GALAXY

TechTalk
Issue 26
August 2014

LISTENING TO BUSINESS, APPLYING TECHNOLOGY

IN THIS ISSUE

Apple and IBM team up on Historic Enterprise Push

Apple and IBM unveiled an "exclusive partnership" that will meld IBM's big data and analytics capabilities with Apple's iPhone and iPad. The partnership "aims to redefine the way work will get done, address key industry mobility challenges and spark true mobile-led business change," according to a joint statement from the two companies.

In an interview with CNBC, Apple CEO Tim Cook called the deal historic. "It's huge, it's landmark. This is all about transforming the enterprise. We are just thrilled." Cook said teams of employees from Apple and IBM have been working on the partnership for two years.

Ginni Rometty, IBM chairman, president and CEO, said the move would mean "growth for both our companies...and this idea...of remaking business and reenvisioning and reimagining professions. This is all about unlocking mobility in the enterprise." She also said the pact will allow the two companies to tackle security issues in the workplace.

The joint statement offered more detail, saying the partnership will provide:

- More than 100 industry-specific enterprise solutions including native apps, developed exclusively from the ground up, for iPhone and iPad;
- IBM cloud services optimized for iOS, including device management, security, analytics and mobile integration;
- New AppleCare service and support tailored for the enterprise;
- New "packaged offerings" from IBM for mobile device activation, supply and management.

The IBM MobileFirst for iOS agreement also calls for IBM to sell iPhones and iPads "with the industry-specific solutions to business clients worldwide," according to the statement.

"iPhone and iPad ... have transformed the way people work with over 98% of the Fortune 500 and over 92% of the Global 500 using iOS devices in their business today," said Cook in the joint statement. "For the first time ever, we're putting IBMs renowned big data analytics at iOS users' fingertips, which opens up a large market opportunity for Apple. This is a radical step for enterprise and something that only Apple and IBM can deliver."

Lenovo reveals Google glass competitor

Displaying its smart glasses for the first time in prototype form in its native China on Thursday, the company is hoping to attract developers' and manufacturers' attention ahead of an official launch in October. Lenovo wants to make its take on smart glasses, called the C1, the central hub of the connected home or office of tomorrow. Rather than fish around in a pocket for a smartphone and scroll through screens to find the right app just to unlock a door or turn on the lights, simply looking at the lights while wearing a headset might prove much more intuitive. As for the C1 headset itself, Lenovo hasn't issued any official images of the device and is being very secretive about its specifications. Like Google Glass, it has a front-facing camera and a prism display but the battery is contained within a section worn around the neck.

The Future is Now

Future of technology in aviation

Robotic avatars, cloud computing, airborne connectivity, drones and virtual reality glasses... It may sound like a prop list from the latest sci-fi blockbuster, but these are just some of the recent technological advances being utilised by the aviation industry to reduce delays, lower fares, improve environmental impact, increase safety and, ultimately, boost bottom lines.

In an industry as competitive as aviation, where small changes can have huge repercussions on the success of a company, many airlines and airports are constantly striving to find new ways of gaining that competitive edge. So what are some of these innovations that are helping shape the future of aviation?

Drone technology -Earlier this year Easyjet announced it was testing the use of drone technology to assist engineers in inspecting its aircraft for faults. The drones will be programmed to scan and assess the aircraft, reporting back to engineers on any damage which may require further inspection or maintenance work. Easyjet said the drones will help cut the inspection time on its 220-strong fleet of Airbus aircraft from a day down to "a couple of hours".

