tracking technology is certainly important: If a virtual reality headset can't track your movement, how will it know what to display? Oculus founder Palmer Luckey reportedly called eye tracking a "critical part" of VR technology's future. He told Upload VR in 2015:

Even with Luckey's transitioning role, Oculus hasn't shifted away from this thinking. Nor have other companies such as Google, which picked up Eyefluence, a competitor to The Eye Tribe that had raised \$21.6 million in venture capital. By comparison, Facebook purchased a company that raised \$5.32 million in funding from investors such as Startup Bootcamp and Richard Sanquini, including grant money from The Danish National Advanced Technology Foundation.

Why Digital Wallets Are Just Not Safe in India



If you are an ardent user of digital wallets such as PayTM, PayU, Freecharge etc. for online transactions, beware. Your digital wallet can be vulnerable to cyber-attacks and hackers could elope with your sensitive financial information stored in your digital wallet. According to the claims of US based semiconductor and telecommunications equipment company, Qualcomm all the digital wallets in India lack hardware-based security layer, which make them prone to hack. According to the Qualcomm report, Indian digital wallet companies lack the cyber security preparedness as global wallet companies like Alipay, WeChat from China and Apple Pay use hardware-based security layer, which makes them more secure for online transactions.

"You will be surprised because most of the banking or wallet apps around the world don't use hardware security. They actually run completely in Android mode and users' password can be stolen. Users use fingerprint which might be captured. In India that is the case for most of all digital wallets and mobile banking apps," said Choudhary, Senior director for program management at Qualcomm. When asked about the authenticity of his claim, Choudhary said

that the company is working with most of the OEMs, hence, they have the insider knowledge about this security loophole. As per Qualcomm, this hardware level security feature separates the transactions on mobile from the operating system, thereby making it more safe and secured. Hence, even if the hacker is able to get through the mobile wallet/banking app, he can't get through the hardware. The company has also questioned the safety preparedness of the Indian government when it comes to digitalization of the economy. "Everyone is getting connected, everyone is getting authenticated by device. How do you know that your device is getting ready for demonetization? When you download a mobile banking app you don't know if it is using hardware security or not.", Choudhury asked.

While Qualcomm's claims may fury digital wallet companies, who are the biggest beneficiaries on currency demonetization, it is a fact that digital payment apps are prone to cyber-attacks. We have witnessed several incidents of fraudulent activities such as automatic debit, unauthorized purchases and data breaches on Digital wallets in recent months.

A recent research conducted at the University of Florida revealed severe lapses in the digital payment apps picked up from India. According to the study, MyAirtel app and MoneyOnMobile were found to be having severe security lapses that lead users' data vulnerable for frauds and scams. The report also mentioned that Oxigen and MyAirtel apps used SMS based OTP verification method, which is quite ineffective for controlling brute force and other advanced hacking techniques. And, as per the terms and conditions of these apps, the user is liable for any loss or stolen money.

The joint study by ASSOCHAM and EY has also warned a spike in the mobile frauds post demonetization. According to the study, India will likely face a 65 percent hike in mobile payment frauds in 2017. The study states that Mobile frauds are areas of great concern for companies as 40-45 percent of financial transactions are done via mobile devices, and this threat is expected to grow to 60-65 percent. While cyber crooks are on the lookout for loopholes in the digital payment systems, the government, banks are digital wallet companies are contemplating to implement a robust security mechanism within the process to ensure a high level of data security.

Taking a serious note of the recent high profile attacks on the individuals and establishments, the government is also mulling to review the present Information Technology (IT) Act to strengthen the current cyber security infrastructure in the country. The new amendments aimed at building a strong cyber security framework to address the security challenges as the country is rapidly heading towards digital economy.

