

BUSINESS TRANSFORMATION

OCTOBER 2018

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AUTOMATING TRADE FINANCING USING BLOCKCHAIN

Trade financing can be more efficient using blockchain connecting importers, exporters, shippers, banks, border authorities.



John Iossifidis,
CEO of Noor Bank



Rahul Jayakar, GTS Trade Head,
Corporate Banking, Noor Bank

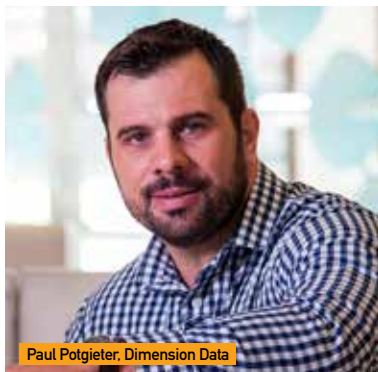


Muhammed Arafath,
Executive Director of Apla



Andrew Fawcett, Al Tamimi & Company

HOW BLOCKCHAIN
TECHNOLOGY WILL ENABLE
BUSINESS IN DUBAI



Paul Potgieter, Dimension Data

GETTING NEXT GENERATION
WORKERS AI AND
BLOCKCHAIN READY



Vincent Gourmelen, HID

VISUAL SECURITY STILL
PART OF DAILY SECURITY
ROUTINES



Jonathan Wood, Infor

CONNECTED RETAILER
NEXT LINK IN SMART
SUPPLY CHAIN



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Dear Readers,



From next week, Gitex Technology Week, the largest technology expo and conference in the \$230 billion MENA ICT market region kicks off. Experience Future Urbanism will be a key theme echoing artificial intelligence and robotic solution vendors participating. The 38th edition will see 4,000 participants from over 100+ countries and 290 hours of keynote presentations.

As per the organisers announcement, "It will be the region's biggest ever artificial intelligence event, its most illustrious investor-startup gathering, and the launch-pad for tens of thousands of game-changing technologies including 5G, robotics, virtual and augmented reality, all celebrated under the tagline Experience Future Urbanism."

Ubtech Robotics, recently announced as the World's Most Valuable AI Startup, will be unveiling their Cruzr robot. GIS International's Sanbot will be on show, complete with its matrix design that incorporates 360-degree Wrap-Around technology, utilising over 60 sensors to give Sanbot perfect awareness of its surroundings. SparkCognition, named ninth on the Wall Street Journal's Tech Companies to Watch 2018 list, and who have just announced a collaboration with Boeing, will also feature their latest robot.

Amro Kamel will introduce the Promobot V.4, a robot equipped with two printers and an in-built PIN pad. Dubai Police will officially welcome virtual police officer AMNA to the force. Bluephin's self-swimming waste collecting robot will be making waves as it demonstrates its capabilities in collecting up to 350kg of trash every two hours.

Huawei will unveil AI that they predict will revolutionise how governments, businesses, and consumers interact with the world. AI will be at the heart of SAP's Intelligent Enterprise exhibiting theme, itself aimed at showcasing how the future of Smart Cities can reimagine our daily lives. HPE will allow businesses to experience their latest solutions to ramp up, optimize and scale AI across varied industry sectors.

On a different scale, Business Transformation presents the use case of blockchain across trade financing through the thought leadership of John Iossifidis and Rahul Jayakar at Noor Bank. Muhammed Arafath at Apla presents blockchain social and community use cases. We also present the provoking results showing the digital divide that exists from the global survey of 3,700 decision makers by Dell Technologies and Vanson Bourne.

We present insights gained from Gitex 2018 into futuristic business in the next BT issue.

Arun Shankar
arun@gecmidiagroup.com

GETTING NEXT GENERATION WORKERS AI AND BLOCKCHAIN READY

It is imperative to include coding skills inside regional education to get next generation of workers ready, explains Paul Potgieter at Dimension Data.



PAUL POTGIETER
Managing Director UAE,
Dimension Data.

Artificial Intelligence and Blockchain are two significant technologies that are expected to change the regional landscape in terms of demand for specialized skills. Across the region, banking and finance organizations will lead the artificial intelligence adoption curve. Government, education, healthcare and manufacturing organizations will follow in the adoption and implementation cycle.

Early use cases of AI will appear in defense, terrorism, investigation, government intelligence, automated customer service, fraud analysis and investigation. Innovation in development of use cases will be assisted by natural language processing, content aggregation, and machine learning.

The UAE has already adopted such systems in selective organizations including Emirates NBD and Department of Economic Development, Dubai through cognitive assistants Eva and Rashid. In October 2017, the UAE Government launched its UAE Strategy for Artificial Intelligence. The broad objectives cover: Transport – to reduce accidents and operational costs; Traffic – to reduce accidents and congestion; Health – to minimize chronic diseases; Renewables – to manage facilities; Technology – to increase productivity; Education – to cut costs and enhance desire for education; Environment – to increase forestation rate.

Blockchain technology on the other hand uses an open source platform and distributed computing architecture. It is a distributed ledger technology that drives any business that depends on high compliance standards of

recording any transaction. Records of transactions on a blockchain ledger cannot be modified or hacked, making it suitable for the highest levels of national record keeping.

In April 2018, the UAE Government launched its Emirates Blockchain Strategy 2021, which aims to capitalize on the blockchain technology to transform 50% of government transactions into the blockchain platform by 2021.

By adopting this technology, the UAE government is expected to save AED 11 billion in documents processing involving annual printing of 398 million documents and 77 million work hours. Adopting blockchain to secure digital transactions, allows the government to assign a unique identification number for its customers, pointing to their repository of documents and transactions.

Regional governments have identified blockchain as a key enabler and will take the lead in adoption, followed by education, healthcare, financial services, distribution and other services. Adoption of all these technologies with their compelling use cases requires specialized education at regional college and university, grass root levels.

The recent One Million Arab Coders initiative launched in October 2017 by HH Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, is a movement in this direction. This program seeks to help one million young Arab programmers develop their digital and coding skills of the future for areas like artificial intelligence, robotics, cognitive and biological sciences, and programming. ■

KEY TAKEAWAYS

- Regional governments have identified blockchain as a key enabler and will take the lead in adoption.
- In October 2017, the UAE Government launched its UAE Strategy for Artificial Intelligence.
- In April 2018, the UAE Government launched its Emirates Blockchain Strategy 2021.
- This strategy aims to transform 50% of government transactions into the blockchain platform by 2021.
- Use cases of AI will appear in defense, terrorism, investigation, government intelligence, automated customer service, fraud analysis.

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HDD image is tentative and subject to change

VISUAL SECURITY STILL PART OF DAILY SECURITY ROUTINES

Physical enhancements on identity cards to verify authenticity have a role to play in these days of digital encryption explains Vincent Gourmelen at HID.



VINCENT GOURMELEN
ID Card Solutions Product Manager,
Citizen Identity Solutions, HID.

At a time of strong data encryption, on-chip biometry checks, digital signatures or national public key directories, one can question the necessity of adding advanced physical security features on a passport or an Identity card.

Reports show that even the most secure physical ID documents can still be subject to counterfeiting, particularly aspects of the material document, such as the cardholder's image or other personalised information. The reason for this is simple: not all law enforcement agencies and private sector companies are equipped with proper electronic devices and software to validate highly secure ID documents, such as national IDs.

The main challenges when checking a document without any device is the ability to do it:

QUICKLY

Border control officers have between 7 and 12 seconds to raise doubts on the document's authenticity.

EFFECTIVELY

A passport data page usually bears more than 20 security features, thus checking all of them is practically impossible. Selecting only a few to look at leaves the viability of that document still in question.

SIMPLY

Even if an on-card security feature is industrially perfect and impossible to reproduce identically, making that security feature too complex – such as is the case with the latest generation of holograms – can make it too difficult to verify in the field.

EXHAUSTIVELY

One needs to confirm that the document is genuine and has not been modified, particularly when it comes to the main portrait.

The need to authenticate a document in a fast and effective manner is paramount. The easiest and most predominant way to do this is still with the naked eye. However, since a physical document's attack will be most likely be to the cardholder's image, including other physical security elements that can be easily verified, will make it easier for border agents to authenticate someone's identity.

Some of the latest window-based, physical security measures include:

- Negative laser engraving
- Inlay window protection

- Bi-color metallic effect
- Customisable design
- Window seal

In combination these measures can effectively deliver the following:

PROTECT FROM COUNTERFEITERS

The combination with an inlay including a window protects documents against the most common types of attacks: backside grinding, re-laminating, punching and refilling, and so on. Moreover, the very specific visual effects present would be almost impossible to reproduce.

PROTECT PERSONALISED DATA

This is laser engraved with the cardholder's secondary portrait with a special ink that generates a bi-color metallic effect and depending on the angle, a watermark feature. This unique appearance and disappearance of the image is very difficult to replicate.

FAST WAY TO AUTHENTICATE

A border agent or government representative need only hold the card front and back, against a light to determine if the image has been altered in any way – all in less than 3 seconds. The industry is continually innovating to create new, high-security features that safeguard a citizen's identity. ■



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KEEPING CYBERSECURITY IN SYNC WITH BUSINESS TRANSFORMATION

Governments, businesses, vendors need to be aligned to ensure skill shortage challenges are minimised, writes Keiron Shepherd at F5 Networks.



KEIRON SHEPHERD
Senior Security Specialist,
F5 Networks.

Today's cybersecurity skills gap still needs urgent attention, and only a robust combination of investment, business resource, political will, and cultural change can make a difference. According to F5's most recent State of Application Delivery Report, 28% of surveyed EMEA customers cited the skills gap as a significant security challenge.

The deficit is especially pronounced when cloud technology is involved, as speed to market, agility, and innovation become fundamental business priorities. Those lacking in-house resources to handle data and application migration are under intense pressure, and today's cybersecurity talent pool is not large enough to satisfy the market. It is vital for firms to get better at identifying candidates, nurturing talent and assembling workforces equipped for future cybersecurity challenges.

Another key issue for businesses is the increasing use of artificial intelligence to underpin new generations of cognitive apps. Across EMEA, use-cases are entering the mainstream, including the health and financial sectors. This type of technology depends on allowing continuous access to a raft of personal data like biometrics, and context and location. Meanwhile, advances in wearables and embeddables are likely to bring intuitive interfaces and convenience, as well as new levels of privacy and security risks.

As technology advances, businesses must ensure they stay ahead of the cybersecurity game. This is particularly true following the introduction of the EU's General Data Protection Regulation, which gives European citizens unprecedented data protection and privacy rights.

As with all apps, businesses should employ a combination of on-premises and cloud-based security to protect against a range of threats. Data processed at the end of the network from devices, such as wearables, is constantly expanding the attack surface, so organisations must be rigorous to safeguard vital applications.

The threats are higher than ever before and critical industries such as utilities are becoming irresistible targets for ambitious cybercriminals. Hacker motives range from stealing data and crippling businesses to exploit citizens' data and cause reputation damage to organisations.

Moving ahead, government and industry must prioritise and collaborate to protect our infrastructure. A risk-based approach is essential. This includes collaborating with IT vendors and penetration testers to identify vulnerabilities open to exploitation and determine the appropriate mitigation methods. The margins for error are diminishing fast. More than ever before, consumers and citizens will only trust compliant, data-savvy organisations capable of running fast, smart, and safe applications.■

KEY TAKEAWAYS

- Businesses should employ a combination of on-premises and cloud-based security to protect against a range of threats.
- Government and industry must prioritise and collaborate to protect our infrastructure, a risk-based approach is essential.
- Another key issue for businesses is increasing use of artificial intelligence to underpin new generations of cognitive apps.

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FLEXIBILITY AND TECHNOLOGY KEY FOR TRANSFORMATION

Organisations that have flexible culture and manage technology are likely to be successful in digital transformation explains Terri Hiskey at Epicor.



*TERRI HISKEY,
Vice President, Manufacturing
Product Marketing, Epicor.*

You do not have to search far on LinkedIn before you come across phrases like – I am a results-driven go-getter, I thrive in a fast-paced environment, I am a best-of-breed strategic thinker, and I have a track-record for generating business growth. The list goes on.