As well as drones, Easyjet is exploring other advances in technology, such as the use of robotic arms, lasers and avatars. "The idea is you can actually experience what the robot is doing from a different location,"says Davies.
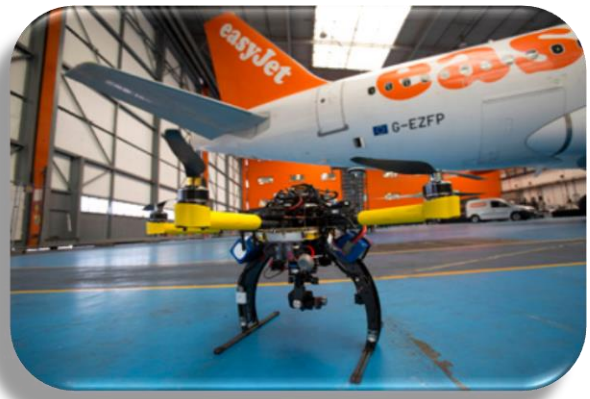
Aircraft tracking- The disappearance in March of Malaysian Flight MH370 prompted fresh calls for better tracking of aircraft. The International Air Transport Association (IATA) has now confirmed that its initiative, the Aircraft Tracking Task Force (ATTF), will deliver draft options for "enhanced" global aircraft tracking to the International Civil Aviation Organisation (ICAO) later this year. The ATTF, which includes pilot representatives and aircraft manufacturers, will look to plug tracking holes that exist in some regions, including over oceans, and in Africa and Russia.

New In-flight broadband- Although business travellers in the US have been able to use in-flight wifi for a number of years, it's something European passengers haven't been able to take advantage of – but that could be about to change. British Airways recently confirmed it is speaking with mobile services firm Inmarsat to roll-out in-flight broadband services on European short-haul routes. Inmarsat, which is also in discussions with five other European airlines, will spend £250 million on a new ground network and S-band satellite, called Europasat, to launch high-speed internet to the aviation industry. The service is expected to be ready by 2016, when BA will become a launch customer on the new aviation network.

Reducing repair costs- In the airline industry, reducing the weight of an aircraft is an important way to cut fuel consumption. Each kilogramme of weight saved lowers CO_2 emissions and reduces costs.

Lufthansa is in the process of completing a two-year research project called Airtech, which focuses on developing new repair procedures and ways of improving shop-replaceable components by using new production methods, such as 3D printing. Many of its aircraft components were designed more than 30 years ago, and repairs frequently involve processes that are based on the original design. Lufthansa is working on a plastic-aluminium composite that could be produced using a 3D printing technique, making it lighter and more cost-effective.

The data revolution- It's not just new gadgets, robots and 3D technology that are dominating the tech space in aviation. Airlines are increasingly using different data techniques to directly target the traveller. However, a recent report by Amadeus highlights that in the battle for additional service revenues, airlines must "more effectively" use the customer data they collect.

With airlines now able to gather and analyse more traveller data through social media, session history from in-flight connections, travel history and previous purchases, the report argues this information can be used to create a single view of a customer.

LG 18-inch OLED display is transparent and can be rolled up like a magazine

LG announced that it has come up with a flexible 18-inch OLED display panel that can be rolled into a cylinder that's just three centimeters across. LG has been in an arms race with Samsung over bendable and curved mobile devices. While Samsung has won most of the skirmishes (it came out with the Galaxy Round before LG released the G Flex), LG may start a winning streak with larger devices.

The prototype high-definition TV, which has a resolution of 1200 pixels by 810 pixels with almost 1 million megapixels, can be rolled up without causing any damage to the display. This means that the TV can be stored like a yoga mat when it's not in use.

The bendable TV was just half of LG's revelations in the home entertainment front. The company also revealed a transparent, semi-opaque display, which, as it claims, has 30% transmittance. This is significantly higher than the 10% transmittance on previous iterations of transparent LCD screens. The higher transmittance, which is due to what LG calls its "pixel design technology," means that objects behind the TV screen can be seen more clearly.

With the new prototype, LG claims that it has proven that rollable TVs that are bigger than 50 inches can be mass produced in the near future. The company was able to enhance the flexibility of the OLED displays and decrease its thickness by using polyimide film the backplane for the panels. According to LG, polyimide film allowed the screens to reach its maximum curvature radius, something which normal plastic could not.

Technology Focus

What is Li-Fi ? Is this replacing Wi-Fi ?

Almost everyone knows about Wi-Fi (it's a medium which uses radio waves to provide wireless high-speed Internet and network connections), now Li-Fi is newer wireless-communication systems which uses light as a carrier instead of traditional radio frequencies, as in Wi-Fi.

