LISTENING TO BUSINESS, APPLYING TECHNOLOGY

# TechTalk

**GALAXY**

Issue 70th, Apr 2018

## Galaxy is now a Dell EMC Titanium Partner!

Galaxy is India's leading provider of infrastructure management solutions, partnering with some of the best names in industry to offer value-added services to end customers. While leading OEMs leverage cutting-edge technology to improve business outcomes for enterprises at a global level, they use channel partners like Galaxy to penetrate across markets and industries at a more local level.

Galaxy has had a long-standing relationship with both Dell and EMC, before they merged into a single entity. Post their merger, Galaxy as a **Dell EMC Gold Partner** was working hard to take this relationship to the next level. We are pleased to announce that Galaxy is now a **Dell EMC Titanium Partner**!

This is the highest tier in Dell EMC's partner program, and comes with a series of benefits including greater funds for marketing activities as well as enhanced executive support, to fully leverage Dell EMC resources and continue this relationship over time.

Congratulations to Galaxy's **Data Center**, **Networking**, **Coverage** and **Inside Sales** teams for their efforts and hard work. This also reflects Galaxy leadership's resolve to be the best of the best, and continuously improve to help customers realize their business objectives.

## M.D. Speaks

*"Dear Readers,*

*On the completion of yet another successful financial year for Galaxy, I would like to thank all those who have made this possible. A very big thank you to all our customers, vendors, partners, principals, employees, contractors as well as well-wishers who are truly responsible for this success. This performance reinforces our belief that we are on the correct path and guided by the right values. We will continue to ensure customer delight with highest level of integrity and respect for the individual, and pursue excellence through quality.*

*In the year ahead, we will continue to bring new and innovative technology-enabled business solutions to our customers. Apart from consolidating our position in the large enterprises space, we have organized a team to address the hitherto unaddressed mid-market customers. Our focus will continue to remain on solutions around Data Centre, Networking, Mobility, Security and IoT.*
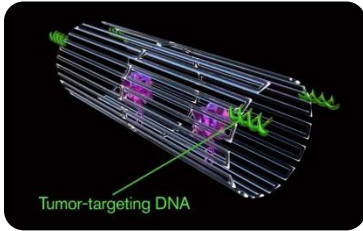
*Finally, I would like to wish all our Indian readers a very happy and successful fiscal year 2018-19.*

*Happy Reading"*

# The Future is Now

## Fully Autonomous Cancer-Fighting Nano Robots Seek and Destroy Tumors



Tumor-targeting DNA

In a major advancement in nanomedicine, Arizona State University (ASU) scientists, in collaboration with researchers from the National Center for Nanoscience and Technology (NCNST), of the Chinese Academy of Sciences, have successfully programmed nano robots to shrink tumors by cutting off their blood supply. The key to programming a nano robot that only attacks a cancer cell was to include a special payload on its surface, called a DNA aptamer. The DNA aptamer could specifically target a protein, called nucleolin, that is made in high amounts only on the surface of tumor endothelial cells — and not found on the surface of healthy cells.

"We have developed the first fully autonomous, DNA robotic system for a very precise drug design and targeted cancer therapy," said Hao Yan, director of the ASU Biodesign Institute's Center for Molecular Design and Biomimetics and the Milton Glick Professor in the School of Molecular Sciences. "Moreover, this technology is a strategy that can be used for many types of cancer, since all solid tumor-feeding blood vessels are essentially the same," said Yan. The successful demonstration of the technology, the first-of-its-kind study in mammals utilizing breast cancer, melanoma, ovarian and lung cancer mouse models, was published in the journal Nature Biotechnology.

Yan is an expert in the field of DNA origami, which in the past two decades, has developed atomic-scale manufacturing to build more and more complex structures. The bricks to build their structures come from DNA, which can self-fold into all sorts of shapes and sizes —all at a scale one thousand times smaller than the width of a human hair—in the hopes of someday revolutionizing computing, electronics and medicine.

That one day may be coming a bit faster than anticipated.

Nanomedicine is a new branch of medicine that seeks to combine the promise of nanotechnology to open up entirely new avenues for treatments, such as making minuscule, molecule-sized nanoparticles to diagnose and treat difficult diseases, especially cancer. Until now, the challenge to advancing nanomedicine has been difficult because scientists wanted to design, build and carefully control nano robots to actively seek and destroy cancerous tumors—while not harming any healthy cells.

The international team of researchers overcame this problem by using a seemingly simple strategy to very selectively seek and starve out a tumor. This work was initiated about 5 years ago. The NCNST researchers first wanted to specifically cut-off of tumor blood supply by inducing blood coagulation with high therapeutic efficacy and safety profiles in multiple solid tumors using DNA-based nanocarriers. Prof. Hao Yan's expertise has upgraded the nanomedicine design to be a fully programmable robotic system, able to perform its mission entirely on its own.

