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JULY 2019

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Rajesh Garg, Landmark Group

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ensure the accuracy of all information in this
magazine, they will not be held responsible for any
errors therein.

The pace of digital transformation is being set by the customer. Not by any vendor or by innovative solution offering. We have heard so



many explanations from so many industry consultants about markets reaching the tipping point, almost reaching the tipping point, failing to reach the tipping point, and variations thereof.

Reading our hospitality feature around the Kerten Hospitality Group's business transformation exercise, it becomes quite clear, that any successful transformation exercise can only start when the user has mapped a technology solution, to their internal pain

points, to an unambiguous use case, to the culture of the organization, to its customer facing business processes, to the enlightened vision and energy of a top executive or a champion, and finally to a truly dramatic way of servicing the customer.

As Marloes Knippenberg, CEO of Kerten Hospitality, describes it so well: Whether it is a hotel, a workspace, or an F&B outlet, returning guests will be recognized. Their needs, preferences and requests will be known and applied prior to their arrival. The return on investment based on internal staff transformation is also dramatically exemplified by Knippenberg: Every minute not spent looking for relevant guest information such as preferences and loyalty status, is time well spent on enhancing the customer experience.

Today this process of transformation for early adopters may need to be initiated through a consulting exercise, a dynamic change agent, or by an investment company well versed in longer term digital valuations. Tomorrow, this level of customer servicing and personalization will become the de-facto standard for all new businesses.

The pros and cons of the game changer cryptocurrency announcement by Facebook are addressed by Jeremy Samuel, Founder and CEO, MetalCoin - Digital Metal Exchange, in a question and answer format, and makes for good reading, in this issue of BT.

My personal experience after being exposed to the Chinese social media ecosystem of Alipay, WeChat, Kuaishou, and others, with hundreds of thousands and millions of viewer impressions, is that the announcement of Calibra and Libra are long overdue in the Western world. Voices Samuel in this article: This is a tipping point for cryptocurrency. Even if Libra is not successful, the fact that such massive companies are getting behind a digital currency gives the whole space huge credibility.

Other must reads in this edition of BT, Business Transformation are PwC's market assessment of the cinema industry in Saudi Arabia.

According to PwC in this report: Lifting the 35-year ban on cinemas is one of the most visible and impactful initiatives undertaken by the government in Saudi Arabia.

And in our transformation champions section, Ahmed Fasih Akhtar at iWire Connect; Ziad Antoine Nasrallah and Kevin Coggins at Booz Allen Hamilton; and Ramesh Reddy at MAG Lifestyle Development, spell out powerful use cases.

Do track these and much more in this issue of BT.

Happy reading and learning.

Arun Shankar
arun@gecmmediagroup.com

CFOS CAN ASSIST SUCCESSFUL DIGITAL TRANSFORMATION

CFOs can work with CIOs to select the business transformation projects best suited for the organisation, writes Sage's Mansoor Sarwar.



MANSOOR SARWAR,
Regional Technical
Director, Sage Middle East.

The impact of digital transformation on every aspect of the business – from back-office processes to the customer experience – means that it is more important than ever for technology and business strategy to be in lockstep. Though there is a great deal of discussion about the importance of the chief executive, chief marketing officer, and chief HR officer in digital transformation, the pivotal role of the chief financial officer, CFO is sometimes overlooked.

But who could be better positioned to partner with the chief information officer, CIO to understand how digital technology can be used as a lever for revenue and profit growth than the CFO? The modern CFO is not only responsible for financial planning, management and record keeping – they also have a key role to play in the analysis of data and strategic decision-making. The financial leader is the person who sees all vital business data and has skills to analyse and interpret it.

As such, CFOs are in a great position to look at digital projects – from enterprise applications to artificial intelligence and the cloud – and assess whether they will deliver the return-on-investment to justify long-term change. They can evaluate whether initiatives are likely to differentiate the business and result in better productivity and efficiency.

For that reason, the CFO needs to work closely with the CIO to understand where technology investment should go and what should be prioritised. For example,

the CFO should be looking attentively at where inefficient processes can be automated, rather than increasing headcount, which can be a costlier exercise.

As part of digital transformation, CFOs should be looking for enterprise technology solutions that can provide fast and easy access to real-time financial data, which they can use to make better-informed decisions. As well as ensuring compliance, these tools must give them better access to financial and operational data, with automated alerts and perhaps capabilities such as scenario planning.

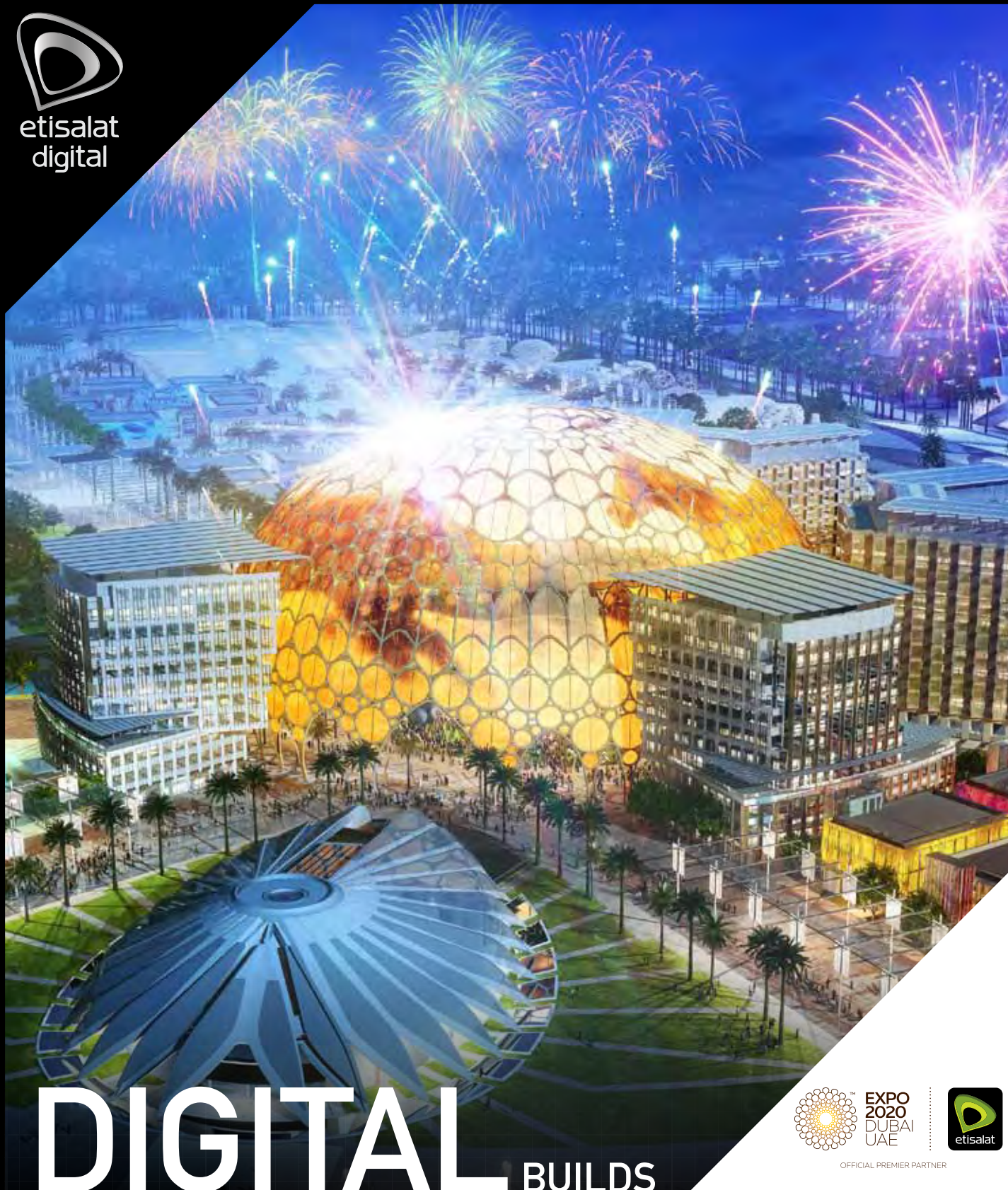
The good news that CFOs in GCC countries are awake to the possibilities of digital transformation and are hence open to working with the IT team and CIO to unlock the value of digital technology. According to an IDC study, 33% of CFOs in the GCC see ICT's role as helping the organisation to disrupt its industry, while another 31% say it will enable them to change business models, create new workflows and enable new customer engagement points.