But beyond the online show, a lot of people and the organisations that employ them, actually find business growth rather stressful. And that is the case even though many organisations are constantly looking to grow their businesses by expanding into new territories, developing new product lines, or boosting their profits.

According to Gideon Neiman and Marius Pretorius in their book *Managing Growth*, business growth puts a strain on resources. It often requires employees to work harder and faster, and needs managers to make quicker and more accurate decisions. Business growth also involves change—whether that is integrating new locations, new colleagues or new products into existing processes, and this too can make growth more challenging.

As part of its global growth survey, Epicor has looked in

more detail at the realities of business growth, in order to better understand how different organisations across the globe cope.

By surveying over 2,000 business professionals across the world, we found something that LinkedIn's online show of pride does not give away. While one-in-three business professionals find growth rewarding, two-in-five actually find it challenging, one-in-five finds it stressful and one-in-ten even finds it painful. Perhaps these things are easier to admit on an anonymous online survey than on a public LinkedIn profile page!

The realities of growth are therefore more complex than they may at first seem, with stresses and challenges playing a significant role in employee experiences as the businesses they work for develop. Nevertheless, with businesses generally feeling optimistic about their growth prospects, scoring an average 7.2 out of 10 for optimism, they must come to grips with these realities to make the growth process easier.

While a certain amount of stress can be stimulating, it can also be incapacitating for businesses or employees for whom it is not manageable. For example, in his work on stress in business, Jim Taylor, PhD from the University of San Francisco, explains that growth can put employees under psychological pressure to perform, and that in turn can give people more energy and endurance, sharpening their thinking and focus for the intellectual demands

38% QUESTIONED IN OUR STUDY BELIEVE
THAT BUSINESS GROWTH COULD BE LESS
STRESSFUL WITH BETTER LEADERSHIP.

47% OF BUSINESS PROFESSIONALS ACROSS THE GLOBE AGREE THAT TECHNOLOGY IS AN IMPORTANT FACTOR IN OVERCOMING THE CHALLENGES OF GROWTH.

they face.

However, as soon as demands begin to exceed capabilities and resources, business growth and the stress it brings, may become debilitating for workers and the businesses that employ them. Stress may be a by-product of growth, but businesses want to grow. So, what can they do to help make the journey easier?

Our research shows that businesses turn to a variety of methods to help them keep on top of the stresses and challenges they face while growing, and demonstrates that different members of the workforce have different opinions on how to make business growth a better experience. Not surprisingly, two-in-five 38% members of staff questioned in our study believe that business growth could be less stressful with better leadership.

On the flip side of this, 37% of directors and managers think that the challenges of growth can be largely overcome if employees worked more efficiently.

Across the board there is widespread recognition that implementing better technology is key to a business's ability to cope with the stresses and challenges presented by growth. Making use of the latest technology can help businesses work more efficiently, and even help them expand into new geographies, without having to make huge investments in staff and facilities.

Almost half 47% of business professionals across the globe agree that technology is an important

factor in overcoming the challenges of growth, with those that are in a position of power tending to feel even more strongly about this fact. 54% of CEOs and 52% of directors and managers believe that technology helps them overcome the stresses of growth. However, just 37% of staff who are less senior agree.

Technology change can moreover threaten the organisational culture of the workplace—it can change the work environment by transforming tasks and processes, and providing greater visibility of those tasks, something which will understandably make staff nervous if they do not feel they have a personal and professional stake in the changes being made.

Organisations that do choose to embrace digital transformation on their pathway to growth must therefore do this in a manner that will allow all members of the workforce to understand the reason for the business's investment, to overcome resistance from staff.

While it is certainly true that some business professionals do thrive under the pressure of growth, beyond the online rhetoric, and the year-on-year increase in output or profits, there is a deeper, more human experience of business growth too. While some find it rewarding, others find it challenging.

The most successful high growth organisations are those that have flexible systems, are able to constantly adapt to new and better business models, and are able to bring their staff onboard with changes along the way. Investing in technology is a good way to meet these three growth requirements and tackle the challenges of growth head on. ■

KEY TAKEAWAYS

- Organisations that choose to embrace transformation must do this in a manner that will allow members to understand the reason.
- The most successful high growth organisations are those that have flexible systems, able to constantly adapt.
- 54% of CEOs and 52% of directors and managers believe that technology helps them overcome the stresses of growth.
- 37% directors and managers think that the challenges of growth can be overcome if employees worked more efficiently.

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CONNECTED GROCER NEXT LINK IN SMART SUPPLY CHAIN

Adding connectivity into the neighborhood shop is a smart way to manage inventories and gives benefit to shopping experience says Jonathan Wood at Infor.



JONATHAN WOOD
General Manager, IMEA, Infor.

The grocery store is the last stop between the farm and our forks. The business of feeding the world is not easy. Although the grocery store commands the bulk of our retail spending — representing over a third of annual spend in some cases — the margins for grocers are tight. Grocers have the challenge of providing a necessary product which is often a commodity.

So, what is the local grocer to do? How does it ensure it can drive traffic and continue to capture revenue, while managing its razor-thin margins? More connectivity. As grocers become more connected, and not simply at the store level, new avenues for

revenue, cost control and customer experience opportunities will present themselves. Here is how:

CONNECTING TO THE NETWORK ALLOWS FOR CLARITY ACROSS THE SUPPLY CHAIN

Grocers of all kinds are looking to gain greater and more detailed insights into their supply chains. Where is product coming from? What are the steps each product takes to get to its final destination? What are the details of the suppliers that are part of the network?

Locally sourced, organic and sustainably made food is no longer just a trend — it is now the norm. Consumers want to know their food's journey from farm to fork, and they are willing to pay a premium for it. By using technologies like IoT and radio frequency ID, grocers will be able to better tag and track products at every point across the supply chain.

GREATER IN-STORE CONNECTIVITY MEANS BETTER INVENTORY MANAGEMENT

Store space is precious, and every square foot needs to be optimised to ensure profits. Store shelf allocation is an enigma that has haunted grocers since the dawn of time. What is the right mix? How can grocers ensure store shelves are always stocked? What product is misplaced?



AS HOME PRODUCTS ARE CONNECTED, REFRIGERATORS, THERMOMETER, SMART TRASH CAN, SMART FORK, KITCHENS ARE GETTING ON THE GRID.

KEY TAKEAWAYS

- With store connectivity and connected consumers, grocers can analyse what is happening within their stores.
- Grocers are using connectivity for cost-savings such as turning off lights in aisles when they are customer-free.
- When a brand puts its mini cooking station in a certain location, is that the optimal location?
- Store space is precious, and every square foot needs to be optimised to ensure profits.
- Store shelf allocation is an enigma that has haunted grocers since dawn of time.

What inventory is in the store room?

Once the physical stores add connectivity at the store shelf level, the back-storage room and even at the logistics points, grocers will start having a much more complete view of what is happening within their four walls.

Connected store shelves with connected inventory promises no more empty shelves. Vendors are looking to tie in their store shelves, backroom storage and even loading docks to paint a real-time view of inventory within the four walls of their stores.

NOT JUST INVENTORY MANAGEMENT, BETTER CUSTOMER EXPERIENCES

Once grocers have a better handle on their inventory and their store, they can be savvier about how to use that store and the space within. Can you make the bakery larger? What about putting in a bar for local brews? What about a cooking station?

With greater store connectivity, coupled with connected consumers, grocers can analyse and react to what is happening within their stores and make near-real-time changes to better meet customer expectations.

Grocers are already using greater connectivity to employ such simple cost-savings as turning off lights in aisles when they are customer-free. But when a brand puts its mini cooking station in a certain location, is that the optimal

location? Or should it look to move it around the store depending on traffic data it can ingest from connected cameras showing the heat chart of traffic?

SMARTER PRODUCTS, SMARTER USAGE AND INSIGHTS

Connectivity does not have to end at the cash register. What about pulling more information from connected products as they are being used and consumed in the home? Grocers, as well as their suppliers, yearn for greater insights into exactly how their products are actually being used. Yes, it is important to gather point-of-sale data of what is being sold, but how are those products then actually being used?

That is the key to providing the complete picture. As more home consumer products are connected — LG and Samsung refrigerators, Meater and its smart thermometer, GeniCan and the smart trash can, or even the Hapilabs smart fork — our kitchens are getting on the grid. Grocers can now aspire to get greater insights into how their products are being used, not simply that they were purchased.

Consumers will always look to grocers to provide the essentials for their daily lives. As more grocers look to enhance the way they serve us, as well as better manage their businesses, connectivity is one of those aspects that will play an important role. Think outside the grocery bag.

How can greater connectivity drive deeper into the consumer supply chain and further back into the supplier network? With so much competitive pressure coming from other grocers and startup food delivery services, now is the time to look to the supply chain for greater insights and better customer connections. ■



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FIVE STEPS TO PREVENT INSIDER THREAT ACTOR MOVEMENTS

Organisations must assume intruders can assume identity of an employee but must be prevented from lateral movement explains Morey Haber at BeyondTrust.



MOREY HABER
Chief Technology Officer,
BeyondTrust.

People are an organisations' most valuable resource. But they can also be its greatest vulnerability, especially when armed with weak credentials, all-too-powerful privileged accounts, and security ignorance or hubris. The problem is simple. Too many users have too much access. In fact, a recent survey we conducted revealed that 38% of organisations grant administration rights to their workforce by default, despite 79% saying it is a major security risk.

So, while most organisations focus ample security resources on controlling and protecting the boundaries of their networks, many pay inadequate attention to what is happening on the inside. Today's threats just burrow under or through perimeter defenses, exploiting key individuals and fault lines within an organisation to cripple the entire structure. To combat these, organisations must be able to monitor for suspicious behavior, take the destructive potential out of users' hands, and become Privilege Ready by adhering to five best practices.

REDUCE THE ATTACK SURFACE

The first step to Privilege Readiness entails ensuring that the system and application vulnerabilities that could open pathways into your environment are prioritised according to risk. Vulnerabilities should be patched regularly, and this process should be automated, if possible.

Enable whitelisting to ensure that the only applications running are those that come from a trusted source. Closing off these inroads reduces the attack surface, making it considerably more difficult for an outside attacker to gain that initial foothold that would enable them to become an insider.

PRINCIPLE OF LEAST PRIVILEGE

The second key piece of Privilege Readiness is to adopt the Principle of Least Privilege. Any end user or application should be granted the minimum possible privileges and rights they need to perform their role or function. While it might seem more efficient to grant users as much leeway as possible when working on the organisation's network, this proves to be unjustifiably risky in practice.

Least privilege does not only apply to those who use these accounts, but also to how and when the accounts are being used. Role-based access control is key to helping least privilege work as smoothly as possible. This ensures an optimal balance between access and security, while making the actual process seem invisible.

A tiering model for access, in which even administration accounts only have access to the rights they need, will also help. This will limit the size of those highly privileged targets, meaning that it will be that much harder for attackers to escalate

their capabilities when attempting to laterally move through your network. Administration accounts should be used separately from day-to-day, non-privileged accounts and only when a task requires their wide-ranging powers. This practice is referred to as privilege separation.

PROTECT PRIVILEGED ACCOUNTS

Your highly privileged and shared accounts must be discovered, grouped for easier management, monitored, and audited. Passwords must be strong, unique, and rotated regularly. Furthermore, when using work services, passwords should only be entered into approved devices that can ensure the security of those credentials.

Additionally, you should eliminate hard-coded, embedded credentials where possible and, if not, these credentials need to be watched closely in real-time. While passwords present an intrinsic weak link, a variety of solutions—multi-factor authentication, single sign-on, and biometrics—can bolster security and help prevent lateral movement within the network.

Enhanced authentication security should be applied for any Internet-facing service or high-risk account. You should strongly consider the use of automated password managers to cut down on the storage of passwords in plain text and embedded in the code, and to provide better enforcement around password security.

USER ACTIVITY AND CRITICAL RESOURCES

Regardless of how you manage privileged access, ensure that all privileged activity is logged and monitored. This entails implementing session recording and other technologies, which can be accomplished, to some extent, by setting up screen recording and other manual processes. However,

session reporting and management quickly becomes untenable in environments with hundreds or thousands of concurrent sessions.