"These nanorobots can be programmed to transport molecular payloads and cause on-site tumor blood supply blockages, which can lead to tissue death and shrink the tumor," said Baoquan Ding, a professor at the NCNST, located in Beijing, China.

## Physicists Create a Topological Superconductor for Quantum Computing

Researchers throughout the world are struggling to build a quantum computer. One of the greatest challenges is to overcome the sensitivity of quantum systems to decoherence, collapse of super-positions. One track within quantum computer research is therefore to make use of what are known as Majorana particles, which are also called Majorana fermions. Microsoft is also committed to the development of this type of quantum computer.



With their insensitivity to decoherence what are known as Majorana particles could become stable building blocks of a quantum computer. The problem is that they only occur under very special circumstances. Now researchers at Chalmers University of Technology have succeeded in manufacturing a component that is able to host the sought-after particles. Majorana fermions are highly original particles, quite unlike those that make up the materials around us. In highly simplified terms, they can be seen as half electron. In a quantum computer the idea is to encode information in a pair of Majorana fermions which are separated in the material, which should, in principle, make the calculations immune to decoherence.

In solid state materials Majorana fermions only appear to occur in what are known as topological superconductors – a new type of superconductor that is so new and special that it is hardly ever found in practice. But a research team at Chalmers University of Technology is now among the first in the world to submit results indicating that they have actually succeeded in manufacturing a topological superconductor.

"Our experimental results are consistent with topological superconductivity," says Floriana Lombardi, Professor at the Quantum Device Physics Laboratory at Chalmers. To create their unconventional superconductor, they started with what is called a topological insulator made of bismuth telluride, $Be_2Te_3$. A topological insulator is mainly just an insulator – in other words it does not conduct current – but it conducts current in a very special way on the surface. The researchers have placed a layer of a conventional superconductor on top, in this case aluminum, which conducts current entirely without resistance at really low temperatures. "The superconducting pair of electrons then leak into the topological insulator which also becomes superconducting," explains Thilo Bauch, Associate Professor in Quantum Device Physics.
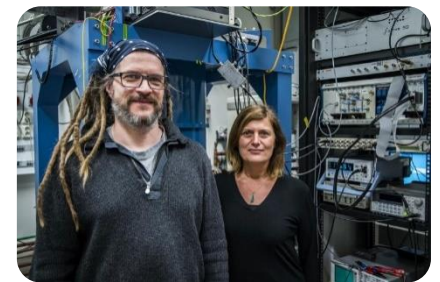
# Technology Focus

## IoT: The Next Big Thing in Manufacturing



Digital disruption has changed the world as we know it. Businesses are finding themselves at the precipice with their capabilities challenged by every innovation. The biggest boon that the industry has seen so far is the emergence of connected devices, powered by the Internet of Things (IoT), which has added more devices to the online networks and shown the way for the manufacturing sector.

An estimate by Verizon stated that the IoT platform market is expected to grow 35% every year and reach $1.16 billion by 2020. The same report further estimated that the biggest growth for the platform will be in business-to-business applications that are expected to garner nearly 70% of its potential value through IoT. If these estimates are to be believed, every industry will witness a ripple effect from boosted IoT connectivity.

The biggest ripple effect has already begun and is ongoing in the manufacturing sector. From processes to new machines at play, the sector has been witnessing a plethora of changes due to the IoT revolution which has triggered new innovations to boost efficiencies. The sector saw IoT investments amounting to $183 billion, making it the topmost sector to maximize the utility of connected devices.

**Paving the way for planned decisions:** The biggest asset that IoT brings to the sector is data generation and mining through connected devices. With the implementation of technologies like sensors, artificial intelligence, 3D manufacturing and computer-aided design (CAD), the sector is witnessing the link between design and manufacturing becoming more cohesive and seamless. Terabytes of data are being generated through these technologies. The industry is analyzing this data and making informed decisions that consider several parameters simultaneously, including market trends, customer needs and differentiated offerings.

Processes are constantly being rethought to enhance efficiencies, with the biggest focus being the implementation of shop floor to top floor connectivity. The generated data is becoming more accessible through various levels and functions of an organization due to an integrated network, allowing for mass customization. Furthermore, sensors can generate real-time insights that allow flexibility in decision-making to meet a dynamic market ecosystem and changing customer needs. The future of these technologies will see additional connectivity as more machines are added to the digital grid. By becoming a part of intellectual property, data, will thus become the most crucial asset for companies to safeguard. There will also be an increased focus on endpoints and services that process and store data. A report by Gartner estimates that the expenditure on these endpoints and services will reach $2 trillion in 2017. This figure is expected to increase as more devices get connected to the grids.