It is through partnering with CIOs and by deploying fit-for-purpose business solutions that the CFO can help the organisation grow and thrive during a time when technology and consumer expectations are changing at high speed.

Today, the job of a CFO is to create better financial strategies that align with the needs of the business. They must in effect become strategic partners, empowered with the real-time analytics and insight that digital transformation can bring. ■

KEY TAKEAWAYS

- CFO needs to work with CIOs to understand where technology investment should go.
- 33% CFOs in GCC see ICT's role as helping the organisation to disrupt its industry.
- The modern CFO plays a key role in the analysis of data and strategic decision-making.



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TRANSFORMING DEVICES USING DESIGNED-IN SECURITY

Constructing systems that are secure from the design stage onwards is challenging but the best way forward, explains Ersin Uzun at PARC Xerox.



ERSIN UZUN,
Vice President, Director of
System Sciences Laboratory,
PARC Xerox.

KEY TAKEAWAYS

- What made Stuxnet extremely hard to detect was that telemetry from the centrifuges was spoofed.
- Many systems have been in operation for decades, with old processes and protocols.
- Designed-in security is a worthy objective, but hard to achieve.
- The way to address cyber-physical security challenges is to construct systems that are secure by design.
- The goal of designed-in security is to incorporate measures that will prevent as many attack scenarios as possible.
- A bigger challenge is figuring out how to deal with attack methods that are hitherto unknown.

Over the past decade, we have seen a proliferation of smart devices that possess the capabilities of information processing and network connectivity. The defining characteristic of the Internet of Things is that devices, previously restricted to their physical environment, are now connected to a computer network.

This network could be a home network, an industrial intranet or even the whole internet. This means that a device, or a gateway that connects a device to the network, is accessible by someone who presents the right credentials, or bypasses the credentials altogether.

As computation and connectivity have become commoditised, they have spawned a plethora of solutions that automate, improve and simplify key tasks in industrial control.

From gathering sensor readings on the performance targets of a conveyor-based motor car production line, to verifying the freshness of a food shipment in a smart supply chain, to programming a CNC machine to precisely cut a block of metal into the right shape.

They have also, unfortunately, exposed a rich attack surface that can be exploited by malicious hackers.

Consider, for example, the infamous Stuxnet worm that was used to attack Iranian nuclear installations. A malicious program was inserted into the unit that controlled the operation of the centrifuges in the nuclear reactor. This program caused infrequent changes in the speed at which the centrifuges rotate, which, over a period

of time, would cause the centrifuges to deteriorate and fail.

What made Stuxnet extremely hard to detect was that the telemetry from the centrifuges was spoofed. Whenever the controller was asked to report the speed of the centrifuges, it would still report benign, expected values rather than the altered velocities induced by the worm.

Designed-in security is a worthy objective, but hard to achieve

It is often claimed that the way to address this new set of cyber-physical security challenges is to construct systems that are secure by design. This requires a system designer to develop an understanding of an attacker's incentives and the various ways in they can compromise the operations of the system.

In the recent Mirai botnet attacks, for example, adversaries accessed their targets using commonly used default passwords, which had never been altered by their users. This simple attack infiltrated tens of thousands of devices.

The goal of designed-in security is to incorporate measures and protocols that will prevent as many known attack scenarios as possible. A bigger challenge for the security engineer is figuring out how to deal with attack methods that are hitherto unknown, and to design the system in such a way that it can mitigate the negative consequences of such novel attacks.

This is a precarious undertaking, and for many IoT systems, this type of designed-in security may be hard to achieve. ■

TRANSFORMING THE CIO'S ROLE IN ENTERPRISE STRATEGY

It is imperative for the CIO to influence strategy and take a centre position inside business, explains Monika Sinha at Gartner.



MONIKA SINHA,
Vice President Analyst,
Gartner.

Ella, a newer CIO at a large retail company, knows digital will change the entire business model of the enterprise. Blockchain could revolutionise the company's supply chain, and artificial intelligence could augment how customers interact with the brick-and-mortar stores and how they order items through the website.

But Ella also knows to push these plans forward in a strategic

company-wide effort, she must be seen by the rest of the C-suite as a business leader, not just the head of IT. Information and technology are considered too late in the strategy process in many enterprises. Once your ambition is clear, appropriately position IT at the heart of your business strategy.

The traditional wait and respond approach to enterprise strategy — the business strategy is finalised, the CIO reviews the strategy for IT's contribution and an IT strategy is developed in response — is no longer viable.

CIOs need to develop a leadership profile as a strategist: a concrete plan for how they will act, think, brand themselves and respond in the enterprise. There are three steps CIOs can take to have greater input into the business strategy.

POSITION IT IN STRATEGY

Digital success requires leaders to identify and align with the enterprise's digital ambition. Is the objective to use digital technology to optimise your current business model to improve productivity, products and customer service; or do you use it to pursue new business models, products or services?

Once your ambition is clear, appropriately position IT at the heart of your business strategy. It will negate the need for a separate digital business strategy and allow the enterprise to begin thinking and

acting like a digital business.

#2 RESHAPE YOUR PERSONAL ROLE

CIOs must reframe their role in enterprise strategy development to be effective. Think like a designer by taking a customer-centric perspective to reframe business challenges. Connect the dots to bridge the gap between technology trends and business. Practice entrepreneurship with a mindset that is relentless in the pursuit of outcomes and a resourceful attitude that enlists the support of the wider organisation.

#3 ENSURE STRATEGY IS EFFECTIVE

In Gartner's 2018 CIO survey, 46% of respondents identified culture as the main barrier to scaling digital business. CIOs need to address the culture challenge head on. Too often strategies focus on what is familiar. Task your team with providing frequent insight, especially from customers, and feed it into strategy conversations.

To contribute effectively to strategy, you will need to have the right roles in place. In particular, you will need a strong facilitator — someone to run the process, get the right people together and work with you on renewing your strategic planning process.

Then, deliver. Tangible business impact will keep you at the strategy table. ■

WHY BUSINESSES FAIL TO TRANSFORM CUSTOMER EXPERIENCES

Consumerisation of technology is putting pressure on businesses to reach same standards, yet organisations struggle writes Jake Callaway at 4C.



JAKE CALLAWAY,
Managing Director
MENA, 4C.

Discrete manufacturing and process manufacturing spent more than \$333 billion on digital transformation, DX solutions last year, representing nearly 30% of all DX spending worldwide. Clearly, the manufacturing sector has embraced the technology trend.

Today Industry 4.0 is characterised by automation, simulation, Industrial Internet of Things, additive manufacturing, cybersecurity and even augmented reality.

Across the wide spectrum of the industry, manufacturers have been digitising and automating systems and processes and even bringing legacy systems onto their modern IT networks. This has brought about significant enhancements in efficiency and production quality, with simultaneous reductions in operating costs and time-to-market.

However, the sector has placed little emphasis on leveraging digital advancements to enhance customer experiences, CX.

CX IN MANUFACTURING

Having grown accustomed to smooth and personal purchasing experiences as consumers, B2B buyers now expect the same of their interactions with businesses. Moreover, the efficiencies made possible by digital transformation are levelling the playing field in terms of the quality and pricing that manufactures can offer.

As a result, the priority of these factors will drop, while customer experience will steadily climb in the hierarchy of purchasing criteria.