Automated privileged session management and monitoring solutions can enable streamlined visibility and control over privileged access to servers, databases, and network devices, while capturing keystrokes, text, graphical screen output, and mouse movements.

To gain deeper visibility into risk, correlate the privileged user activity reporting against other behavioral metrics. This will help you spot risky users, compromised accounts, and abnormal access by flagging suspicious behavior in your environment. Auditing and reporting can also be automated against compliance objectives by highlighting directory changes that would threaten security or hamstringing compliance, giving you the clarity and detail demanded by regulatory regimes such as GDPR.

AUTOMATE WHEREVER POSSIBLE

While it is possible to forge a path to Privilege Readiness through manual processes and by accumulating and implementing multiple tools, nearly the entire pathway to Privilege Readiness can be automated. By applying automation throughout each step—from managing vulnerabilities and enforcing least privilege, to managing privileged accounts and conducting advanced threat analysis—you can vastly reduce your organisation's attack surface and become Privilege Ready.

You should always assume that an attacker with enough time and resources will eventually be successful. When that does happen, it is important to detect those breaches as soon as possible, stop lateral movement, and limit the damage the attacker can cause. Limiting privileges is sometimes seen as a hindrance to an efficient workflow, but it need not be. ■

KEY TAKEAWAYS

- While most organisations focus resources on protecting boundaries many pay inadequate attention to what is happening on the inside.
- By applying automation throughout each step, you can vastly reduce your organisation's attack surface.
- Always assume an attacker with enough time and resources will eventually be successful.
- It is important to detect breaches as soon as possible, stop lateral movement, and limit damage the attacker can cause.
- Limiting privileges is sometimes seen as a hindrance to an efficient workflow but it need not be.
- Regardless of how you manage privileged access, ensure all privileged activity is logged and monitored.



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LG Electronics invests \$90 million into US and Korean robotic startups in 12 months



LG Electronics' recent investment in US-based Bossa Nova Robotics marks the first overseas investment in a robotics partner by LG following a number of deals with Korean startups over the past year. In total, LG has committed over \$90 million to robotics startups in the first 12 months of its investment initiative.

Bossa Nova Robotics is the leading provider of real-time, on-shelf product data for the global retail industry which helps run large-scale retail stores efficiently by automating collection and analysis of on-shelf inventory data. Walmart, the world's largest retailer, has been testing Bossa Nova's shelf-scanning robots in a number of stores since last year.

The funding of Bossa Nova follows LG's investments in four other Korea-based robotics companies: Acryl, SG ROBOTICS, Robotis and Robostar.

Acryl, founded by a team of academics from the Korea Advanced Institute of Science and Technology

KAIST, is a 7-year-old cognitive computing company providing the integrated artificial intelligence platform called Jonathan which can recognise human emotions and meanings from text, speech and image based on big data and deep learning to realise real-life AI.

SG ROBOTICS is a start-up company that develops wearable

robots to assist people with mobility challenges, including paraplegics and neuromuscular disease patients. The company was founded in 2017 to deliver Robots For Better Life and is working on commercialising a wearable robot for children. SG ROBOTICS' WalkON Suit won a bronze medal in the first Cybathlon in 2016 and was the first torch bearer at the PyeongChang 2018 Paralympics.

Robotis specialises in robotic solutions and educational robots. It is recognised for its proprietary smart actuators used in multi-jointed robots and produces hardware such as controllers and sensor modules to robot programming software.

Robostar is a manufacturer of industry robots. Its mission is to be a one-stop solution provider for companies involved in industries such as mobile, display, automobile and semiconductor.

These investments complement LG's own efforts to bring service robots to market in the very near future to become a core growth engine for the company. LG has already deployed a number of robots in Korea for trial service, with its Guide Robot and Cleaning Robot dispatched to assist travelers at South Korea's largest airport during the winter games in PyeongChang.

Earlier this year at CES, LG introduced three new CLOi concept robots specifically developed for commercial use in high-traffic locations such as hotels and supermarkets. LG's CLOi robots are being developed in parallel to ThinQ products, LG's AI brand for consumer electronics and home appliances.

"Robotics, as a key component of our ThinQ AI strategy, is a critical future growth opportunity for LG," said Kim Sungwook, Vice President of the Global Open Innovation Division at LG Electronics. "LG is committed to expanding its robotics capabilities through investments in innovative partners as well as intense R and D efforts from within." ■

KEY TAKEAWAYS

- LG plans to bring service robots to market in near future to become a core growth engine.
- LG has deployed a number of robots in Korea for trial with Guide Robot and Cleaning Robot at South Korea's winter games airport.
- LG has introduced three new CLOi concept robots for commercial use in high-traffic locations.

Source Global Research ranks Accenture Strategy amongst top GCC consulting firms

Accenture has been ranked first across eight key service categories in the Gulf Cooperation Council Client Perception Study 2018, surpassing other top consulting firms in the region for the quality of its business strategy offering. Conducted by Source Global Research, the annual survey ranks the region's leading consulting firms based on client perceptions.

"We have worked hard to differentiate our offerings, particularly in the business strategy space, where clients benefit from data-driven insights that enable competitive agility and drive growth," said Alexis Lecanuet, Regional Managing Director of Accenture in the Middle East and Turkey.

For the study, Source Global Research surveyed senior executives, directors and senior managers in



ALEXIS LECANUET, Regional Managing Director of Accenture in the Middle East and Turkey.

the GCC responsible for buying substantial volumes of consulting services in the previous year to gauge how consulting firms stack up against their competitors in the eyes of current and prospective clients.

The respondents surveyed represent a wide range of industries and business functions, with more than two-thirds 68% of them working in organisations that generate more than \$500 million

in annual revenue. The study is also based on qualitative research from interviews carried out in 2017 and 2018 with senior buyers of consulting in the GCC.

In addition to ranking the highest in quality of its business strategy offering, Accenture was also recognised as:

- #1 for quality of its digital transformation services;
- #1 for overall quality of work in the GCC, according to prospects;
- #1 for quality of financial management services;
- #1 for quality of data & analytics services;
- #1 for value, according to respondents in an operations role;
- #1 for quality, according to respondents from the services industry; and
- #1 for quality, according to respondents in an IT role.

Cloud vendors ServiceNow, Box tie up to integrate digital workplace and collaboration

ServiceNow and Box, two industry-leading cloud services companies that drive digital transformation for enterprises across industries, announced they are integrating their platforms to provide customers with an enhanced collaboration and content management experience for their most important business processes.

The two companies are boosting productivity for workers, making it easier to securely collaborate on their most important content and make work, work better for people. The new capabilities

give employees direct access to important documents and folders stored and managed in Box's cloud content management platform, directly from the Now Platform, which helps companies deliver great employee experiences through the easy management of business processes across the enterprise, including IT, HR, customer service and security.

"Today's employees expect great digital experiences, at home and at work. That means it is more important than ever for companies competing in the war for talent to embrace technology that makes

the employee experience simpler, faster, better," said CJ Desai, Chief Product officer at ServiceNow.

"The integration of Box with our cross-company workflow platform gives employees what they need, where and when they need it and is an important step in our mission to make the world of work, work better for people."

ServiceNow developed the Box integration with ServiceNow's IntegrationHub, which enables anyone to automate complex processes with codeless workflows in an intuitive, natural language user interface. ■

Dubai Paperless Strategy, Expo 2020 Update, presented at CIOMajlis annual conference

In its 2018 edition, CIOMajlis Annual Conference explored the Fourth Industrial Revolution and the vital role the UAE will play in it. Keeping sustainability and practical innovation at its core, the conference welcomed notable speakers from both the government and private sector.

“We are delighted to be celebrating the second edition of CIOMajlis’ annual conference. These events are an inspirational hive of the UAE’s leading minds and opinion formers, and we are honored to bear witness to their personal philosophies and strategies for success”, said Ahmad Al Mulla, CEO of CIOMajlis.

The conference, a combination of insightful presentations and thought-provoking panel sessions, featured the following speakers and messages.

MCKINSEY AND COMPANY

In the past two years, humans have generated 90% more data than they have since the Stone Age. Everything from education to the way society functions is being deeply influenced by technology. The 4th Industrial Revolution has caused three major paradigm shifts – phenomenal data generation, the subsequent transformation of data into intelligence and flexible automation. This talk was delivered by Vinay Chandran of McKinsey and Company.

DUBAI PAPERLESS STRATEGY

Dubai Paperless Strategy, a goal that Smart Dubai is committed to achieve by 2021, aims to thrust



(Left to right) Abdulqader Ali, CEO of Smartworld; Ahmad Al Mulla, Chairman of CIOMajlis; Dr Saeed Al Dhaheri, Chairman of Smartworld.

Dubai into a smarter and greener future. Not only will the strategy impact the environment, it will also have a significant effect on citizen happiness and the economy.

After calculating the potential of going paperless, Smart Dubai has involved entities like the RTA, Dubai Police and DEWA in this initiative. Smart Dubai’s speaker revealed that going completely paperless will save one billion papers annually – as a result, saving 130,000 trees. The talk was delivered by Moza Suwaidan of Smart Dubai.

PANEL DISCUSSIONS

Innovation in action within the government sector involving speakers from the Ajman Municipality and Planning Department, The Executive Council, Government of Dubai and Abu Dhabi Department of Culture and Tourism. The panel was moderated by Dr

Saeed Al Dhaheri, Chairman of Smartworld.

Digital Technology in the heart of contemporary education involving speakers from Ajman University, Rochester Institute of Technology and Dubai University. The panel was moderated by Ahmed Al Ahmed, CIO of Nakheel.

Skillset in the technology industry involving speakers from HSBC MENAT, Etihad Airways and Grape Technology. The panel was moderated by Maisam Zaidi, CIO of ALEC.

Governance in the digital era involving speakers from the Engineering Office, Emirates Flight Catering and the Abu Dhabi Transmission and Dispatch Company. The panel was moderated by Ajay Rath, CIO of Meraas Holding.

The conference’s overarching theme stressed on the importance of flexibility, upskilling and business agility as a survival tool in the 4th Industrial Revolution. ■

Epson invites EMEAR to participate in SCARA robotics innovation through contest



Industry 4.0 is a reality, and Epson, a global market vendor in SCARA robots and provider of automation solutions since 1980, is ready to lead the change. As automation continues to expand, many new and innovative applications for robots are being developed. Revolutionising industry and other sectors, they have the potential to radically improve the quality of our working lives.

Epson is placing the latest technology in the hands of the future: universities, colleges and research institutions across EMEAR. Why are we choosing education and research institutions? To support the growth, development and competitiveness of industry and automation.

Applicants are invited to submit a proposal before 15th December 2018 for the opportunity to win up to 3 Epson robots to support their project.

Applications will be judged on a set of criteria including innovation, education, skills development, unique robot usage and sustainability.

Shortlisted applicants will be

invited to present their application in front of a panel of judges

“Skills and creativity are at the heart of innovation. Epson recognises the need to promote and support talent and skills development. Millennials, who make up 50% of the world’s population, will face a radically different working world to now. We know that young people have the potential, so our competition is designed to place the technology of the future in their hands,” says



Jason Whiley, Director of Sales, Epson Middle East.

The number of industrial robots deployed worldwide is expected to increase to around 2.6 million units by 2019. Across Central and Eastern Europe especially, robot adoption is set to grow by up to 20% year-on-year over the next two years, the highest growth rate globally after China.

This growth places robotics as central to the future of manufacturing, healthcare, and many other sectors. Robots can also help in training, waste reduction and reducing energy consumption. Epson is providing an opportunity for young people in EMEAR to imagine a better world with robots. ■

KEY TAKEAWAYS

- The number of industrial robots deployed worldwide will reach around 2.6 million units by 2019.
- Across Central and Eastern Europe, robot adoption is set to grow by up to 20% YoY over the next two years, highest rate globally after China.
- Epson is a global market vendor in SCARA robots.
- Robotics is central to the future of manufacturing, healthcare.
- Robots can help in training, waste reduction and reducing energy consumption.
- Epson is providing an opportunity for young people in EMEAR to imagine a better world with robots.