**Creating smart factories:** If implemented to their fullest, these technologies will create smart factories with a hybrid approach to virtual and actual content warehouses that relentlessly innovate to meet dynamic customer demands. These factories will minimize human intervention in the manufacturing process, while increasing the demand for new skills. These new factories will also witness integrated IT systems that can potentially redefine traditional supply chains. Integration will be key for the digital supply chains of the future, which are expected to boost production by 20%. These supply chains will also have machine learning capabilities, which maintain quality while increasing quantity.

Technologies like sensors will limit dependency on human intervention and allow optimal efficiency, accuracy, and workflow. Monotonous or repetitive processes can be passed on to controlled robots, who will ensure that human presence is not needed in unsuitable or dangerous situations.

The need for these new supply chains will also trigger a change in the skills being hired for. Companies in the manufacturing sector will require technical expertise and a workforce that can efficiently leverage new technologies. This trend is already being witnessed with new skills and rising demand in fields such as big data analytics and data-driven decision-making services.

**The future of manufacturing:** In India, the fields of analytics, data science and big data are estimated to generate $2.03 billion annually in revenues, growing at a CAGR of 23.8%. This growth is expected to double by 2020 with a sizeable chunk due to big data. Additionally, about 12% will be due to advanced analytics, predictive modeling, and data science.

These figures represent the face of a manufacturing sector that is set to be revolutionized with IoT. It presents a new era for the industry with processes becoming more seamless and integrated to keep customers at their center. It will create an ecosystem where customers are paramount, and processes are altered to match their needs and demands as closely as possible. The manufacturing industry is fast-becoming the pioneering sector in leveraging IoT fully and the future will see more traction to boost capabilities.

# Tech News

## 5 Reasons why Cloud-Managed IT is Wave of the Future

If the challenges involved in managing your employees' bandwidth, security, and mobility needs are keeping you awake at night, we've got some tough news: the rapid pace at which technology changes means those challenges won't go away anytime soon. The way forward lies in adopting a scalable solution that can grow as the demands and pressures on a network increase. The best way to achieve this goal is to migrate your IT infrastructure and manage it entirely through the cloud. Here are 5 reasons why:

**1. Manage and troubleshoot from anywhere:** Traditionally, managing networks or troubleshooting a network issue requires someone to be physically present. With cloud-managed IT, managing and troubleshooting issues from anywhere is finally a reality. An IT administrator can quickly get alerted about a network issue, diagnose the problem, and devise a solution from any computer with internet access. Cloud-managed IT doesn't just help save time and resources; it unlocks entirely new capabilities that simply aren't possible with legacy IT solutions.

**2. Easy to set up, configure, and manage:** For most IT admins, the thought of installing and maintaining network infrastructure doesn't exactly inspire joy—even less so when it comes to multi-site deployments. Managing IT infrastructure through the cloud dramatically simplifies ordinarily challenging tasks and cuts down on time and cost. With zero-touch provisioning, devices such as access points, security appliances, and VoIP phones can be pre-configured before they even arrive on-site. Configurations download automatically once the device is connected to the network for a true plug-and-play experience.

**3. Superior security:** Cloud-managed IT makes it simple for IT admins to get a real-time understanding of what's going on network-wide and to ensure that security threats are kept at bay. With a fully cloud-managed infrastructure, IT admins can look at application usage on a per-client basis and enforce security policies at the firewall or access point level, all from one dashboard. Additionally, when threats arise, admins can rest assured knowing that the latest security updates have already been pushed to firewall devices, silently and automatically, over the Internet.

**4. Interconnected management unlocks new possibilities:** Traditional IT management is a piecemeal affair. Because there are different vendors for different parts of the stack—wireless, switching, security, mobile device management, and more—configuring more than one category of device at a time to accomplish a certain network-wide goal is usually not possible. The beauty of cloud-managed IT is that every part of the stack can be controlled from a single management interface. This enables different elements of your IT infrastructure to work together in new ways. For instance, with every device communicating with one another and with the cloud, IT admins can view a complete network topology, updated live, and instantly troubleshoot issues with any device.

**5. Lower TCO (total cost of ownership) :** Of course, one of the most important considerations when it comes to choosing which IT stack to implement is overall cost. And while the cost of the initial hardware is certainly important, too many companies focus only on the hardware cost and ignore ongoing support and maintenance costs. The beauty of cloud-managed IT is that the flexibility and ease-of-use inherent in the cloud management model means much lower costs over time, resulting in a lower TCO over the span of a few years.