Li-fi, or "**light fidelity**", is a theorized way to stream data via LED lighting instead of Wi-Fi. This new technology has been exhibited on numerous occasions and has chiefly developed over the last decade with the specific drive by Prof. Harald Haas focusing on Li-Fi, rather than just VLC **(Li-fi, also known as visible light communications (VLC))** Indeed, pure VLC demonstrated the world's first streaming Li-Fi system to complement VLC data rates of over 6 Gbps. Furthermore, pure VLC was also the first to prove that that Li-Fi, or VLC systems in general, **do not require line-of-sight** conditions. Li-Fi has the advantage of being able to be used in electromagnetic sensitive areas such as in aircraft, nuclear power plants, oil & gas installations and other places without causing interference. It promises to be cheaper and more energy-efficient than existing wireless radio systems given the ubiquity of LED bulbs and the fact that lighting infrastructure is already in place. Visible light is part of the electromagnetic spectrum and 10,000 times bigger than the radio spectrum, affording potentially unlimited capacity.

But there are drawbacks: block the light and you block the signal. However, this is also a potential advantage from a security point of view. Light cannot penetrate walls as radio signals can, so drive-by hacking of wireless internet signals would be far more difficult, if not impossible. Research team including scientists from the Shanghai Institute of Technical Physics at the Chinese Academy of Sciences admitted that the technology was still in its infancy and needed further developments in microchip design and optical communication controls before it could go mass market.

How Li-Fi Works?

Li-Fi is typically implemented using white LED light bulbs at the downlink transmitter. These devices are normally used for illumination only by applying a constant current. However, by fast and subtle variations of the current, the optical output can be made to vary at extremely high speeds. This very property of optical current is used in Li-Fi setup. The operational procedure is very simple-, if the LED is on, you transmit a digital 1, if it's off you transmit a 0. The LEDs can be switched on and off very quickly, which gives nice opportunities for transmitting data. Hence all that is required is some LEDs and a controller that code data into those LEDs. All one has to do is to vary the rate at which the LED's flicker depending upon the data we want to encode. Further enhancements can be made in this method, like using an array of LEDs for parallel data transmission, or using mixtures of red, green and blue LEDs to alter the light's frequency with each frequency encoding a different data channel. Such advancements promise a theoretical speed of 10 Gbps – meaning one can download a full high-definition film in just 30 seconds.

Values of Li-Fi

- A free band that does not need license.
- High installment cost but very low maintenance cost.
- Cheaper than Wi-Fi.
- Theoretical speed up to 1 GB per second : Less time & energy consumption.
- No more monthly broadband bills.
- Lower electricity costs.
- Longevity of LED bulb : saves money.
- Light doesn't penetrate through walls : secured access.

Limitations- The main problem is that light can't pass through objects, so if the receiver is inadvertently blocked in any way, then the signal will immediately cut out. "**If the light signal is blocked**, or when you need to use your device to send information — you can seamlessly switch back over to radio waves", Harald says.

Reliability and network coverage are the major issues to be considered by the companies while providing VLC services. **Interference from external light sources** like sun light, normal bulbs; and opaque materials in the path of transmission will cause interruption in the communication. High installation cost of the VLC systems can be complemented by large-scale implementation of VLC though Adopting VLC technology will reduce further operating costs like electricity charges, maintenance charges etc.

"We still need Wi-Fi, we still need radio frequency cellular systems. You can't have a light bulb that provides data to a high-speed moving object or to provide data in a **remote area** where there are trees and walls and obstacles behind," he says.
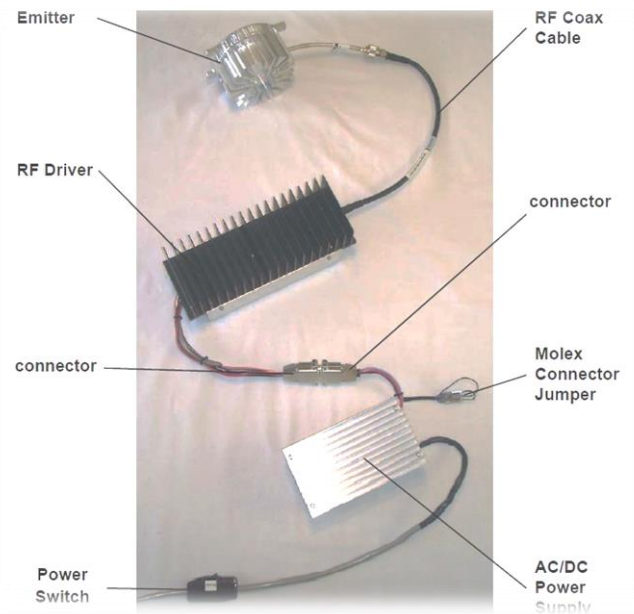
Their size, versatility and plug-and-play features make them ideal for use in remote locations, for temporary deployments or even for use by businesses temporarily in locations that are in high-risk zones for floods or earthquakes. They could even serve as a mini-datacentre for storage and compute capacity on an oil tanker.