In fact, according to a large-scale Salesforce study, 80% of B2B buyers expect companies to interact with them in real time, and nearly 2/3 say they would find a new supplier if the company did not make an effort to personalise communications with their business. It is abundantly clear then that manufacturers must adopt a renewed focus on their customers. Luckily, they can achieve this by making the most of their data.

HIDDEN DATA

The analyst firm, IDC, has estimated that global data volumes will grow from 33 Zettabytes in 2018 to 175 Zettabytes in 2025. Manufacturers are awash with customer data that is unstructured and dispersed across the company. This is a potential gold mine of sales and marketing information that is not being put to good use building personal profiles of potential customers because it cannot be extracted.

Data siloes across departments, caused by unwieldy IT systems, are one of the biggest obstacles to creating truly customer-focused companies, and are a pit of lost value.

Legacy IT systems lock in data stored offsite and out of mind, and create an obstacle to connecting the front and back end of offices,

resulting in siloes. This divergence means disconnected data and slower response times to customers, whether this is with marketing material or a contract.

These data latency issues create friction in the customer journey, which sits at odds with consumer expectations. Constant communication is expected from the sales, service, and sometimes production teams.

LEGACY SYSTEMS

Cumbersome, antiquated IT systems will not help manufacturers adapt to the expectations of customers, which demands agility and the easy flow of data to easily connect with these customers. For example, in the automotive industry, a seamless consumer journey from first contact, to a test drive, to potential customisation and final purchase requires better communication and data sharing between employees, partners, dealerships, and the customers themselves.

By updating to cloud-based IT systems, manufacturers can overcome siloes and be smarter about how they use sales and marketing data, including providing personalised offers and speedy quotes to customers.

A modernised system also aids the creation of a 360-degree profile of customers, which can inform up-selling and cross-selling efforts in a truly personalised way. This is an approach preferred by consumers; the earlier mentioned Salesforce research also found 59% of people say tailored engagement based on past interactions with a business is important to winning them over.

RAISING THE BAR

Customer interactions need to be more informed by data from the outset of a conversation. Manufacturers have begun emulating successful customer-

oriented companies in other sectors such as e-commerce to address these expectations.

Yet, high quality customer service does not end after a purchase has been made. The information gathered on consumers during the initial purchase journey can be used to personalise updates and create relevant offers. IoT devices enable technical information on a product's performance to be delivered back to a manufacturer in a constant feedback loop. As a result, engineers can be automatically dispatched to solve problems a customer may not even know about.

In some cases, IoT-enabled devices remove the need for human intervention at all. Take the example of Tesla; most issues and updates are identified and performed while these connected cars are in the customer's garage. This cuts costs for the manufacturer, which can react to potential issues without involving maintenance staff but, crucially, it means the company can remain in constant communication with its customers.

Digital transformation will change the manufacturing industry regardless of the actions of individual manufacturers, but how they respond to it will define whether they thrive or not. Technological advancements without direction risk doing nothing to enhance a manufacturer's offering to its customers, but costing a great deal.

To mitigate this risk, and get the most from digital transformation, manufacturers need to keep the customer's expectations in mind at every stage of the process. ■

KEY TAKEAWAYS

- 80% of B2B buyers expect companies to interact with them in real time.
- Data siloes are one of the biggest obstacles and are a pit of lost value.
- A modernised system aids the creation of a 360-degree profile.
- IoT-enabled devices remove the need for human intervention at all.
- DX will change the manufacturing industry regardless of the actions of individual manufacturers.

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USING BSS TO TRANSFORM TELECOM CUSTOMER EXPERIENCES

New customers of telecom service providers are digitally savvier, increasing the pressure on BSS to deliver, says Nexign's Maxim Nartov.



MAXIM NARTOV,
Customer Solutions
Director, Nexign.

If you are not a digital native, you may remember a time when the phrase, customer is king, could be met with a measure of cynicism, if not outright derision. Customer-centric businesses were often little more than fictions concocted by astronomically funded marketing teams. Not today.

Welcome to the age of the digital native, who differs from their ancestor in one important respect. Give one of these discerning consumers a negative experience and

they will share it with thousands in less time that it will take you to read this article.

At the epicentre of this re-design is a robust business support system — where infrastructure, business model and customer experience meet. To deliver onto the millennial all that they demand, you need to become a digital service provider, expanding customer experience, solution offerings, partner ecosystems and a host of other capabilities.

Operators that want to serve customers the way customers want to be served need to strike a pitch-perfect note in every interaction; they need to understand that marketing, care, sales, and support teams have subtly different relationships with subscribers and business customers, and if the tone is jarring, the customer will notice.

The digital service provider is in search of nothing less than the ability to serve every customer according to their individual needs, through the contact channel of their choice, the much sought after personalised service ideal.

Treat every customer like this and you will have entered a zero-churn utopia, where upselling is effortless, and every customer is a fervent ambassador for your brand.

ROLE OF BSS

The right business support system consolidates and homogenises data,

allowing decision makers at all levels — from the boardroom to frontline sales teams to get to know their customers more intimately. Profiling goes so much deeper than names and contact history.

Your business support system needs to gobble up every piece of data available if it is going to provide you with the actionable customer insights that will set you apart from your competition.

The business support system must also cover the automation of business processes. The individualisation of service is best delivered in an environment where employees — sales, marketing and others can be confident that the basics of customer courtesy and compliance are being fulfilled.

In such an environment, your representatives can turn their skills to more one-to-one interactions, humanising the experience for the subscriber or business user.

Indeed, the starting point for some of the most successful one-to-one interactions will be the automatic, accurate collection of customer data—everything they do and say; any trifling indication of a want, dissatisfaction, intention, plan or musing must be captured.

OMNI-CHANNEL WAY

Digital natives want what they want, when they want, and via the channel they want. They have power and are discerning because

THE STARTING POINT FOR SUCCESSFUL INTERACTIONS WILL BE ACCURATE COLLECTION OF CUSTOMER DATA.

KEY TAKEAWAYS

- At the epicentre of this is a business support system — where infrastructure, business model, customer experience meets.
- To deliver onto the millennial all that they demand, you need to become a digital service provider.
- Your business support system needs to be able to guide your people in their navigation.
- Customers should never have that starting from scratch feel in dealing with you.
- Many customers may prefer to speak with a representative, a growing number of consumers will opt for self-care.
- If you do not offer self-care, they will remember, and they will speak out on social media.

they have choice. And the ease with which they can change their minds has never been greater. The omni-channel experience has grown out of that power. The modern business cannot afford to dismiss gripes such as why can I not place an order via WhatsApp.

If your subscribers are using WhatsApp, then you must make it your business to deliver it as a channel option. So, you must seek out a business support system that allows you to offer that experience. And just as your customers would have expected seamless convergence between online, phone and a physical branch—back in the days when they were the only channels about which you had to worry today, they will expect the same continuity between all their traditional and digital interactions.

Your business support system needs to be able to guide your people in their navigation of that activity, so that customers never have that starting from scratch feel in dealing with you.

The same goes for digital channels and self-care facilities. They can help to slash call centre costs by allowing customers to help themselves. Your business support system must cater to these capabilities as they are an extension of the omni-channel experience. Although many customers may prefer to speak with a representative, a growing number of consumers will opt for self-care,

and if you do not offer it, they will remember, and they will speak out on social media.

In the age where your subscribers value experiences over services, a robust business support system can also help you win them over by extending your offerings beyond just traditional voice and data. Digital service providers can grow their own partner ecosystem by onboarding third-party providers—from airlines to health insurance companies swiftly, attracting swarms of new customers in the process. Entirely new streams of revenue can be created overnight.

But remember, before you start counting your digital chickens, you need to consider the partner experience. Finding themselves in a sea of communication service providers trying to become digital service providers, potential partners have a lot of choice — just as consumers have. It is vital that you empower them to the same level end.

Your business support system needs to be up to the task of delivering on partner expectations such as easy self-onboarding, self-care and transparent reporting.