## General Data Protection Regulation (GDPR) Requirements, Deadlines & Facts

**GDPR is a regulation that requires businesses to protect the personal data and privacy of EU citizens for transactions that occur within EU member states. And non-compliance could cost companies dearly. Here's what every company that does business in Europe needs to know about GDPR.**

Companies that collect data on citizens in European Union (EU) countries will need to comply with strict new rules around protecting customer data by May 25. The General Data Protection Regulation (GDPR) is expected to set a new standard for consumer rights regarding their data, but companies will be challenged as they put systems and processes in place to comply.

**What is the GDPR?**

The European Parliament adopted the GDPR in April 2016, replacing an outdated data protection directive from 1995. It carries provisions that require businesses to protect the personal data and privacy of EU citizens for transactions that occur within EU member states. The GDPR also regulates the exportation of personal data outside the EU. The provisions are consistent across all 28 EU member states, which means that companies have just one standard to meet within the EU.

# Tech News

## General Data Protection Regulation Requirements, Deadlines & Facts [ctnd.]

**What types of privacy data does the GDPR protect?**

GDPR protects basic identity information such as name, address and ID numbers, as well as web data such as location, IP address, cookie data and RFID tags. It also covers health and genetic data, biometric data, racial or ethnic data, and political opinions, sexual orientation etc.

**Which companies does the GDPR affect?**

Any company that stores or processes personal information about EU citizens within EU states must comply with the GDPR, even if they do not have a business presence within the EU. Specific criteria for companies required to comply include presence in an EU country. It also applies in case of no presence in the EU, but if the company processes personal data of European residents. Likewise, for a company with more than 250 employees or in case of fewer than 250 employees, if its data-processing impacts the rights and freedoms of data subjects, is not occasional, or includes certain types of sensitive personal data. That effectively means almost all companies.

**Who within my company will be responsible for compliance?**

The GDPR defines several roles that are responsible for ensuring compliance: data controller, data processor and the data protection officer (DPO). The data controller defines how personal data is processed and the purposes for which it is processed. The controller is also responsible for making sure that outside contractors comply.

**What will GDPR preparation cost my company?**

According to the PwC survey, 68 percent of U.S.-based companies expect to spend $1 million to $10 million to meet GDPR requirements. Another 9 percent expect to spend more than $10 million.

**How does the GDPR affect third-party and customer contracts?**

The GDPR places equal liability on data controllers (the organization that owns the data) and data processors (outside organizations that help manage that data). A third-party processor not in compliance means your organization is not in compliance. The new regulation also has strict rules for reporting breaches that everyone in the chain must be able to comply with. What this means is that all existing contracts with processors (e.g., cloud providers, payroll service providers) and customers need to spell out responsibilities.

# Special Focus

## BlackBerry Limited and Microsoft Announce a Strategic Partnership to offer Microsoft Office (Mobile) Apps within BlackBerry Dynamics

BlackBerry Limited and Microsoft Corp. announced a strategic partnership to offer enterprises a solution that integrates BlackBerry's expertise in mobility and security with Microsoft's unmatched cloud and productivity products.

However, users would like to know exactly what was announced. Two of the most important things are:

- The ability to use Microsoft Office (mobile) apps within BlackBerry Dynamics.

- The ability to have Blackberry's Secure Platform products hosted in Azure.
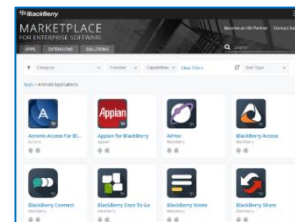
This means the empowering users with the ability to Use Microsoft Office Apps within BlackBerry Dynamics. We need a bit of background here:

- **What is BlackBerry Dynamics?** BlackBerry Dynamics is a container for mobile apps with its own SDK (Software Development Kit) to develop apps for it. The idea here is that apps running in this container and developed for it will achieve a higher level of security.

- **How many public apps are there for this BlackBerry Dynamics container?** Counting Android apps, there seems to be 48 of them. This includes BlackBerry's own native apps such as BlackBerry Work, BlackBerry Access, BlackBerry Connect, BlackBerry Tasks, BlackBerry Notes, BlackBerry Docs to Go and BlackBerry Share.

- **What is BlackBerry Work?** It is BlackBerry's 2-star-rated work e-mail app made to work within the BlackBerry Dynamics container.

# 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 9001:2015 organization, founded in 1987.
- Committed team of over 250 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.

**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**

*"With our strategic partners we leverage each other's' capabilities to deliver reliable and integrated solutions to the customer. Our consultative sales approach, execution capabilities and commitments helps our customers meet a wide range of end-to-end technology needs while remaining focused on their core businesses."*