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Dell EMC to boost localisation of artificial intelligence, targets 500 UAE students



His Excellency Omar Sultan Al Olama, Minister of State for Artificial Intelligence, emphasised on the importance of providing opportunities for Emirati youth and encouraging them to develop new skillsets associated with artificial intelligence technologies.

HE Omar Sultan Al Olama's statement came on the back of signing a strategic partnership agreement with Mohammed Amin, Senior Vice President, Middle East, Turkey and Africa at Dell EMC. According to the agreement, Dell EMC will train 500 Emirati students under a specialised artificial intelligence programme, supervised by an executive team.

"The agreement aims to develop the skills of Emirati youth in artificial intelligence technology, and offer graduates an opportunity to shape the future and manage artificial intelligence processes. This move complements our plans to provide development opportunities to students in schools and universities through

other initiatives such as the UAE artificial intelligence Summer Camp," said Al Olama.

This agreement aims at bridging the skills gap in the technology sector and supporting the youth in unlocking their potential to meet the challenges of the future in this rapidly evolving economy.

KEY TAKEAWAYS

- Dell EMC will train 500 Emirati students under a specialised artificial intelligence programme, supervised by an executive team.
- This agreement aims at bridging the skills gap in the technology sector and supporting the youth.
- Dell EMC will help in improving efficiency of government organisations by 80%, and achieve cost reduction of up to 45%.

Dell EMC will help these next generation of IT professionals play a pivotal role in improving the efficiency of government organisations by 80%, and achieve a cost reduction of up to 45%, equivalent to millions of dollars.

This agreement supports the objectives of the UAE Strategy for Artificial Intelligence, by enabling and empowering young Emiratis to develop their skills in technology in collaboration with a number of leading private sector organisations.

The programme is scheduled to run for 3 years with the participation of 120 students each year. Dell EMC will select 10 students who will be offered 5-day intensive training to obtain a diploma in Data Engineering and Cloud.

Earlier this year, Dell EMC had organised a training programme in IoT and Digital Transformation in the UAE. The programme was the first of its kind in Europe, Middle East and Africa. Designed as an advanced training camp, the two-day programme was introduced at the UAE University in Al Ain. It focused on IoT applications, as well as important aspects of digital transformation, paving the way for refining the skills of future data experts.

Dell EMC also recently held its annual Envision the Future competition, providing an ideal opportunity for senior undergraduate students from across universities in Middle East, Turkey and Africa to showcase the knowledge acquired through the Dell EMC Academic Alliance programme and solve technology challenges of the present and the future.

The second year witnessed participation by over 880 students. The competition continues to inspire and spark the creativity of students and enables them to create projects supported by advanced technologies instrumental in driving digital transformation. ■

Schneider Electric adds additional reporting to EcoStruxure Resource Advisor



Energy and sustainability expert Schneider Electric announced new external reporting features in the company's cloud-based enterprise software platform EcoStruxure Resource Advisor. The updates will enable organisations to turn sustainability disclosure into an ongoing process and better use data collected throughout the year, reducing the stress and associated expense of reporting season.

Resource Advisor, which supports more than 4,500 clients in over 300,000 sites globally, lets organisations track and manage sustainability programs on one centralised platform, increasing the speed and accuracy of data collection and reporting. The software currently analyses more than 400 different data streams across economic, environmental and social indicators. It is also used to expand companies' sustainability strategies into the supply chain.

The new features in Resource Advisor automate reporting end-to-end, including data validation, internal collaboration, task management and quality control. Sustainability teams now have access to a library of templates for reporting frameworks, such

KEY TAKEAWAYS

- EcoStruxure Resource Advisor is part of the Schneider Electric IoT-enabled system architecture and portfolio.
- Schneider Electric helps clients navigate the entire sustainability reporting process.
- New features in Resource Advisor automate reporting end-to-end, data validation, internal collaboration, task management, quality control.

as CDP, GRESB and GRI, and can map data to multiple frameworks that require similar information. The software also helps pinpoint areas for future improvements, providing continual insight into progress toward organisational commitments.

Schneider Electric helps clients navigate the entire sustainability reporting process — determining the right framework to meet organisational goals, implementing productivity tools, and analysing and verifying sustainability data. The company's experts work across industries and geographies to turn information into actionable improvements to extract additional value, improve transparency in operations and build trust among stakeholders.

Leveraging the power of Resource Advisor, sustainability, finance and energy teams can collaborate, identify inefficiencies and drive performance using a common, clean data set.

EcoStruxure Resource Advisor is part of the Schneider Electric IoT-enabled system architecture and portfolio. EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability and connectivity for our customers. It leverages advancements in IoT, mobility, sensing, cloud, analytics and cybersecurity to deliver Innovation at Every Level.

"Companies are under increasing pressure from customers and investors to improve transparency on environmental and sustainability performance," said Steve Wilhite, Senior Vice President of Energy and Sustainability Services, Schneider Electric. "These enhancements will allow sustainability teams to take their reporting to the next level, and free up valuable time to focus on projects and initiatives that move the needle and help meet targets." ■

72% EMEA organisations experience AI benefits in agent time, volume tasks, support

Companies across EMEA are deploying artificial intelligence technologies to revolutionise customer service as more and more consumers show high acceptance of artificial intelligence-driven experiences, reveals a new research report from ServiceNow.

The artificial intelligence revolution: creating a new customer service paradigm, explores how artificial intelligence is driving a new revolution in service delivery, drawing on research carried out with 770 IT professionals responsible for the customer service function in 10 EMEA countries.

It reveals that nearly 30% of EMEA organisations have introduced artificial intelligence technologies to customer service and 72% of those are already seeing benefits that include freeing up agent time, more efficient processing of high-volume tasks and providing always-on customer support.

According to survey respondents, providing service and support 24x7 is their number one customer service challenge. Customers are being offered multiple service channels, but they expect responses at any time of the day —



PAUL HARDY, Chief Innovation Officer EMEA, ServiceNow.

and this is pushing organisations to breaking point:

- 50% organisations are not available to respond to customer enquiries 24x7.
- 40% organisations say they struggle to meet rising expectations of customer service.
- 37% are challenged to answer repetitive questions in an efficient way.

Artificial intelligence will allow organisations to move beyond handling more queries more efficiently, to anticipating and acting on customer needs:

- 59% organisations will extend the range of queries that virtual

customer assistants VCAs and chatbots handle.

- 47% say artificial intelligence will enable the customer service operation to become more efficient.
- 37% say artificial intelligence can be used to provide a higher level of service.

A powerful development is the ability of artificial intelligence to help transform high-stress moments into positive experiences for customers that build loyalty.

For example, in the case of a flight cancellation, artificial intelligence can detect the customer starting a live chat and indicate it is likely to be due to the cancellation. It can then immediately escalate the interaction to a human agent to arrange an alternative and deliver a superior service.

While the adoption of artificial intelligence will increase, these technologies will only serve to augment the role of the human agent at the front line of delivering wow customer experiences:

- 37% organisations say artificial intelligence can be used to provide a higher level of service, with similar levels of employment.
- 29% of organisations using artificial intelligence-based technology are aware of the need for upskilling customer service managers.

“The majority of organisations are offering omnichannel experiences to customers, but many are struggling to keep up with increasing consumer demand for service across these channels,” said Paul Hardy, Chief Innovation Officer EMEA, ServiceNow.

ServiceNow and Devoteam commissioned research company Loudhouse to survey 1,082 senior IT professionals from 11 countries who are involved in the customer service function. ■

KEY TAKEAWAYS

- 30% of EMEA organisations have introduced artificial intelligence technologies to customer service
- 72% are already seeing benefits that include freeing up agent time, efficient processing of high-volume tasks, always-on customer support.
- Providing service and support 24x7 is number one customer service challenge.

Rethinking Segr

WannaCry. NotPetya. SamSam. It's not a question of *if* your network will be breached, but *when*. Of course you take all the usual protective measures: antivirus, intrusion prevention, firewalls, etc. But the best thing you can do to mitigate the risk is to segment your network.

With segmentation, you logically separate your network into secure zones, each of which is compartmentalized and isolated from all others. For example, the server on which your all-important intellectual property (IP) is stored can be placed in one segment, and the part of the network your security cameras are attached to can be another segment. There's a wall between the two.

The benefit of this? If—or rather, when—a device like a security camera is hacked, what goes on in that segment stays in that segment. Containing the malware or cybercriminal to just one localized portion of the network minimizes potential damage. Your IP stays safe.

Not incidentally, segmentation also guards against insider threats because sensitive data and systems can be isolated from “curious” employees attempting to venture where they don't belong.

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mentation



Win the compliance game

Segmentation also helps you more efficiently comply with regulations that otherwise can be burdensome—and costly if you fail the audits. Take the PCI Data Security Standard (PCI-DSS). Adhering to PCI-DSS means protecting the entire cardholder data lifecycle as it flows to and from payment devices, applications, infrastructure and customers.

This is so difficult that only 52.5 percent of businesses surveyed in 2017 were fully compliant with their annual PCI-DSS audit, according to the Verizon 2018 Payment Security Report.

Segmentation can reduce the areas of your network that come under audit and thereby increases your odds of being compliant.

Why segmentation hasn't caught on—yet

Segmentation isn't new. Traditional methods for segmenting networks such as virtual local area networks (VLANs) and access control lists have been around for decades.

But most segmentation projects never get off the ground. They're too complex and labor intensive given the heterogeneous nature of most enterprise network environments, and have traditionally required learning multiple tools from different vendors. The fact that most of these environments are now distributed across data centers, campuses and the cloud doesn't help.

Then there's the potential to disrupt your business. How do you write business policies so precisely that each of your employees has access to the exact network resources they need to do their jobs—but no more? You don't want to prevent a senior engineer from meeting a critical deadline because the data she needs is on the other side of a segment wall. Neither do you want her wandering freely through sensitive HR data.

The biggest challenge in segmentation is that you don't really know your network. You don't have sufficient context to build intelligent policies.

But the bottom line is, if you can't answer simple questions about what's connected to your network, you can't hope to protect your business.

Segmentation—do it right with ForeScout

ForeScout is focused on making segmentation an attainable reality for businesses.

Deploy the ForeScout platform, and you immediately know what's connected to your network.

Everything. PCs. Servers. Printers. Internet of Things (IoT) devices like medical equipment and lighting systems. Operational technology like manufacturing equipment. The instant something—anything—attaches to your network, you know about it. No manual scans or software agents required.

Because we're vendor agnostic, we work across heterogeneous environments and legacy networks and with other technologies such as next-generation firewalls (NGFWs.)

Then, we work hand-in-hand with your current solutions to automate your defenses.

ForeScout: Transforming security through visibility™

Visibility is foundational to segmentation. It's non-negotiable. You can't protect what you can't see.

ForeScout addresses the barriers to effective segmentation: complexity, high cost, vendor lock-in, and, most importantly, lack of device transparency. With ForeScout, segmentation is a security strategy that is now achievable.



Pedro Abreu
Chief Strategy Officer

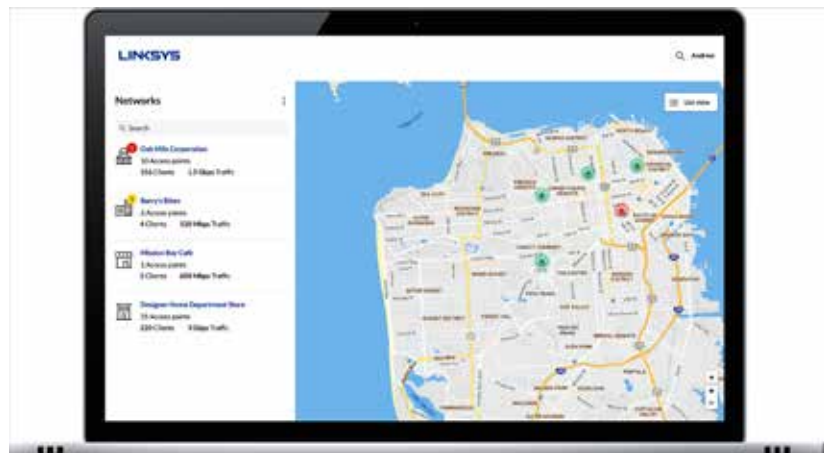
ForeScout Technologies, Inc.