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Tech News

EMC revamps lineup with new storage arrays, systems

EMC revamped its storage lineup to appeal to customers focused on big data applications and so-called "data lakes," hybrid data centers and replacing traditional drives with solid state options.

Specifically, EMC launched the following:

A revamp of EMC's VMAX3 family of systems that enable customers to move away from hardware and offer more of a enterprise data service. For good measure, EMC acquired TwinStrata and said that public cloud access will be embedded into the VMAX3 systems. The new platform is designed to allow enterprises to manage what storage remains in the data center and where the public cloud makes more sense. VMAX3 improves performance by 3X over previous versions and includes the Hypermax OS, which combines an operating system with a storage hypervisor. The VMAX3 family also includes direct backup to EMC's Data Domain unit. Overall, the VMAX3 systems can support 100s of virtual machines and scale to 70,000.

An upgrade to EMC's Isilon OneFS platform- The upgrade revolves around enabling data lakes, which allow companies to ingest unstructured information and analyze it. The data lake concept is critical to companies that are using big data applications and looking to connect the dots between structured and unstructured information. In addition, EMC said that its Pivotal big data unit will offer a Isilon-Hadoop bundle.

A series of features and configurations for EMC's XtremIO all-flash arrays-
EMC's flash portfolio now includes low-cost configurations that improve density per storage rack and price/performance ratios. The all-flash arrays include new in-memory options, data compression improvements and configurations that cover more market segments with a 5TB Starter X-Brick. EMC also has new XtremIO clusters that support up to six 20TB X-Bricks.

IBM pouring billions into R&D semiconductor design

IBM says it plans to invest over $3 billion over the next five years in research and development of future chip technology. The company says the need for advanced chip technologies will be necessary to meet the ever-growing demands of cloud computing and big data systems. The programs being funded by IBM are geared toward the development of smaller and more powerful chips. Another goal of the project is to develop the technology to produce semiconductor chips from other materials than the traditional silicon.

At the same time IBM is pouring money into research and development of chip technology, it is actively pursuing the divestiture of some of its chip manufacturing facilities. The company may be planning to maintain its ownership of the technology of its chips, with less focus on controlling the means of producing those chips. The company stated that "these investments will push IBM's semiconductor innovations from today's breakthroughs into the advanced technology leadership required for the future."

The first research effort will center around "7 nanometer and beyond" silicon technology that will attempt to hurdle the physical and technical limitations that impede current semiconductor scaling abilities, restricting progress in chip manufacturing.

The second program is a think-outside-the-box effort to develop alternative means of manufacturing chips, including the use of nontraditional materials beyond silicon.

IBM will throw money at areas of research already in progress at Big Blue, including carbon nanoelectronics, silicon photonics, memory technologies and cognitive computing. Semiconductor design and manufacturing technology is currently fixed at the 22-nanometer level. It is believed that reductions down to 14 and then to 10 will occur within the next few years. The industry objective is to get to the aforementioned "7 and beyond" standard.

Microsoft: Next version of Windows will have enterprise 'game changing' features

Microsoft's chief operating officer Kevin Turner said at the company's 2014 Worldwide Partner Conference that the next version of Windows will have 'game changing' features for enterprise users, but did not offer any specific details. Turner said that they were "really listening and taking feedback" about the next version of Windows from all sides, including consumers, developers, partners and business customers of all sizes. The next major update for Windows has the internal code name Threshold and may or may not be called Windows 9 when it is officially released.

Turner did state that the next version of Windows "will be a great world class enterprise OS when it comes out." Current rumors suggest that Microsoft will release a public preview version of Threshold sometime this fall, with a final release sometime in the spring of 2015. A recent report claimed that Threshold might even be a free update for current Windows 7 and 8.1 users.