Becoming a digital service provider and pleasing digital natives every day is not an easy journey. But staying relevant in a market driven by millennial demands starts and ends with your business support system. ■



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HOW TO GET CFOs TO FUND TRANSFORMATION PROJECTS

It is easier for CFOs to justify spending on digital technologies when the value chain is clear, elaborates Gartner's Sanil Solanki.



SANIL SOLANKI,
Managing VP,
Gartner.

CFOs have an essential role to play in ensuring funding for their organisations' innovation and growth by effectively defining and measuring the value and costs of digital initiatives. Digitalisation is prompting widespread, and often radical, change in business models, but CFOs play a key role in ensuring continued funding for innovation and growth by defining, measuring and demonstrating the value of digital initiatives to the business.

In the 2018 Gartner CEO and Senior Business Executive survey of 460 executives from large organisations around the world, business leaders put digital income streams at 39% of revenue by 2020, up from 29% of 2017 revenue. But demonstrable value does not always translate into funding, often because organisations lack a shared view of how to measure the costs and value of digital initiatives.

CFOs need a process for discovering where digital value is created within their organisations. Looking at technology spend in isolation without connecting it to the value projects can provide will choke lucrative streams of future digital revenue.

DEFINE DIGITAL REVENUE

Before CFOs can communicate digital business value to their senior executive teams, they need to make

sure everyone is speaking the same language. Some executives associate digital business with e-commerce; others do not consider a revenue stream to be digital unless the entire process surrounding it is digitalised and automated.

The Gartner survey showed that 62% of business leaders recognise digital revenue as its own distinct category, regardless of whether they proactively measure or publish that revenue.

Among those who do recognise digital revenue, definitions vary:

- Sales made as a result of digital marketing campaigns
- Nondigital products sold online
- Digital products and services sold or delivered offline
- Digital products and services sold and delivered online

If yours is one of those organisations that do not distinguish digital revenue from other revenue streams, start by analysing your organisation's digital strategy to determine exactly how value is being created through digital channels. From there, map and measure the flow of value generated by these activities to identify every possible digital value stream.

Remember, a business initiative does not have to be fully digitalised to create value from its associated technology spending. Digital revenue can come from any income source that is enabled or made possible by

CFOS PLAY A ROLE IN FUNDING INNOVATION BY MEASURING VALUE OF DIGITAL INITIATIVES.

KEY TAKEAWAYS

- CFOs need a process for discovering where digital value is created within organisations.
- Demonstrable value does not always translate into funding.
- Often organisations lack shared view of how to measure costs and value of digital initiatives.
- Before CFOs can communicate digital business value, they need to make sure everyone is speaking the same language.
- Digital revenue can come from any income source that is enabled or made possible by digital technologies.
- For future technology budget forecasting, cost-to-revenue matches can be used to assess spending decisions.
- Business partners can see impact of IT spending and offer business case for maintaining funding for digital initiatives.

digital technology, whether the end product is digital or not.

For a growing number of organisations, digital information technologies are integral to the creation and delivery of their products or services. This means IT accounts for a large percentage of business operating costs, if not the largest. If finance leaders do not connect these costs with the digital value they produce, CIO and CTO budgets will be the first to suffer. That is why recognising and defining digital revenue is so critical.

Once an organisation understands where its digital value is coming from, the CFO can then apply the matching principle of accounting to match up all costs, including digital ones, to the revenue streams they support. Armed with this type of financial reporting, business partners can see the direct impact of IT spending and offer a clear business case for maintaining funding for digital initiatives.

For future technology budget forecasting, these cost-to-revenue matches can be used to assess upcoming spending decisions in terms of their potential impact on digital value and revenue streams. Then, CFOs can follow up and continue to measure the actual impact to prove the investment's value.

MEASURE DIGITAL VALUE

When assessing, measuring and communicating digital business value to senior executives, CFOs can take these steps to ensure that IT

and leadership are on the same page:

#1 CONNECT THE DOTS BETWEEN TECHNOLOGY SPEND AND REVENUE STREAMS.

By matching IT costs with revenue, you show that all digital spending, not just e-commerce costs, can deliver measurable results. This enables correct funding of IT costs.

#2 USE DIGITAL KPIS TO ATTRIBUTE CURRENT PERFORMANCE IMPROVEMENTS TO DIGITAL SPENDING.

Analyse any of the organisation's existing revenue streams that are enabled by digital technology, and identify how the associated technology costs can and do improve performance against earlier forecasts by creating and communicating digital KPIs.

#3 CRAFT AN INCOME STATEMENT.

Digital will report on the costs, benefits and revenue generated by digital activities. This should be included in management reports that go to both business leaders and IT to take technology costs out of their silo.

Ultimately, the best thing a CFO can do to demonstrate the value of digital initiatives is to frame technology costs as an essential component of a digital business model or line of business. Although digital business activities are never a guaranteed success, reporting on digital growth, improvement and revenue makes it more likely that leadership will understand its value.

This will give CIOs the necessary budget to fund innovation and growth and deprioritise initiatives that will not move the business forward. ■

WHY IS FACEBOOK INVESTING IN CRYPTOCURRENCY AND BUILDING A BLOCKCHAIN ASSOCIATION

Anounced on 18 June, the combination of Calibra and Libra, heralds Facebook's arrival into the realm of cryptocurrency and instant payments. The ripple ramifications are huge and promise to be polarised. Jeremy Samuel, Founder and CEO, MetaliCoin – Digital Metal Exchange, answers deep dive questions raised by BT's Arun Shankar.

BT: WHAT ARE THE PLUS POINTS OF THIS INITIATIVE BY FACEBOOK FOR ITS CURRENT AND FUTURE MEMBERS?

Jeremy Samuel: The most positive thing about Libra is that the subject of crypto currency has suddenly become very mainstream. It raises very real questions about the current financial system, how to bring financial inclusion to the unbanked and the role of regulators and private companies. To date, crypto currencies like Bitcoin and Ethereum have had to build user communities. Bitcoin has, perhaps, 10 million users. But Facebook and the other Libra Association members, bring billions of users and give them the ability to transact value over the existing platforms including WhatsApp,

Instagram, Facebook Messenger, and probably – eventually, Facebook itself.

By making it very easy for people to use existing platforms that they know and trust, Libra makes sending value using digital currency, easy for a huge number of people. Doing this without going through the banking networks and potentially without government oversight, raises the prospect of trillions of dollars and billions of transactions happening in Libra. This could make Libra a default reserve currency that is outside of any other national currency. Is that a plus? I guess it depends on your perspective.

BT: WHAT ARE THE CHALLENGES AND FALL OUT ISSUES OF THIS INITIATIVE BY FACEBOOK?

Jeremy Samuel: A point of clarification, the source code is open source. The control of what gets implemented in the core is up to the Libra Association, which Facebook definitely has a big say in, if not control. Every open source project has a mechanism to decide what is included and what is not, otherwise it would just be chaos. For example, the

A portrait of Jeremy Samuel, a man with dark hair, smiling, wearing a dark suit, white shirt, and a blue and white patterned tie. He is positioned in front of a large, stylized Bitcoin graphic. The Bitcoin has the word 'BITCOIN' at the top, 'DECENTRAL' on the right, and 'PEER' on the left. The background is a warm, golden-yellow color with a subtle circuit-like pattern.

JEREMY SAMUEL,
FOUNDER AND CEO,
METALCOIN -DIGITAL METAL EXCHANGE.

Facts about Libra



Cryptocurrencies like Bitcoin are characterised by high volatility, which will be addressed by keeping equivalent reserves in real currency and assets, when Libra is operational. (Source Bitcoin.com)

Libra's mission is to enable a simple global currency and financial infrastructure that empowers billions of people. For too many, parts of the financial system look like telecommunication networks pre-Internet. All over the world, people with less money pay more for financial services. Hard-earned income is eroded by fees, from remittances and wire costs to overdraft and ATM charges.