Wireless as a service possible through Linksys Cloud Manager global dashboard

Linksys announced Middle East regional launch of Linksys Cloud Manager, a cloud-hosted WiFi Management Platform purpose-built for small business environments that reduces costs and increases operational efficiencies. The solution offers centralised visibility, management and control of a wireless network without cost and complexity of traditional hardware controllers, overlay software, or annual hosting costs.

Being a Middle East first solution, Linksys Cloud Manager enables IT administrators and other authorised users to remotely monitor, manage and troubleshoot single or distributed wireless networks in real time via a single dashboard and sign-on.

This plug-n-play platform helps provide secure remote access to Linksys Business Wireless-AC



Access Points, which are built with enterprise-grade, high-performance hardware, and is competitively priced with no licensing or maintenance fees for five years. The included cloud license fits any budget and provides a complete solution for IT solutions providers and their SMB customers.

Linksys Cloud Manager is a solution for resellers and IT solutions providers looking to develop a managed service model and generate recurring revenue. For those who already are, it's a compelling alternative to pricier cloud solutions and will help round out their product portfolio to address customers with smaller IT budgets.

Limited resources, constrained spending budgets, and the proliferation of devices and IoT are further complicating wireless networks, and as a result, driving SMBs to move toward network managed services where an IT partner is responsible for the network on an ongoing basis. The migration to cloud-based applications and everything-as-a-service presents a big growth opportunity in the SMB space for IT channel providers.

Linksys Cloud Manager is pre-installed on select Linksys Business Wireless-AC Access Points, which plan to be available in October 2018.

"There is a gap in the Middle East market for affordable, business-grade cloud managed WiFi management platforms designed specifically for SMBs," said Amanulla Khan, Managing Director Linksys Middle East, Turkey and Africa.

"Current offerings are either built with consumer-grade hardware or with expensive, enterprise features with prohibitive annual hosting fees. A common complaint is enterprise offerings are complex and over-engineered with features and functionality beyond the usual requirements of a small business network."

"Linksys places high importance on being partner-centric and meeting their needs with competitive solutions and programs. Linksys Cloud Manager was designed by truly listening to our regional channel partners' business goals and challenges, and it addresses a gap where current cloud WiFi platforms fall short," continued Khan. ■

KEY TAKEAWAYS

- Linksys Cloud Manager enables administrators to monitor, manage, troubleshoot wireless networks in real time via a single dashboard.
- This platform helps provide secure remote access to Linksys Business Wireless-AC Access Points, built with enterprise-grade hardware.
- It is competitively priced with no licensing or maintenance fees for five years.
- Cloud license fits any budget and provides a solution for IT providers and their SMB customers.

Tata Communication positions in IoT through acquisition of Netherland's Teleena

Tata Communications, a global digital infrastructure provider, is acquiring Teleena, a Netherlands-based Internet of Things connectivity specialist and mobile virtual network enabler. The company's technology reduces the operational complexity and cost of mobility and IoT deployments for businesses.

Teleena's solution is a key part of the Tata Communications' MOVE platform, which enables enterprises and device manufacturers to capture, move and manage information worldwide through borderless, secure and scalable connectivity. The acquisition is an investment in technology and talent to complement Tata Communications' growth strategy in the global mobility and IoT market.

It gives the company full access to Teleena's technology portfolio, including its MVNE platform, its Operational Support System, Business Support System solution, and the expertise of Teleena's mobility and IoT industry specialists.

Teleena's customers will now transition to become Tata Communications' customers, and all Teleena employees will become Tata Communications' employees.

"The growth rate in the global mobility and IoT market is phenomenal: by 2021, enterprises' spending on mobility alone is set to surpass \$1.7 trillion," said Anthony Bartolo, Chief Product Officer, Tata Communications. "Our vision is to create an environment where anything can be born connected. Providing everyone and everything in the



world with seamless connectivity globally will support businesses' digital transformation. The combination of the Tata Communications MOVE platform, and Teleena's technology and talent, will help us fulfil this vision, and accelerate our growth in the mobility and IoT market."

Since its launch in February 2017, the Tata Communications MOVE platform has been adopted by businesses worldwide to introduce a range of innovative mobile and IoT services. These businesses include children's smartwatch makers Omate and Doki Technologies, new mobile network virtual operators (MVNO) like Singapore-based MyRepublic, and the smart logistics company W-Locate.

"I am excited about this next stage on our 10-year journey, because just like Teleena, Tata Communications is fast-moving, ambitious and focused on innovation," said Kim Bybjerg, CEO of Teleena. "I look forward to working with Anthony and his team to help Tata Communications' customers make the most of the transformational

potential of IoT and mobility, and support the company's mission to become one of the leading players in this industry."

This acquisition follows Tata Communications' investment in Teleena in January 2017, when the company became the single largest shareholder in Teleena with a 35% stake. ■

KEY TAKEAWAYS

- Teleena's solution is a key part of the Tata Communications' MOVE platform.
- The acquisition is an investment in technology and talent to complement Tata Communications' growth strategy.
- Tata Communications gets access to Teleena's MVNE platform, Operational Support System, Business Support System, mobility, IoT specialists.
- Teleena employees will become Tata Communications' employees.

Arab Medical Centre selects Infor cloud to transform procurement and equipment maintenance



Infor, a provider of industry-specific cloud applications, announced that Arab Medical Centre, a referral hospital for patients in the Middle East and internationally, has selected Infor CloudSuite Financials and Supply Management and Infor Enterprise Asset Management to streamline its business operations and increase efficiency to improve patient care. The implementation is expected to go live in December 2018.

Arab Medical Centre has been running custom-built solutions for a number of years but struggled to integrate different systems, preventing them from having a single version of the truth which in turn inhibited them from providing better service to their patients.

Infor CloudSuite Financials and Supply Management is a cloud-based integrated solution suite which couples modern financial functionality with tools to track supplies and streamline order processes. It is designed to help Arab Medical Centre gain greater visibility into supplies and can more effectively manage and distribute inventory as orders are automated and tracked in real time.

With Infor, Arab Medical Centre will help transform its finance and procurement operations, streamline and standardise payable and receivable processes, and take advantage of a modernised technology platform that is optimised for growth.

Infor CloudSuite Financials is built on Infor's Xi technology platform and features cloud computing architecture, open source software, and in-memory computing technology, delivering high performance, support for open standards, enhanced productivity, responsive design, and mobile access via a wide range of devices – all without complex customisations.

Infor EAM has been chosen to help Arab Medical Centre support its assets by providing deeper and more timely insights to facilitate tailored maintenance planning for its medical equipment and Arab Medical Centre's facilities. Assets are at the heart of Arab Medical Centre's business, looking at how it can improve the customer service it offers, whilst ensuring it operates as efficiently as possible without interrupting their business operations.

Infor EAM will help provide best practices in asset management, and detailed insights into medical equipment performance to improve decision-making whilst ensuring that their lifespan and performance is maximised to full potential.

"Infor is allowing us to bring true transformation to financial operations and our supply chain at Arab Medical Centre," said Fadi Al-Shammaa, CEO, Arab Medical Centre. "The integrated solution means that we can seamlessly manage our back-office operations and the scalability of Infor's solutions ensures that we are able to meet future growth and fulfill our mission."

Arab Medical Centre provides a full range of medical and surgical services covering all specialties. The Emergency Department has dedicated rooms for pediatric cases and those with communicable diseases. The department treats an average of 200 patients per day. ■

KEY TAKEAWAYS

- Arab Medical Centre will transform its finance and procurement operations, payable and receivable processes.
- Infor CloudSuite Financials and Supply Management couples modern financial functionality with tools to track supplies.
- Infor CloudSuite Financials is designed to gain visibility into supplies and manage inventory as orders are automated and tracked in real time.

CESI, Wipro activate smart electricity and water readings for Oman's Nama Group

Nama Group has announced the commencement of the live operation of their centrally implemented Automatic Metre Reading project designed for high value customers in the electricity sector in Oman.

The ground-breaking project was carried out by a professional team of Omani experts from the electricity distribution companies in Nama Group in partnership with CESI Middle East, a subsidiary of CESI, a technical consulting and engineering company and Wipro as the system integrator.

The Automatic Metre Reading system is a central standard smart metreing system that will enable electricity companies to obtain accurate, hourly metre readings from high value customers and collect their consumption in an automated manner.

CESI has been supporting the project since its inception in 2015, and the company's role has been to manage the project activities to ensure the efficient coordination and delivery of several contractors, service providers and manufacturers involved in the project's extensive implementation.

The Italy-based company has been present in Oman since 2012 working on a number of consultancy undertakings including the development of hybrid diesel, solar PV generation projects; assessing technical and economic feasibility of hybrid generation projects for power stations for RAECO; the development of standards for installation and implementation of solar PV panels for the Authority for Electricity Regulation in Oman, and inspections of small scale solar installations on school rooftops for Shell Development Oman.



(Left to right) Dr Mansoor Al Hinai, Nama's VP Distribution; Eng Omar Al Wahaibi, Nama Group CEO; and Flemming Christensen MScEE; MBA, Project Manager AMR CESI Middle East.

CESI is a technical consulting and engineering company with more than 60 years of experience operating in more than 40 countries around the world providing testing and certification services to the electromechanical industry as well as consulting and engineering services to the energy sector.

Furthermore, CESI works in close cooperation with international financial institutions such as, among others, the World Bank Group, the European Bank for Reconstruction and Development, the European Investment Bank, the Inter-American Development Bank, the Asian Development Bank and the Arab Fund.

CESI consultancy services have supported remote metre readings of more than 50 million metre points world-wide. CESI provides testing and certification services as well as consulting and engineering services. CESI also develops and manufactures advanced solar cells, III-V triple junction GaAs for space and terrestrial application CPV.

Nama Group consists of eleven joint stock companies registered

in the Sultanate of Oman. These companies were created as a result of restructuring of the electricity sector and its related water services in 2004 and commenced commercial operations on 1 May 2005. In 2014 NH launched its Nama Institute for Competency Development NICD which aims to develop competences in the utility sector. ■

KEY TAKEAWAYS

- Automatic Metre Reading system is a central smart metreing system that will enable electricity companies to obtain accurate metre readings.
- Nama Group consists of eleven joint stock companies registered in the Sultanate of Oman.
- CESI consultancy services have supported remote metre readings of more than 50 million-metre points world-wide..

Cisco, Smart World build intent network to support 100,000 IoT devices at Expo 2020



(Left to right) Abdulqader Ali, CEO Smartworld; Mohammed Al Hashimi, SVP Innovation and Future Technology, Expo 2020, Dubai; Shukri Eid, Managing Director East Region, Cisco Middle East.

Cisco, the Official Digital Network Partner of Expo 2020 Dubai, has announced that it is collaborating with Smartworld, a Cisco partner in the UAE, to design and implement a smart network infrastructure for the first World Expo to be held in the Middle East, Africa and South Asia MEASA region.

Under the theme “Connecting Minds, Creating the Future”, Expo 2020 Dubai aims to offer a glimpse into the future, guided by the belief that innovation and progress are the result of people and ideas coming together in new and unique ways. Open from 20 October 2020 to 10 April 2021, Expo 2020 is expected to welcome 25 million visits, with 70% to come from outside the UAE.

Cisco is working with Smartworld to deploy parts of Expo’s digital IP network infrastructure, including Cisco intent-based networking

solutions. As a Cisco Premier Partner, Smart Technology Services, Smartworld has skilled resources and expertise to build an intelligent and secure network for Expo 2020.

KEY TAKEAWAYS

- Smartworld has skilled resources and expertise to build an intelligent and secure network for Expo 2020.
- Cisco’s intent-based networking portfolio represents a fundamental shift away from manual methods by which networks are traditionally managed.
- Designed for demands of the digital era, intent-based networks capture and translate business intent into network policies.

These solutions will support the digital experience offered at Expo 2020, helping visitors, participants and businesses connect from anywhere on the 4.38 sqkm site, on any device – securely, reliably and seamlessly. The network is also designed to support over 100,000 IoT devices during Expo.