Special Focus

IBM's Tivoli Storage Manager enters Gartner's Magic Quadrant

IBM's Tivoli Storage Manager (TSM) software has protected business data for 20 years and is a major market share player and an enterprise standard in the backup, recovery, and disaster recovery space. IBM's innovations in this area are well known and recognized throughout the IT industry as the "go to" solution for big data, database backup, recovery, and data resiliency.

Gartner published its 2014 Magic Quadrant for Enterprise Backup Software and Integrated Appliances (June 16, 2014), acknowledging that IBM's work to apply analytics to data back-up and storage management enables businesses to deliver more intelligent, global data availability. These features enable employees and customers to access the information they need, when they need it. Building on the recent launch of software-defined storage products, IBM continues to help organizations build smarter ways to use their data to its fullest potential.

IBM's Tivoli Storage Manager (TSM) offers very broad platform support across many OSs, file systems and applications. IBM has over 23,000, predominantly large enterprise customers for TSM, and has partnerships with MSPs to offer recovery services. While IBM has leveraged its large direct sales force, the portfolio generates the majority of its revenue from worldwide business partners.

Customers cite the portfolio's ability to scale to handle very large recovery requirements, and the vendor's service and support continue to receive high marks. Through its acquisition of Butterfly Software, IBM now claims to have profiled over 2,000PB of backup environments running competitive solutions, and states that, overall, TSM has demonstrated 53 percent lower total cost of ownership (TCO) over the competition.

Magic Quadrant

Figure 1. Magic Quadrant for Enterprise Backup Software and Integrated Appliances

Source: Gartner (June 2014)

Strengths

- A major market share player, IBM TSM offers midsize to large enterprise end-to-end recovery capabilities, from a single machine to the largest enterprises.
- TSM offers well-proven incremental-forever backup processing, comprehensive policy-based management, and a broad set of no-charge data reduction and reporting features.
- Customers and references cite the portfolio's scalability, code quality and solid support staff as major reasons for choosing, and remaining with, the solution.

Galaxy is one of IBM & EMC's Premier Business Partners and has a skilled pool of experts/consultants to design, implement and support IBM and EMC Backup Recovery solutions for any enterprise.

The Future is Now

UK to allow driverless cars on public roads in January

Driverless cars are an exciting glimpse of the future, with great potential to improve road safety. It seems the UK has caught on to this, announcing a £10 million (US$17 million) scheme to test driverless cars on public roads from January 2015. The Department for Transport had originally pledged to let self-driving cars be trialled on public roads by the end of 2013. UK engineers, including a group at the University of Oxford, have been experimenting with driverless cars. But, concerns about legal and insurance issues have so far restricted the machines to private roads. Other countries have, however, been swifter to provide access to public routes.

The label "driverless vehicle" actually covers a lot of different premises. One of the leading innovations is Lidar (light detection and ranging), a system that measures how lasers bounce off reflective surfaces to capture capture information about millions of small points surrounding the vehicle every second. The technology is already used to create the online maps used by Google and Nokia. Another complimentary technique is "computer vision" - the use of software to make sense of 360-degree images captured by cameras attached to the vehicle, which can warn of pedestrians, cyclists, roadworks and other objects that might be in the vehicle's path.

"Britain is brilliantly placed to lead the world in driverless technology. It combines our strengths in cars, satellites, big data and urban design; with huge potential benefits for future jobs and for the consumer," said Science Minister Greg Clark.

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

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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

"*The Football World Cup provided a lot of entertainment in the past month. A lot of tweets and messages were buzzing around social networks, but the one that stuck me the most was "Netherlands have Robben, Argentina have Messi, Brazil have Neymar but Germany have a team". No wonder Germany emerged the ultimate winners.*

This just stresses the importance of teamwork, not only in sports but all walks of life. Each person in a team has a role and when everyone plays their roles properly, the team succeeds. The success of each individual lies in the success of the team. At Galaxy, we have always been committed to performing as a team - with players not only from within Galaxy but also from our extended family of clients, principals, vendors, OEMs and contractors. I sincerely thank all these players for helping carry Galaxy to where it is and to even greater heights in the coming days."