Payday loans can charge annualised interest rates of 400% or more, and finance charges can be as high as \$30 just to borrow \$100. When people are asked why they remain on the fringe of the existing financial system, those who remain unbanked point to not having sufficient funds, high and unpredictable fees, banks being too far away, and lacking the necessary documentation.

Blockchains and cryptocurrencies have a number of unique properties that can potentially address some of the problems of accessibility and trustworthiness. These include distributed governance, which ensures that no single entity controls the network; open access, which allows anybody with an Internet connection to participate; and security through cryptography, which protects the integrity of funds.

But existing blockchain systems have yet to reach mainstream adoption. Mass-market usage of existing blockchains and cryptocurrencies has been hindered by their volatility and lack of scalability, which have, so far, made them poor stores of value and mediums of exchange. Collaborating and innovating with the financial sector, including regulators and experts across a variety of industries, is the only way to ensure that a sustainable, secure, and trusted framework underpins this new system. And this approach can deliver a giant leap forward toward a lower-cost, more accessible, and more connected global financial system.

The world truly needs a reliable digital currency and infrastructure that together can deliver on the promise of the Internet of money. Now is the time to create a new kind of digital currency built on the foundation of blockchain technology. The mission for Libra is a simple global currency and financial infrastructure that empowers billions of people.

The Libra currency is built on the Libra Blockchain. Because it is intended to address a global audience, the software that implements the Libra Blockchain is open source designed so that anyone can build on it, and billions of people can depend on it for their financial needs. Imagine an open, interoperable ecosystem of financial services that developers and organisations will build to help people and businesses hold and transfer Libra for everyday use.

The unit of currency is called Libra. Libra will need to be accepted in many places and easy to access for those who want to use it. In other words, people need to have confidence that they can use Libra and that its value will remain relatively stable over time. Unlike the majority of cryptocurrencies, Libra is fully backed by a reserve of real assets.

A basket of bank deposits and short-term government securities will be held in the Libra Reserve for every Libra that is created, building trust in its intrinsic value. The Libra Reserve will be administered with the objective of preserving the value of Libra over time.

The Libra Association is an independent, not-for-profit membership organisation headquartered in Geneva, Switzerland.

LIBRA MOVES CONTROL OF CURRENCIES FROM GOVERNMENTS TO A CONSORTIUM.

Linux Foundation for Linux, Bitcoin Foundation for Bitcoin.

The key challenges are regulatory and technical.

Libra moves control of currencies from national governments and central banks to a consortium of for-profit corporations including Facebook and Uber. This means that things like ownership of transaction data, considered the equivalent of oil in a technical economy, is also moved to these corporations.

It reduces the governments' ability to control the money supply,

which can be important during economic downturns. It may make collecting tax revenue harder. It places a huge amount of power in the hands of the Libra Association and the corporations that back it, the banks and merchants they choose to work with will profit enormously, those excluded could find it hard to stay in business. From a crypto-currency perspective, Libra is highly centralised in corporate hands where the aim of many in crypto is to create de-centralised networks governed by a very wide range of users.

How can regulators or the public stop members of the Libra Association to access the data from Libra and profiting from it? A lot of the policy has not yet been made. The buy-in to become a mining member is very high – \$10M at present, so ordinary people cannot mine.

The system uses a closed consensus mechanism and is not currently a true blockchain, so it is possible that it will be quite opaque in its operation. They promise to move to a more open and proof of stake mechanism, but that also has issues

WHERE IS THE DOWNSIDE OF THE FACEBOOK INITIATIVE IN TERMS OF FINANCIAL DISCLOSURES?

Jeremy Samuel: The key issue is access to data. If a massive number of transactions are conducted via Libra, the Association has incredible access to data. Experience so far is

that global corporations cannot avoid the temptation to monetise the data trove.

This also has the potential to massively concentrate financial power in the hands of Libra Association members and cause significant disadvantage to those excluded from the club.

BT: WHERE IS THE DOWNSIDE IN TERMS OF ACCESS TO PERSONAL INFORMATION AND PRIVACY?

Jeremy Samuel: MasterCard and Visa do not have access to 2 billion people's social graph. Facebook is starting with that and then seems intent on having a large chunk of their transactional data as well. Pretty much creates a global monopoly. Also, MasterCard and Visa have anonymised data. It is still of massive value, but maybe an order of magnitude less than personalised, preference-based data.

BT: IS THIS LIKELY TO BE A TIPPING POINT FOR CRYPTOCURRENCY AND SOCIAL COMMUNITIES?

Jeremy Samuel: This is a tipping point for crypto-currency. Facebook is making crypto a mainstream conversation. Even if Libra is not successful, the fact that such massive companies are getting behind a digital currency gives the whole space huge credibility. WeChat and AliPay are far advanced in China. They are more stored value solutions than digital currency, but in the eyes of consumers it is a very seamless experience. It gives them the idea that their mobile phone is a payment mechanism. Apple Pay and Google Pay have made much smaller in-roads in the West. So yes, in that sense, the English forums are in catch up. Libra moves that forward a long way. ■

AI, fintech, IoT ranked top challenges by ME CFOs in American Express Survey

Senior finance executives across the Middle East remain optimistic about the economy, the outlook for their companies and their investments for the future, despite economic uncertainty, according to the 2019 Global Business and Spending Outlook, a survey released by American Express Middle East and Institutional Investor Thought Leadership Studio.

The cross-industry findings in the joint American Express and Institutional Investor study are based on a global survey of 901 CFOs and other senior finance executives of firms with annual revenues of \$500 million or more. 180 of these respondents are located across the Middle East region including the United Arab Emirates, Saudi Arabia, Egypt and Bahrain. Now in its twelfth year, the survey was conducted in late November and December 2018.

Whilst senior executives suggest they are less likely to foresee economic growth in the region as they did last year 72% in 2019 vs 92% in 2018 due in part to lower oil prices, the growth outlook for the Middle East is in line with expectations worldwide. 71% of the total response base anticipates a substantial or modest expansion in their home countries. Additionally, growth expectations within the region range from 67% of respondents from Bahrain expecting substantial or modest expansion, to a high of 77% in Egypt.

Only 10% of senior finance executives from the Middle East foresee a modest or substantial



MAZIN KHOURY,
Chief Executive Officer, American
Express Middle East.

contraction in 2019. Of the 72% who do expect to see growth in 2019, 45% anticipate modest expansion while 27% anticipate a substantial economic expansion. The majority of executives saw their companies' worldwide revenue rise in 2018 and the Middle East showed especially strong firm-level performance compared with Europe and Asia.

"Despite operating in unsettled times, senior finance executives across the region are concentrating on their day-to-day business but keeping an eye on the future," said Mazin Khoury, Chief Executive Officer, American Express Middle East. "While they balance spending to drive topline growth with profitability, they are pressing ahead with expansion plans, which include pursuing foreign trade opportunities, hiring and investing in next-generation technology."