Cisco’s intent-based networking portfolio represents a fundamental shift away from the manual and time-intensive methods by which networks are traditionally managed. Designed for the demands of the digital era, intent-based networks capture and translate business intent into network policies, and activate them across the infrastructure. They anticipate operational issues, stop security threats in their tracks, and continue to learn, adapt and protect.

“Being a semi-government, master systems integrator, Smartworld is committed to working with Cisco to help Expo 2020 deliver a global event enabled by the latest technology, in alignment with Expo’s theme Connecting Minds, Creating the Future”, added Abdulqader Ali, CEO of Smartworld.

In April this year, Expo 2020 Dubai announced Cisco as Digital Network Partner. Cisco will provide its latest technology innovations that enable the exploration of new possibilities and connections for a sustainable, inclusive future.

Mohammed Alhashmi, Senior Vice President, Innovation and Future Technology at Expo 2020 Dubai, said, “An innovative and seamless digital infrastructure is essential for a successful Expo 2020. We are delighted at the progress being made by our partner, Cisco, in collaboration with Smartworld, and we are confident that the smart technology deployed at Expo 2020 will wow visitors from all over the world.” ■



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AUTOMATING TRADE FINANCING IN THE REGION USING BLOCKCHAIN

The cumbersome process of trade financing can be made more efficient and automated by using blockchain technologies connecting importers, exporters, shippers, banks and border authorities.

Trade finance is the financing of international trade flows. It has been created to reduce the risks involved in an international trade transaction between the two parties, that is the exporter and the importers. In its simplest form, an exporter requires an importer to prepay for the goods being shipped. The importer requires that the exporter respect the order and ship the goods after the payment has been assured.

As trade takes place across borders, between companies unfamiliar with each other, trade finance settles the conflicting needs of exporters and importers. It addresses key risks associated with trade such as payment risk, that is will the importer default on payment or face bankruptcy, and country risk, the political and economic risks associated with the country of export.

The Asia Pacific region accounted for 47% global trade finance transactions in 2017, valued at \$2.1 trillion. Meanwhile, the MENA region with 11% of all transactions has the world's second-highest trade finance rejection rate – 18% due to the risk profile of clients and quality of applications. John Iossifidis, CEO of Noor Bank, points out that, “Despite trade wars and the renegotiation of long standing agreements, trade finance remains a major driver of cross-border business operations.”

According to Rahul Jayakar, GTS Trade Head, Corporate Banking, Noor Bank, the generic pain points for trade across UAE and the wider region are linked to a reluctance to provide information, poor financials and payment terms not being met. Transparency and trade go hand in hand. Trade cannot proceed without full disclosure and supporting documentation. Many clients in the region find it convenient to avail term finance to circumvent the need for disclosure.

Trade finance is a network where buyer, seller, issuing bank, presenting bank, regulatory bodies, customs, shippers, insurers and surveyors are involved in a trade.



JOHN IOSSIFIDIS
CEO of Noor Bank.

Hence lack of transparency and information is a major deterrent.

Global requirements under trade transactions make it mandatory to have invoices, shipping documents and inspection and goods origin certificates. Trade generates 8 billion sheets of paper annually, this clearly proves that trade is document heavy. Also, coordination between various parties issuing these documents is a challenge.

For the seller, usually the exporter, they have to ensure these documents are coordinated and aggregated suitably and on time, to demonstrate performance under the sales contract. This puts pressure on them since it is a manual activity, it is documentation intensive, and it time consuming.

ENABLING TRADE FINANCING

There are a number of options to boost and promote international trade. A Letter of Credit is a commitment to pay issued by the importer's bank. The bank provides a letter of credit to the exporter – or the exporter's bank – providing for payment once shipping documents or the bill of lading are presented.

The exporter's bank may also provide financing or advance payment to the exporter, while waiting for payment to be made by the importer, to speed-up the transaction. The financing extended will be recovered once the importer's payment is received by the exporter's bank.

Islamic finance uses the murabaha structure to issue Letter of Credits to facilitate trade transactions. In the murabaha structure, the bank purchases the goods from the exporter on behalf of the importer, and then resells the goods to the importer with a profit margin on a deferred payment basis. Payments on a deferred basis can be made to the bank in installments or in one lump sum.

In practice, murabaha Letter of Credits operate in the same way as standard Letter of Credits. Repayment tenors can be tailored to an importer's working capital requirements. As with conventional banks, Islamic banks offer a full-range of trade finance services, including documentary collections and advance payment to suppliers.

Blockchain has the ability to connect all participants in a trade and create consensus between different members and ensure validation.



RAHUL JAYAKAR
GTS Trade Head, Corporate Banking,
Noor Bank

They will however refrain from financing trade transactions involving prohibited goods alcoholic beverages, weaponry.

Trade finance has shifted away from letters of credit to more streamlined approaches with Supply Chain Finance, which accounts for an estimated 80% of global trade transactions and is used by both large and small corporates. As they become more comfortable with their buyer and supplier relationships, businesses conduct trade transactions on an open account basis consisting of regular payments for a continuing flow of goods, rather than individual transactions.

Documentary collection is a trade transaction where the exporter hands over the task of collecting payment for goods to be shipped to his or her bank, which sends the shipping documents to the importer's bank together with payment instructions. While Documentary collections are cheaper than Letter of Credits, they are riskier for exporters because the bank is

not responsible for verifying the accuracy of documents or guaranteeing payment, with limited recourse if an importer does not pay.

Documentary collections are useful however where the exporter and importer have a longstanding trade relationship, and if the importer is located in an economically stable market.

In terms of trade finance, Blockchain offers the potential for automating letters of credit, swifter customs and compliance procedures, and faster settlements, eliminating the need for correspondent banks. At the same time, challenges related to how legacy systems used by banks, freight operators and customs will be integrated into Blockchain still need to be addressed, as well as updating legal frameworks and standards around smart contracts for regulators and compliance officials.

That said, several proofs-of-concept trialing the use of Blockchain for trade are being implemented around the world. The World Economic Forum for its part commissioned Deloitte in 2016 to deliver a detailed study on the use of Blockchain in financial services.

LEVERAGING TECHNOLOGY

"If the entire process was to become digital, it would become a key driver for increasing trade by reducing timelines, which in turn would mean shortening the time to money and hence efficient working cycles. Even if we are able to solve a small issue like transmitting the documents from one bank to another online, it immediately reduces the time to money by 2 working days," says Jayakar.

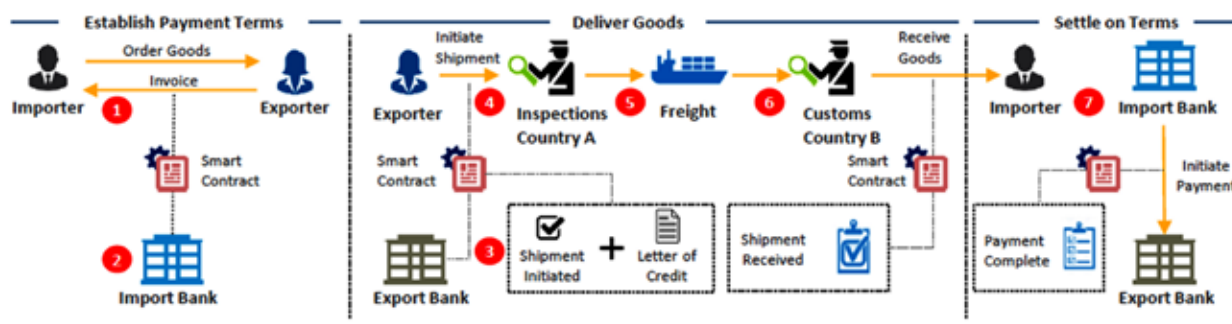
Trade finance is a network business where the buyer, seller, issuing bank, presenting bank, regulatory bodies, customs, shippers, insurers and surveyors are all or partially involved in a trade. Block-chain or Distributed Ledger Technology has the ability to connect all participants in a trade and create a consensus between different members and hence ensure validation of information before the transaction is processed.

Because each link in the block-chain verifies the previous link, the system is

Digital Transformation

Blockchain can eliminate correspondent banks in trade finance transactions

Blockchain Trade Finance – Future State Process



Source: Trade Finance, The evolving landscape of trade finance in the United Arab Emirates, by Noor Bank and MEED.

able to detect and reject any attempted unauthorized modification, making the ledger tamper-proof.

Creating a blockchain trade finance ecosystem requires workflow mapping, which clearly combines the different stages of trade from order to settlement. For blockchain trade finance platforms to work in an optimal way this means on-boarding other banks, shippers, regulators, customs, insurers, surveyors and all parts of the trade cycle.

“The key recipe for success to set up blockchain enabled trade finance platform is a common standard enabling interoperability and where every participant of the trade can become a part of the common goal,” explains Jayakar.

Blockchain adoption across UAE and the region is being assisted by the increased rate of awareness of the benefits of technology. Initiatives taken by government like Smart UAE and Vision 2021 have created interest amongst traditional companies who did not want to use online platforms. Banks in the UAE are witnessing the highest usage of their online platforms in the last two years.

This is making the UAE more productive with automation of manual processes. It also means banks have a user base who are now open to using technology for trade finance.

Each link in the block-chain verifies the previous link making the ledger tamper-proof.

Information technology is the backbone creating the environment, where trade finance ecosystems can become efficient, truly digital and more importantly transparent. Transparency brings about the financial inclusion agenda bridging the gap between those who do not get any form of trade finance against those who do.

The only way banks will be able to meet the increasing demand for diligence, whether for the want of meeting regulatory requirements or for mitigating risk, can only be done through technology. This role of information technology will become more important as we move forward in the journey towards accomplishing a truly digital environment. ■

Source: Trade Finance, The evolving landscape of trade finance in the United Arab Emirates, by Noor Bank and MEED.

HOW BLOCKCHAIN TECHNOLOGY WILL ENABLE BUSINESS IN DUBAI

Dubai Blockchain Strategy is driving a paperless approach and will enable seamless border movements, describes Andrew Fawcett at Al Tamimi & Company.

The Dubai Blockchain Strategy, that was launched by His Highness Sheikh Hamdan Bin Mohammad bin Rashid Al Maktoum in October 2016, establishes a roadmap for the introduction of blockchain technology for Dubai and the creation of an open platform to share the technology with cities across the globe.

Technically speaking a blockchain is a distributed ledger of records, arranged in data batches called blocks, that use cryptographic validation to link themselves together into an unbroken chain. The encryption process, known as hashing is carried out by multiple computers. If they all agree on the answer, each block receives a unique digital signature.

What is attractive about blockchains are that they are secure by design, as the distributed nature means it is very hard for anyone to tamper with the data – as a hacker would have to get access to every copy of the database contemporaneously to be successful.

Old transactions are preserved forever in a blockchain and new transactions are added to the ledger irreversibly. Anyone using the network can check the ledger and see the same transaction history. That means the ledger cannot be altered, only added to, and it



ANDREW FAWCETT
Senior Counsel Technology, Media
and Telecommunications, Al Tamimi
& Company.

is updated for everyone on the network at the same time.

While the concept of mutual distributed ledgers is not new, the blockchain has gained more recent prominence as the technology underpinning the Bitcoin cryptocurrency. What blockchain technology enables is a way to validate transactions through little or no human intervention.

Instead of requiring the involvement of middlemen and manual processing, a potentially huge amount of transactions could be validated automatically using blockchain technologies.

If banks and other financial institutions can increase the speed

of transactions and reduce costs in the banking system, it should mean cheaper and more efficient services for consumers. For example, sending money overseas could become nearly instantaneous.

Blockchains also have wider potential beyond financial services. Blockchains are suitable for recording events, medical records, identity management and other records management activities.

SMART CONTRACTS

Blockchain ledger technology could be used not only for decentralised transactions but also for smart automated and computable transactions and smart computable and self-executing contracts that can take advantage of smart transactions.

To be clear, the term smart contract does not refer to a true contract in legal terms. Essentially, a smart contract is a piece of software code that two or more parties programme to cause certain actions to happen in response to the occurrence of specific conditions.

From a UAE perspective, Article 12 of Federal Law No1 of 2006 on Electronic Commerce and Transactions appears to have anticipated smart contracts as it provides that valid and enforceable contracts can be formed by computer

programs, defined as automated electronic agents that include two or more electronic information systems preset and pre-programmed to carry out the transaction, even if no individual is directly involved.