Special Focus

Five Things to Watch in Enterprise Storage in 2017



Enterprise storage has historically been a market that is slow to change, but a number of factors are making this an interesting space to watch right now. Vendors like Dell EMC, Hewlett Packard Enterprise (HPE), NetApp NTAP -1.07%, IBM IBM -0.37%, Pure Storage and others are servicing the storage market with on premise traditional storage systems and server-based storage products. In addition, these traditional storage vendors are being challenged by public cloud storage-as-a-service offerings from the likes of Amazon AMZN -1.92% AWS, Google GOOGL -1.25% Cloud, Microsoft MSFT -1.15% Azure and others.

Storage experts expect to see a unique set of dynamics play out in enterprise storage over the coming years. Here are the top five things experts believe will have a major influence on the enterprise storage market in 2017

- New data models will drive the need for new storage technologies. The confluence of mobile applications, cloud computing and the internet of things (IoT) is causing massive increases in the volume of data that needs to be moved, processed and stored by IT. Not only is the volume of data exploding, but the data itself, sources for data and usage models are undergoing significant transformation. Storage systems designed for traditional applications may not be the best fit for new data-intensive workloads such as intelligent edge computing and big data analytics. These new workloads are driving the need for new technologies, products and business models.
- Public cloud storage will continue to grow (but doesn't meet all needs). The public cloud has removed the headache of buying and managing hardware with a model that allows IT to easily spin up storage resources in the cloud almost instantaneously. However, data sovereignty requirements, security concerns, and public cloud bandwidth costs for data-intensive workloads mean that some workloads will continue to live in on-premises datacenters for the foreseeable future. With this in mind, many IT organizations are using hybrid cloud strategies which enable them to access data across on premise and public cloud infrastructures. Lines will continue to blur between private and public cloud storage with the release of Microsoft Azure Stack in 2017, and the availability of new Amazon AWS products such as Snowball Edge and Snowmobile. In addition, I expect to see additional tactics from traditional enterprise storage vendors to combat the threat of public cloud such as increased availability of pay-as-you-go storage consumption models. Enterprise IT organizations will also look to more broadly deploy cloud-to-cloud backup capabilities to reduce risk and protect data.
- Server-based storage will be used for bigger projects. With the rise in software-defined storage, IT organizations are combining commodity server hardware with software-defined storage stacks for their private cloud infrastructure to lower costs and streamline operations. While traditional external storage arrays still make up the majority of the market, server-based storage made up 24% of enterprise storage shipments in Q3 2016, according to IDC, and has been steadily growing at the expense of traditional arrays over the last couple of years. Instead of being relegated to smaller projects, I expect to see software-defined storage becoming an integral part of big data initiatives, workloads that require object-based storage and other data-intensive mission critical projects this year. I also expect to see more software-defined storage products hit the market designed for a wider range of use cases.
- Flash will continue to pick up steam. As the cost of flash media declines, the capacity of flash increases and more advanced data reduction technologies become available, hybrid and all-flash arrays are beginning to take hold beyond high-performance computing and big data analytics workloads. According to IDC, revenue from all-flash arrays reached \$1.1 billion in Q3 2016—over 12% of the total enterprise market—at a growth rate of over 60% versus the same quarter the previous year. In 2017 and beyond, I expect that flash will become the “new normal” for some applications. The speed of flash is also likely to drive adoption of faster Fiber Channel and Ethernet storage networking protocols. Over the next 5 years, some estimates indicate that half of all datacenters will deploy all-flash arrays.
- Other new storage technologies will begin to have a meaningful impact. There are a number of new technologies in various stages of development that will be interesting to watch in 2017.
 - First, NVMe will become available in more server models and hybrid / all-flash arrays as the technology becomes more affordable and the ecosystem expands.
 - Second, the use of containers for enterprise storage become more prevalent.
 - Third, more IT organizations evaluate and adopt products with predictive storage analytics capabilities (ex. Nimble Storage).
 - Fourth and further out on the horizon, storage class memory will become better defined, with productizing likely in 2018+.

There are many moving parts in the enterprise storage market right now, as traditional vendors and new entrants battle for IT budget dollars. They look forward to digging deeper into these areas to see how they evolve throughout 2017.

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- ✚ 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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VISION

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