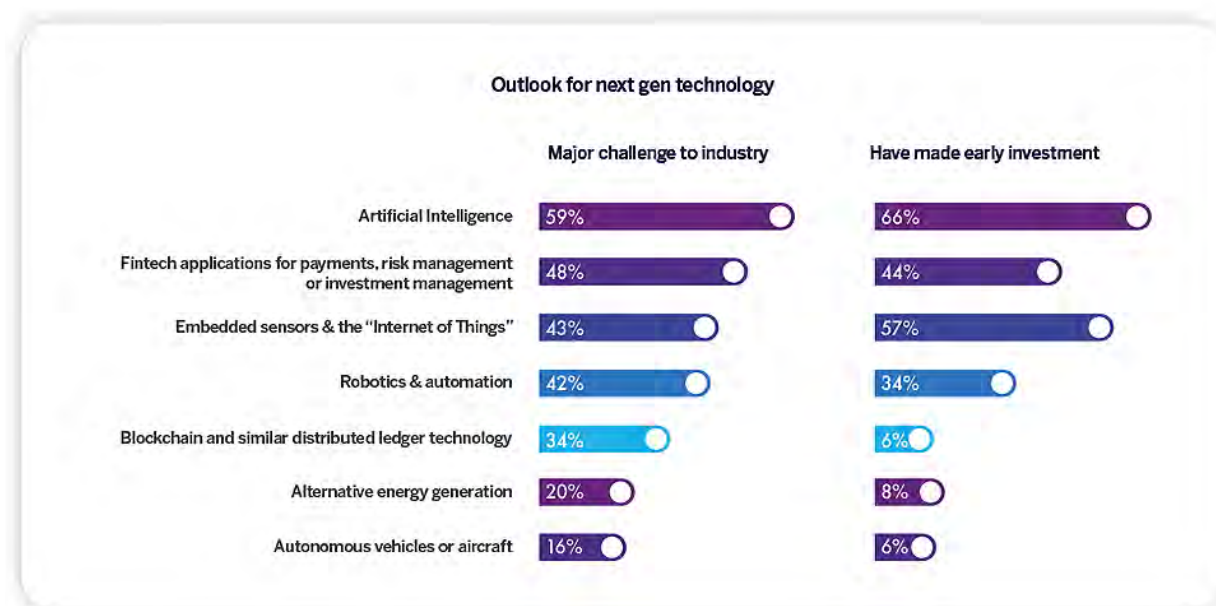
TECHNOLOGY AND INNOVATION

While digital transformation is clearly a central theme for the majority of organisations across the region, this year's study also revealed a growing awareness for the dramatic impact of next-generation technology on competitive dynamics within industries 31%, up from 23% last year. Expectations for major disruption on company operations and performance 16%, compared to 18% last year or on countries have waned 14%, down from 21% last year.

Among those industries surveyed, the media-entertainment-travel 43%, wholesale-retail 41% and

KEY TAKEAWAYS

- 2019 Global Business and Spending Outlook is based on 900+ finance executives with annual revenues of \$500 million or more.
- 180 respondents are located across Middle East region including UAE, Saudi Arabia, Egypt, Bahrain.
- Digital transformation is a central theme for majority of organisations across the region.
- Growing awareness for impact of next-generation technology on dynamics within industries 31%, up from 23% last year.



Queried on the greatest technology challenge to their industry across the region, senior finance executives in this year's study cite the use of artificial intelligence, fintech applications, risk management, and Internet of Things.

construction 38% industries are most likely to anticipate major disruption to their industry's competitive dynamics.

Queried on the greatest technology challenge to their industry across the region, senior finance executives in this year's study cite the use of artificial intelligence 59%, fintech applications for payments, risk management or investment management 48%, and the Internet of Things, which includes embedded sensors and ubiquitous, Internet connected devices 43%.

Against this backdrop, in keeping with their focus on the next generation, many Middle Eastern companies are investing in these emerging technologies. The most popular being artificial intelligence where 66% of respondents indicated this was a major area of focus up from 40% in 2018. Other areas of focus included the Internet of Things 57% in 2019 vs 24% in 2018, and fintech 44% in 2019 versus 27% in 2018.

GENERATION Z

Another key theme from this year's

survey was the continued rise of Generation Z, as both a customer and employee. Young people under the age of 24, now make up between 50% and 65% of the Middle East population, and senior finance executives across the region believe their companies are prepared for this Generation Z, and the technological and economic changes they bring with them.

81% of those asked agreed with the statement: My company has a long-term plan that considers technological, demographic and economic changes over the next 5-10 years, and 78% agreed that: My company has explicit strategies to appeal to Generation Z consumers born between 1995 and 2005.

WAR FOR TALENT

Companies across the region will continue to be competing for talent in a highly competitive marketplace in the coming year, but senior finance executives are looking beyond compensation to attract and retain the best employees. In the Middle East, 61% of senior executives expect to increase their companies' worldwide number of

employees between 8%-15%. On average, headcount will grow by 8.6% for companies across the region, somewhat lower than the global average of 9.2%.

However, this increase is not going to be accompanied by aggressive increases in compensation. Instead companies will focus on improving career development opportunities and working environments. Just 31% of respondents intend to raise wages or salaries to attract and retain employees in 2019. Instead companies will expand career development opportunities 56%, improve working environments through reconfigured office spaces and increased amenities 56%, and allow flexible working arrangements 45%.

The 2019 Global Business and Spending Outlook was conducted by Institutional Investor Thought Leadership Studio and is based on a survey of 901 senior finance executives from companies around the world with annual revenues of \$500 million or more. 180 of these respondents are located across the Middle East region including the United Arab Emirates, Saudi Arabia, Egypt and Bahrain. ■

Backseat kid battles driving parents to select cars with intelligent features



The research highlighted that avoiding distractions is one of the biggest concerns for parents when choosing which car to buy, with one in three 34% saying they would actively look for driving assistance systems when choosing their next car.

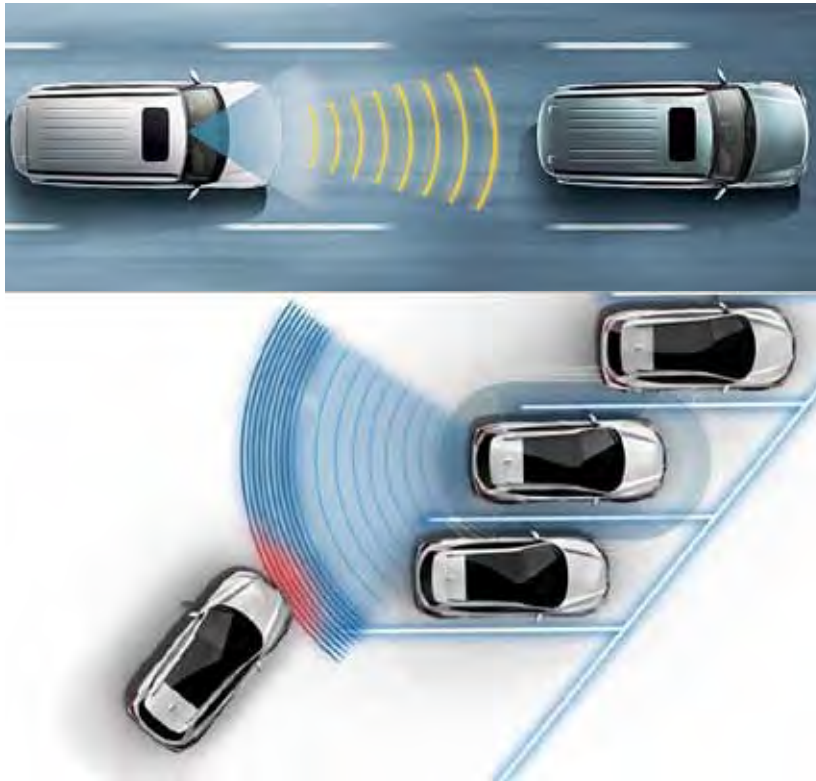
More than six in 10 European parents 63% admit they struggle to fully concentrate on the road when their children are misbehaving in the car. But even more worrying is that nearly one in three adults 29% reveal they know they are less safe behind the wheel as a result, according to new research conducted by Nissan.

Parents say the level of distraction means they have taken their eyes off the road and their hands off the steering wheel. They also say they have run through red traffic lights, forgotten to indicate, braked suddenly, swerved into the next lane, and even been forced to stop the car completely. As a result, parents are increasingly turning to in-car technology in the quest to keep the whole family safe on the road.

The research highlighted that avoiding distractions is one of the biggest concerns for parents when choosing which car to buy, with one in three 34% saying they would actively look for driving assistance systems when choosing their next car. These could be automatic emergency braking, lane departure warning and adaptive cruise control.