DUBAI BLOCKCHAIN STRATEGY

The Dubai government has clearly recognised the potential of blockchains and through the introduction of the Dubai Blockchain Strategy, it is pioneering the application of new blockchain based technology. If the Strategy is successfully implemented, Dubai should have the first blockchain powered government.

The Strategy is a result of a collaboration between the Smart Dubai Office and the Dubai Future Foundation. Going forward the Dubai Future Foundation will oversee the implementation of the Strategy and the Smart Dubai Office has been tasked with its execution.

The Strategy is built on the three pillars of:

- Government efficiency
- Industry creation
- International leadership

FIRST PILLAR

Under the first pillar of government efficiency, the Strategy is intended to contribute to increased government efficiency by enabling a paperless digital layer for all city transactions, supporting Smart Dubai initiatives in the public and private sector.

Documentation, such as visa applications, bill payments and license renewals, which the Dubai government estimates currently account for over 100 million documents each year, will be transacted digitally under the Strategy. It has been estimated that the use of blockchain technology could contribute savings of up to 114 M Tons CO2 emissions from trip reductions, and redistribute up to 25.1 million hours of economic productivity in saved document processing time.



SECOND PILLAR

Under the second pillar of Industry Creation, the Strategy will introduce a system for enabling the creation of new businesses using blockchain technology. The Dubai government in its announcement of the Strategy expected the volume of the blockchain market to hit \$300 million over the next five years. Industries that would likely benefit from blockchain technology include: real estate, fin-tech and banking, healthcare, transportation, urban planning, smart energy, digital commerce and tourism.

THIRD PILLAR

The third pillar of the Strategy is International Leadership. Under this pillar, Dubai will open its blockchain platform for global counterparts to enhance safety, security, and convenience for international travelers to Dubai.

Under the Strategy, international travelers will benefit from faster entry with pre-approved passport and security clearance and visas; easier mobility within Dubai due to approved drivers' licenses and car rental; guaranteed wireless connectivity; enhanced tourism and pre-authenticated temporary digital wallets and payments.

The third pillar of the Strategy is to be delivered through a Global Trust Network with partners in Europe, North America and Asia.

Prior to the launch of the Strategy, the Dubai Future Foundation had already founded the Global Blockchain Council, an initiative that includes 42 government entities and private companies to discuss the best applications in blockchain technologies.

As a distributed ledger blockchain based systems have the potential to reduce or eliminate many categories of validation and verification issues for simple transactions. There is no need for trusted third parties such as banks to complete transactions. Consequently, blockchains could become the norm for data records sooner rather than later.

Through the Strategy, the Dubai Government is recognising Blockchain as the next step in digital transformation of the public and private sector and positions Dubai as a leading center for blockchain development and innovation. ■

This article was originally published in Al Tamimi & Company's Law Update magazine in March 2017.

APLA BLOCKCHAIN

Apla is a full-service technology company that develops blockchain based solutions for governments and businesses to work faster. Apla has a number of proven use cases in its portfolio: voting system, land registries, financial services, medical records, IP rights distribution, donation and other social good marketplaces.

The competitive advantage Apla blockchain offers is a secure, simple and compliant infrastructure for a fast-growing global collaborative economy.

“The typical problem with blockchain solutions is the long time for adoption and deployment,” says Muhammed Arafath, Executive Director of Apla. This summer HalalGuide, a comprehensive platform for halal products and services, switched to Apla’s blockchain solution to increase transparency of product origin for Muslim customers.

Aplas has in development a use case with the UAE government. For the UAE government, blockchain is a technology that can ease doing business, drive innovations, entrepreneurship and R&D in accordance with goals of UAE vision 2020.

Other implementations include SnapSwap, the first electronic money institution licensed by a European regulator, together with Apla launched a blockchain-based platform for payments in virtual currency, which can be easily processed into fiat currencies according to European regulations.

Apla’s blockchain solution for



MUHAMMED ARAFATH
Executive Director of Apla.

land registry won a hackathon organised by Indian state Andhra Pradesh. Apla’s blockchain solution for a system of drilling equipment history verification won a hackathon organised by Russian corporation Gazprom Neft.

SMART LAWS

Smart laws are an inherent function on the Apla Blockchain platform while building the Blockchain infrastructure. Smart Laws allow verifying the existence of any licenses, permits and any other conditions necessary that were not taken into account when writing a smart contract.

They provide a mechanism to verify or negate when the implementation of a smart contract contradicts the laws of the country or policies of the enterprise. In fact, they fulfill the role of legislation within blockchain ecosystems.

Smart Laws brings several advantages to the deployment of blockchain technology. The

first is that Smart Laws are able to function in conjunction with existing regulations, and even allow authorised parties to reverse fraudulent financial transactions, returning any stolen digital currency to rightful owners.

They regulate contract execution with a higher level of control that is assigned by the governing authorities, and provide an opportunity for authorised parties to intervene and change the regulations embedded in the system as per updated requirements.

Secondly, the application of Smart Laws does not contradict the immutable nature of the register, nor it’s autonomy or its decentralised attributes, as none of the previous entries have been altered. By bringing a system of law to code and creating Smart Laws built on top of smart contracts, a regulatory system is created where judicial recourse can be taken, and wrongs can be put right.

Finally, if a party takes advantage of an error in a contract for their own personal gain, the law will come into effect, thereby revoking the negative consequences of the unauthorised action. This is done not by deleting a part of the register to travel back in time, but by executing a series of new transactions.

This solution means that the integrity of the register is not compromised since changes will take place in accordance with a contract-law, which already exists in the network at launch. Blockchain based smart contracts are being increasingly deployed across the finance and government sectors.

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BUILDING AND SECURING 5G NETWORKS FOR TRANSFORMATION

While 5G brings promise of new revenue for providers, infrastructure and transformational use cases will open up risks, explains Ali Amer at Cisco.



ALI AMER,
Managing Director, Global Service
Provider Sales, Cisco Middle East
and Africa.

KEY TAKEAWAYS

- 5G will bridge wireless and wireline networks, forcing a major architectural change from radio access to core.
- 5G Enhanced Mobile broadband offers high speed and dense broadband connectivity to users.
- The nature of the 5G network creates a widely distributed datacentre and an expanded attack surface.
- Another way of securing 5G networks is the advanced usage of encryption.
- Half of all Internet traffic today is encrypted and this is expected to increase.

At a time of strong data encryption, on-chip biometry checks, digital signatures or national public key directories, one can question the necessity of adding advanced physical security features on a passport or an Identity card.

Every new generation of carrier technology has brought forward new business and consumer use cases. The release of 3G rolled in wireless mobile data communication, while the release of 4G brought in IP wireless data communication. Both combined have made ecommerce, video, gaming, social media, an every-day routine on smartphones and mobile phones.

In essence 3G and 4G networks enabled mobile broadband for business and consumers. As part of this growth: the world is now mobile; there is huge growth in network access; digitisation has become a reality leading to emergence of Internet of Things; and cloud is now mainstream.

5G is an enabler for new set of possibilities and capabilities. The growing 5G momentum promises new revenue opportunities for service providers. To pursue these new untapped opportunities, they will need to ramp up their network capabilities to support future 5G services.

The roll out of 5G networks provides an opportunity for service providers to gain benefits from next generation cycles in the datacentre, networks, mobility, in a multi-vendor environment. Significant changes such as personalised

networks are now possible through slicing and other granular functions.

USE CASES OF 5G

Some of the new use cases that 5G will cater to include: autonomous transport, augmented and virtual reality, smart city traffic management, rapid response services, robotics in manufacturing, healthcare and fitness, smart grids and utilities, smart offices, smart homes, industrial automation, machine to machine communications, 3D video and high definition screens, working and play in cloud, amongst others.

Ultra-reliable low latency communications focus on mission critical services such as virtual reality, tele-surgery, healthcare, intelligent transportation, industry automation, manufacturing robotics, and factory automation. Previously delivered through a wired connection, 5G is now an alternative for these use cases.

For millions of sensors and thousands of cars, all on the edge of the network, Massive IoT can support the number of scalable connections required. Service providers can use network slicing technology, to deliver network as a service for businesses. 5G will bridge wireless and wireline networks, forcing a major network architectural change from radio access to core.

SECURING 5G FRAMEWORKS

Securing 5G networks requires complete visibility of the stack

ROLL OUT OF 5G NETWORKS PROVIDES AN OPPORTUNITY FOR SERVICE PROVIDERS TO GAIN BENEFITS FROM NEXT GENERATION CYCLES IN THE DATACENTRE.

managing a use case and controls to take remedial action. Contrary to traditional carrier networks, 5G networks require visibility from the edge to the cloud platform, to the application, across the extended network, to the end point.

Securing the 5G network then requires comparison to the normal baseline behavior and alerts for any deviation. The key functional aspect being to be able to measure the network, so that it can be managed.

Continuous aggregation of near real-time network data allows analyses of the workflow through a security controller. Based on predefined security policy, remedial action and controls can be triggered. Inbuilt machine learning capability, monitors the remedial actions and its ability to counter threats, as an iterative loop for further improvement and action at a later stage.

Day zero attacks, are typically where the signature and finger print of the threat actor, exploiting an unknown vulnerability, are seen for the first time. These can be detected by variation from the baseline behavior of the network, cloud and applications. Remedial action is then initiated by the security controller to identify, isolate, and control the threat.

Day one attacks, are previously identified threats, where a series of counter attacks have already been developed and can be initiated with predictable results. Applying these types of responses in a closed loop process, where both the controller remediation and its results can be

monitored and recorded, can help in improving future responses.

Another way of securing 5G networks is the advanced usage of encryption. Half of all Internet traffic today is encrypted and this is expected to increase. Machine learning can be used to build analytics from encrypted Internet traffic increasing the visibility of threats as close to the threat as possible. This reduces the possibility of collateral damage inside the 5G network.

VISIBILITY OF 5G

New tools for increasing visibility inside 5G networks include application level probes and path computation elements. An application probe is an automated cell that travels across the network and benchmarks the application performance at various network points.

A path computation element, feeds network characteristics at every point of the network into a near real-time database to simulate functioning of a network. As an example, remedial responses to a DDos attack are first simulated using the near real-time network database to assess the impact before initiation.

The nature of the 5G network creates a widely distributed datacentre and an expanded attack surface. Such a topology is susceptible to lateral attacks and threats. This can be countered by segmenting the network – right from the edge, across gateways, applications, wireless and wireline networks, backhaul networks and so on. Segment routing is an important tool in network segmentation. By investing time and money in securing their 5G networks, service providers can be better assured of a predictable return on investment.■



DIVIDED VIEWS ON HOW BUSINESS WILL TRANSFORM INTO 2030

A recent global survey including UAE and Saudi Arabia by Dell Technologies indicates there is a divided view about how digital transformation will impact organisations by 2030.

Dell Technologies recently teamed-up with Institute for the Future and 20 experts from around the world to project into the future, forecast how emerging technologies – such as Artificial Intelligence and Internet of Things, will reshape how we live and work by 2030, and gather insights that will help businesses navigate the coming decade. The experts concluded we are on the cusp of the next era of human-machine partnerships.

Essentially, we have worked and lived alongside machines for centuries but by 2030, these partnerships will become deeper, richer and more immersive than ever before, helping us surpass our own limitations. These machines, fueled by exponential increases in data, processing power and connectivity will open-up new possibilities, beyond our grasp today.

Given the prospect of unprecedented human progress, the pace of change today and the risk of falling behind, Dell Technologies extended IFTF's forecasts and surveyed 3,800 business leaders from around the world to gauge their predictions and preparedness for the future.

The research shows businesses are split by divergent views of the future. For instance, 50% of business leaders agree that automated systems will free-up their time and 50% do not. More than two in five 42% believe they will have more job satisfaction by offloading the tasks that they do not want to do to intelligent machines. The other half disagrees.

In some respects, you can understand why the business community is so polarised. In the main, there tends to

be two extreme perspectives about the future: the anxiety-driven issue of human obsolescence or the optimistic view that technology will solve our greatest social problems. So, how can businesses realise 2030 with so many conflicting outlooks?

Fortunately, and contrary to divided opinion, respondents are unanimous in their organisation's necessity to transform and the steps they need to take to get there. The question is, in the face of extreme disruption, will they limp or lead in next decade?

FINDINGS

The leaders surveyed agree, we are on the verge of immense change. More than eight in ten 82% leaders expect humans and machines will work as integrated teams within their organisation inside of five years, 26% say their workforce and machines are already successfully working this way. However, they are divided by what this shift will mean for them, their business and even the world at large.

We can see this divide in the way that leaders forecast the future. 50% of business leaders think automated systems will free-up their time – meaning one in two do not share this view. More than four in ten 42% believe they will have more job satisfaction in the future by offloading the tasks they do not want to do to machines. This suggests 58% believe something to the contrary, and stand to miss out on the opportunity to harness automated systems to free-up their time for higher

order pursuits with a focus on creativity, education and strategy.

Almost six in ten 56% say schools will need to teach how to learn rather than what to learn to prepare students for jobs that do not exist yet corroborating IFTF's forecast that 85% of jobs that will exist in 2030 have not been invented yet – but 44% disagree. These differing viewpoints could make it difficult for business leaders to confidently prepare for a future that is in flux.

Not only are businesses torn by opposing views of the future, they are also beset by barriers to operating as a successful digital business in 2030. Many are not moving fast enough and going deep enough to overcome these obstacles. Only 27% have ingrained digital in all they do. The majority 57% of businesses are struggling to keep up with the pace of change and 93% are battling some form of barrier to becoming a successful digital business in 2030 and beyond.

Too many businesses 61% are held-back by an insufficient digital vision and strategy, manifest among other things, by a lack of ROI data to demonstrate the value of digital transformation and lackluster senior support and sponsorship. The same proportion are struggling with a skills gap, lack of employee buy-in and a workforce culture that is resistant to change.

More than half are making do with outdated technology that cannot work fast enough, data overload, privacy and cybersecurity concerns. In addition, 51% admit they have ineffective cybersecurity measures in place and 59% believe their workforce aren't sufficiently security savvy.

Given the hurdles that businesses face and the inexorable race to move everything online and make available in real-time, 24x7, leaders are at least united in the belief they need to transform. In fact, the research shows there is broad agreement on the steps they need to take and the advice they would give to others although many haven't seen their advice come to fruition within their own company

CONSENSUS

The research also reveals a general consensus among business leaders on

KEY TAKEAWAYS

Advice to accelerate digital transformation

- Gain employee buy-in 90%
- Make customer experience a boardroom concern 88%
- Align compensation, training to digital goals and 85%
- Task senior leaders with spearheading digital change 85%
- Put policies in place to support remote, flexible workforce 85%
- Empower lines of business 80%
- Appoint a chief AI officer 75%
- Automate everything and encourage customers to self-serve 74%

what needs to be achieved within five years to become a contender in the next era. In fact, the vast majority of businesses believe they will meet these targets, despite the challenges they face and an endemic ad hoc approach to digital transformation that fails to combine the latest in technology with a change in culture and mindset.

Many intend to meet these priorities by escalating their investments in emerging technologies as well as the underlying infrastructure and computing power. According to respondents' plans, the proportion of companies investing in advanced AI will more than triple within five years; while the number of companies investing in VR and AR will jump from 27% to 78%.

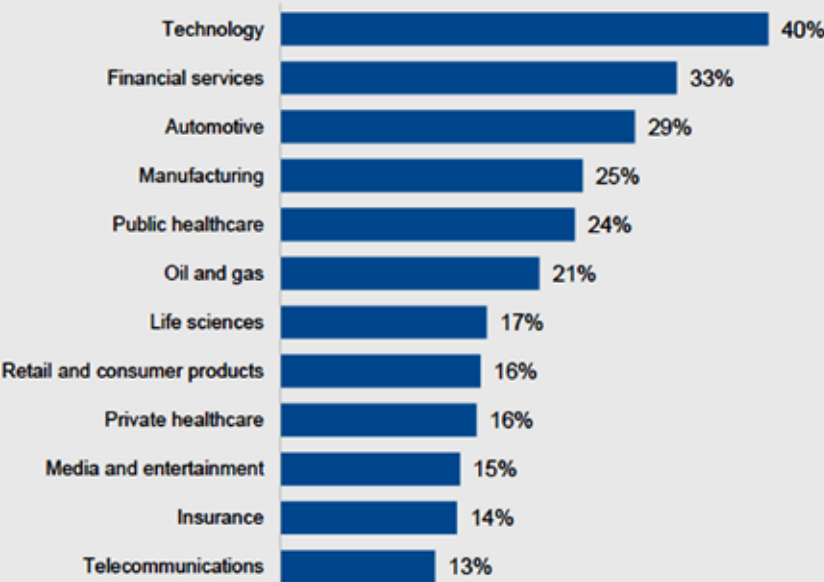
The Institute for the Future and their luminaries agree – we are entering an era of monumental change. Although business leaders are divided in their views of the future, they share common ground on the need to transform. The problem is, businesses do not have time to wait and see how events will unfold.

The research was commissioned by Dell Technologies and undertaken by Vanson Bourne based in the UK. 3,800 business leaders, from mid-size to large enterprises, were interviewed across 17 countries. The respondents were drawn from 12 industries and key functions impacting customer experience. ■

79%

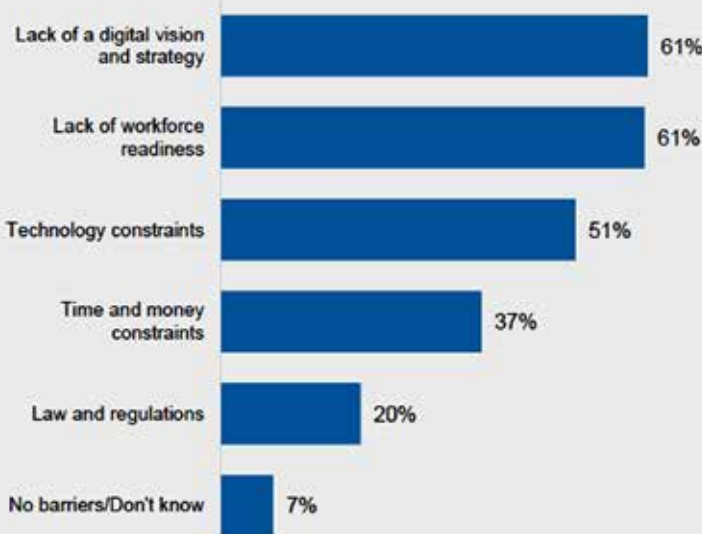
TEACH ALL
EMPLOYEES HOW
TO UNDERSTAND
SOFTWARE
DEVELOPMENT

Most likely industries to be disrupted by 2030



Leading verticals likely to be most disrupted by 2030.

Top barriers to becoming a successful digital business in 2030



Barriers to becoming a successful digital organization by 2030 and ahead.

Reasons companies are struggling to compete



Reasons limiting competitiveness of an organization in the next decade.

Top technology investments to become a digital business by 2030

Technology investments	Percentage who will be investing over the next 5 years
1. Advanced AI – self-learning/mimics human intelligence	55%
2. Converged infrastructure	51%
3. VR / AR	51%
4. Ultra high-performance compute technologies	50%
5. Next-gen apps	50%
6. Capabilities for application acceleration	48%

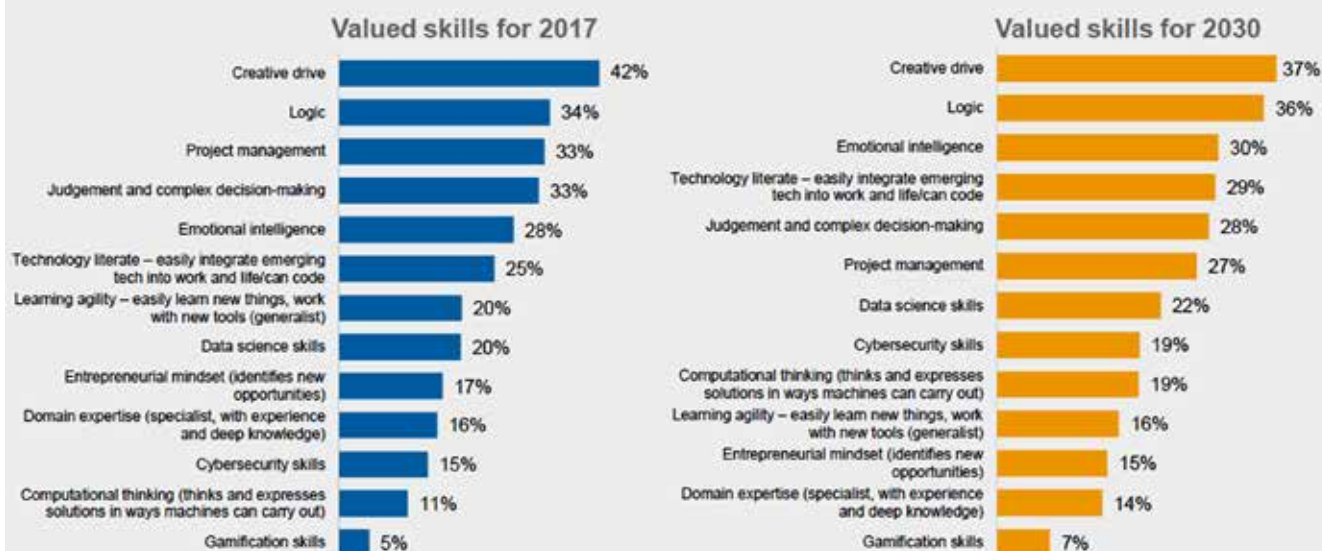
Technology investments required to become a successful digital business by 2030.

Top tasks likely outsourced to machines



Tasks likely to be outsourced to machines or automated by 2030.

Most valued employee skills



Comparison of the most valued employee skills required today and in 2030.

Source: *Realizing 2030: A Divided Vision of the Future* by Dell Technologies and Vanson Bourne from June to August 2017, 3,800 respondents. In the survey, global business leaders forecast the next era of human machine partnerships and how they intend to prepare.

REALIZING 2030

HARNESSING EMERGING TECHNOLOGIES

Digital disruption is a mounting force reshaping entire industries, and in turn, our lives. Never have the stakes to transform been higher, and now is the time to tap into the emerging technologies necessary to thrive today, tomorrow and on the path to 2030.

Explore the emerging technologies guiding the journey to 2030.



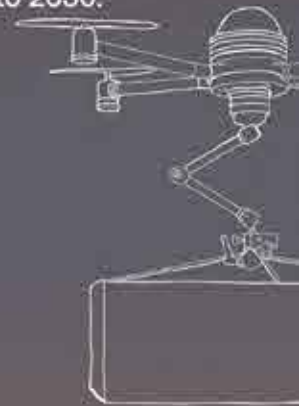
AI

MACHINE LEARNING/ARTIFICIAL INTELLIGENCE (AI)

From algorithms finding patterns in data to the development of cognitive intelligence, soon "virtual humans" will no longer be sci-fi fantasy.

\$153 BILLION

The number the AI market will expand to over the next five years, \$83 billion for robots, \$70 billion for artificial intelligence based systems.



ROBOTICS

Robotics will take a prominent role in more diverse workplaces, homes and hospitals around the world.

30 DAYS

Length of time robots are able to work unsupervised around the clock.



Source: Realizing 2030, Harnessing Emerging Technologies by Dell Technologies.

AR/VR

AUGMENTED REALITY/VIRTUAL REALITY (AR/VR)

Augmented and virtual reality are changing how we see the world, accelerating learning and real-time access to immersive information.

\$90 BILLION

Projected revenue from AR by 2020

\$30 BILLION

Projected revenue from VR by 2020

CLOUD COMPUTING

The cloud is not just storage space, but an operating model everyone looking to transform their IT must adopt for efficiency.

70%

U.S. organizations using cloud technology

56%

U.S. businesses transferring IT operations to the cloud

IoT

INTERNET OF THINGS (IOT)

The IoT is still growing and only getting stronger, connecting the physical world to a more intelligent world.

50 BILLION

Devices expected to be connected to the internet by 2020.

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