Crying and screaming tantrums top the list of kids' misbehaviour 65%, followed by backseat battles between siblings or friends 58%, kicking the back of the driver's seat 49%, undoing their seat belts 43% and throwing toys around the car's cabin 39%. It is no surprise that, as a result, parents say they regularly feel stressed and anxious when their kids are in the car. They admit they can arrive at their destination either late or in a bad mood, having had a fight with their partner or even experienced road rage incidents with other drivers.

Many reveal they are taking desperate measures to reduce the danger and distraction caused by driving with kids – 15% of adults



Nissan's most advanced driver assistance technology, ProPILOT, is one solution for a less stressful, more enjoyable driving experience.

completely avoid using motorways or busy roads when their kids are in the car, while others distract them with tablets or smartphones 37%, toys 41% or sing-along music 53% or keep them quiet with sweets 22%.

Nissan's most advanced driver assistance technology, ProPILOT, is one solution for a less stressful, more enjoyable driving experience. ProPILOT enhances the driver's control and confidence by assisting with steering, acceleration and braking. It works in a single lane on motorways and is optimised for

low-speed congestion and high-speed cruising.

Designed to reduce fatigue and stress in everyday driving situations, ProPILOT can help improve safety. It is a hands-on, eyes-on technology and the driver remains in control and responsible for the vehicle. ProPILOT is available now on the Nissan LEAF electric vehicle and will be available on Nissan's pioneering crossovers – the Qashqai and X-Trail – later this year. Other available technologies include Intelligent Emergency Braking helps to avoid and minimise

the impact of a collision.

In congested streets and tight car parks, the Nissan Qashqai's Intelligent Around View Monitor and Rear Cross Traffic Alert provide added reassurance when parking and reversing, warning the driver of moving objects around and behind the vehicle.

A total of 5,000 parents participated, all of whom held a valid driving licence when the survey was conducted. Nissan is a global full-line vehicle manufacturer that sells more than 60 models under the Nissan, Infiniti and Datsun brands. In fiscal year 2018, the company sold 5.52 million vehicles globally.

KIDS AND IN-CAR STRESS

- Parents spend an average of 2 hours and 54 minutes in the car with their children each week, the equivalent of over 6 days every year
- One in five parents 20% said their kids' behaviour is at its worst in the car, ahead of getting dressed for school 11%, supermarket trips 17% or bed time 12%.
- Mums 67% find it harder to concentrate when driving with misbehaving kids in the back compared to 57% of dads.
- Mums are far more likely to delegate the driving because of their kids' behavior, 24% said they had handed over the keys to someone else, compared to 12% of dads.

Jean-Philippe Roux, General Manager, crossovers, Nissan Europe, said: "Any parent knows that family outings are not always straightforward. The smallest passengers often bring the biggest surprises when you are trying to concentrate on the road, which can create a stressful time for the parent behind the wheel."

"Driving safely and staying focused should always be the driver's main priority, and there is no substitute for this. However, knowing your car is fitted with technology that can predict and prevent potentially dangerous situations can help create an overall feeling of calm at the wheel. This, in turn helps drivers keep their focus firmly on the road ahead."

State actors targeting critical infrastructure for espionage, sabotage, DarkMatter

DarkMatter Group, released the first semi-annual Cyber Security Report for 2019 revealing that critical infrastructure sectors, including oil and gas, financial, utilities and transportation, are in the firing line from a growing incidence of cyberattacks across the UAE and wider Middle East. The report analyses threats and trends observed by DarkMatter between October 2018 and March 2019 providing a snapshot of the cybersecurity environment in the UAE and the wider region.

The Middle East breaches are both widespread, frequently undetected, and increasingly appear to be state-sponsored. Cybercriminals are aiming their weapons where it hurts the most at critical infrastructure, with potentially devastating effects on the security of nations and their citizens. The report found that the most significant threats to regional critical infrastructure organisations came from eight malicious threat actors and campaigns, motivated by espionage and then sabotage. Spear phishing was found to be the principal method of attack to gain access to targets.

Q1 2019 HIGHLIGHTS

- 75% of intrusions were motivated by cyberespionage actions, such as stealing remote access credentials and personal information.
- 75% of observed UAE domains are hosted outside the country, placing sensitive data at high risk.
- 91% of organisations assessed by



KARIM SABBAGH,
CEO of DarkMatter Group.

KEY TAKEAWAYS

- Middle East breaches are widespread, frequent, appear to be state-sponsored.
- Cybercriminals are aiming weapons where it hurts most at critical infrastructure.
- Most significant threats from eight malicious actors motivated by espionage and sabotage.
- Spear phishing was found to be principal method of attack to gain access to targets.

DarkMatter had outdated software and were missing critical security patches.

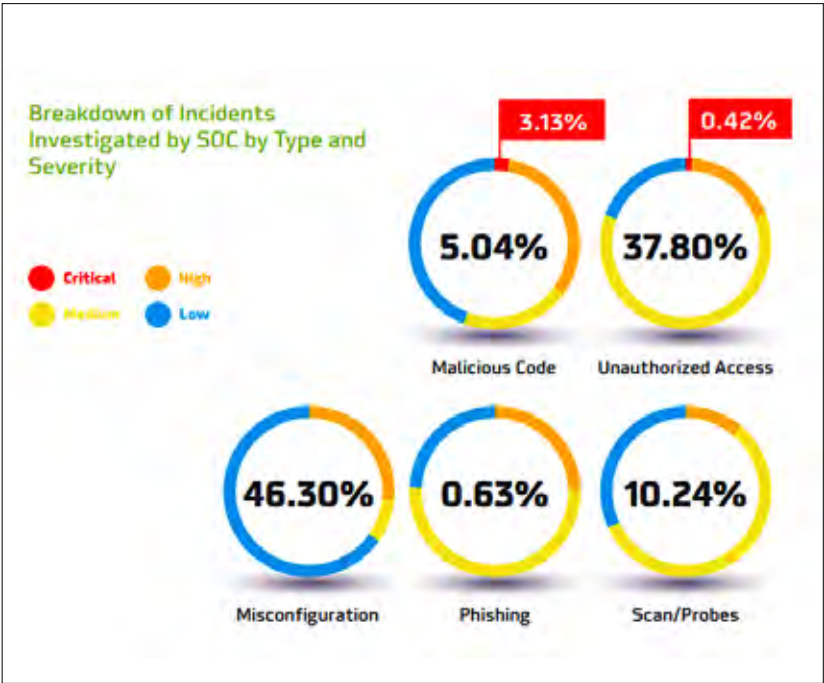
- 83% of organisations assessed by DarkMatter used unsupported software.
- 91% of organisations assessed by DarkMatter were vulnerable due to weak or default passwords.
- 87% of organisations assessed by DarkMatter used insecure network protocols.

The report focuses on the global significance of targeted attacks on the UAE's critical infrastructure sectors. Of these, the oil and gas sector face the greatest vulnerability to cybersecurity breaches. In the Middle East, an estimated 75% of regional oil and gas companies have had their security in their operational technology compromised. The commercial and strategic importance of this industry to the region makes it an attractive target for geopolitical or economic rivals.

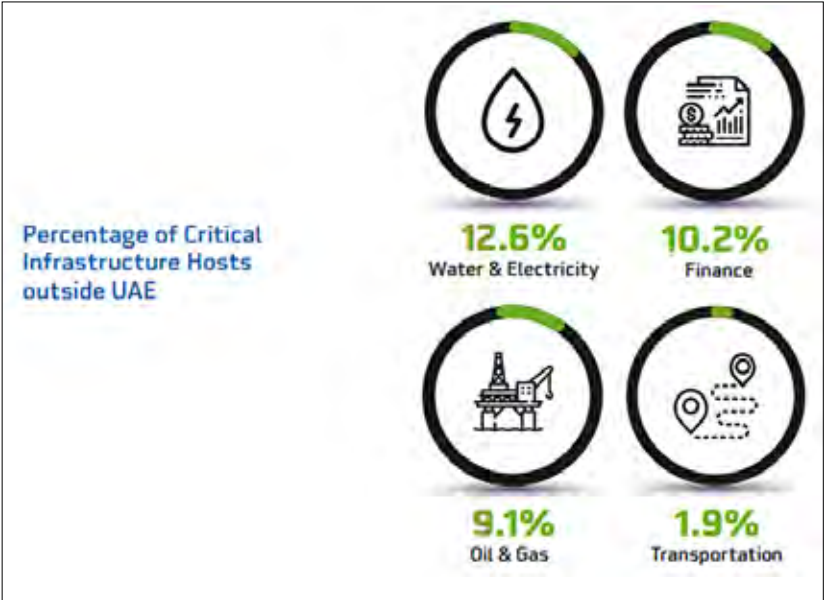
The financial, transportation, water and electricity sectors also face widespread risk from advanced cyberattacks.

DarkMatter's analysis identified intrusion sets such as Bitter, Molerats, MuddyWater, Chafer, DarkHydrus, Shamoon 3, OilRig, and DNSpionage, which are actively deployed in the region with the objective to disrupt critical infrastructure sectors. Shamoon 3 in particular has been deployed with the intent to sabotage major organisations.

The UAE has the second-highest



91% of organisations assessed by DarkMatter had outdated software and were missing critical security patches.



75% of observed UAE domains are hosted outside the country, placing sensitive data at high risk.

smartphone adoption rate globally and is one of the world’s most digitally interconnected societies. This digital ecosystem offers an expanded surface for cyberattacks. DarkMatter observed numerous incidents across the region

where critical infrastructure was compromised through technology-connected assets. Most of the attacks leveraged outdated and unsupported software, and weak passwords resulting in unauthorised remote access.

The report includes a list of organisational and technical cyber security practices for businesses and governments to implement to improve their security posture.

“Cybersecurity breaches in the region pose a genuine risk to critical sectors as cybercriminals harness new technologies to launch sophisticated and targeted attacks,” said Karim Sabbagh, CEO of DarkMatter Group. “The intent of the attacks we are observing is to undermine the progressive social, economic, and digital agendas in the Middle East. Organisations in the region have a short window of time to transform their cyber security posture and demonstrate stronger resilience in the face of escalating and increasingly sophisticated cyber security threats.”

“DarkMatter’s analysis indicates that public-facing assets in the UAE will continue to be targeted by global threat actors. Organisations must prioritise an improved security posture with continuous monitoring and patching of cyber threats to protect their assets and those of stakeholders,” Sabbagh added.

“In this digital battlefield, while organisations believe they have most of the security management controls in place to mitigate cyber security risks, the reality is that technical control and capabilities to address the cyber security challenge are markedly lagging behind. So, there is a considerable risk that if an attack happens, it may well be successful. The C-Suites must and can readily take steps to effectively manage holistically their security posture in order to be better prepared against escalating malicious attacks,” concluded Sabbagh.

Headquartered in the UAE, DarkMatter Group is a fully integrated digital and cyber transformation firm. ■

UAE amongst top five nations adapting to changes, KPMG 2019 CRI ranking



FIONA TULLETT,
Director, People and Change, KPMG
Lower Gulf.



UAE was placed fifth after Switzerland, Singapore, Denmark and Sweden.

Out of 140 countries, the UAE has ranked fifth in KPMG's 2019 Change Readiness Index, which ranks participating nations based on how effectively they prepare for and respond to major change events. The Change Readiness Index measured countries across three key pillars of capability – enterprise, government and people and civil society. The UAE is the only country in the Middle East and North Africa region to place in the top 10.

This year's edition of the Change Readiness Index focused on preparedness for climate change and nations' capabilities to address and mitigate associated risks. In this regard, the UAE surpassed several other developed countries, including the United States, the United Kingdom and Australia, placing fifth behind Switzerland, Singapore, Denmark and Sweden.

Exemplifying the nation's commitment to addressing environmental issues, the UAE

has developed a robust National Climate Change Programme to mitigate climate change by 2050. The National Climate Change Plan consolidates the country's climate action under a single framework and identifies strategic priorities, covering both mitigation and adaptation measures. The UAE's Vision 2021 also targets development of a sustainable environment and infrastructure.

The top ten performing countries of the Change Readiness Index remain largely unchanged from the 2017 report, with the exception of Norway, which has climbed from 11th to 8th place to replace Finland in the top ten. The EU performs above the global average in environmental sustainability compared to other regions. The 2019 Change Readiness Index, however, has noted that Europe's financial sector is falling behind the global average and North America, and is performing marginally better than

Developing Markets.

The 2019 Change Readiness Index is structured around three pillars enterprise capability, government capability and people and civil society capability, with sub indices for each pillar. It covers 140 countries divided into four income levels, and assesses their underlying ability to manage change. Countries included in this index were selected based on KPMG's ability to obtain sufficient or comparable primary and secondary data.

Fiona Tullett, Director, People and Change, KPMG Lower Gulf, said: "The UAE continues to make great strides in its endeavour to build a sustainable and clean future for its citizens. The government aims to invest AED 600 billion by 2050 to meet the growing energy demand in the country and ensure sustainable economic growth. To strive that the programme is successful, we will need to work together towards our common goal of a clean future." ■



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 SEAGATE

Landmark and HSBC complete cross border blockchain transaction using Voltron



(Left to right) Sunil Veetil, Regional Head of Trade, HSBC Middle East, North Africa and Turkey; and Rajesh Garg, Group Chief Financial Officer, Landmark Group.

Landmark Group and HSBC have completed a first-of-its-kind transaction that connected two independently-built blockchain platforms, proving their interoperability and showing how collaborative technologies can further accelerate international trade in the future. It also marks a major step forward in the Middle East's retail industry adopting blockchain.

The transaction involved a shipment from Bee Dee Industries in Hong Kong to Babyshop, Landmark Group's family retail brand in the UAE. A Letter of Credit was issued by HSBC using the Voltron platform and Landmark Group's initiated ReChainME platform, enabled seamless connectivity with its logistics partners at both ends of a key trading corridor.

This meant that all the key participants along the logistical supply chain could view documents and track progress of the shipment in real-time, thereby reducing the overall time to complete the transaction by up to 12 days, a 40% reduction. It also helped reduce the need for paper, as retail supply chains typically involve large numbers of paper documents that are screened and updated at multiple touch-points.

Voltron is a distributed ledger trade finance platform which digitises the Letter of Credit, LC process from application through to document presentation. HSBC has previously facilitated four major LC transactions with this technology across its global network, but this is the first time Voltron has been connected to a complementary

blockchain platform, and the first time Voltron has been used to issue a LC between the UAE and Hong Kong.

ReChainME is a permissioned blockchain platform initiated by Landmark Group. It ensures seamless connection amongst key participants involved in the transaction, resulting in greater transparency and accountability.

Voltron is a blockchain-based open industry platform to create, exchange, approve, and issue Letters of Credit on Corda, R3's blockchain platform. It is initiated by eight founding member banks, including Bangkok Bank, BNP Paribas, CTBC, HSBC, ING, Natwest, SEB and Standard Chartered, in partnership with Bain, CryptoBLK and R3.

Voltron will improve the trade finance process by simplifying letters of credit, delivering shorter settlement times, instant discrepancy resolution and simplified sanctions screening. Voltron is inviting banks, technology partners, and corporates to join the network.

Rajesh Garg, Group Chief Financial Officer, Landmark Group, said: "We saw the promise of blockchain technology and embarked on the journey. This is a huge milestone for us at Landmark Group. As a leading retail organisation in the Middle East, we are proud to have taken the lead in this area."

Sunil Veetil, Regional Head of Trade at HSBC Middle East, North Africa and Turkey, said: "We have seen several advancements in digitising trade, each with their own specialist network for secure communication, resulting in disparate digital islands. Being able to connect two complementary blockchain platforms is a significant milestone in the development of this technology. It also speaks to the dynamism and interoperability of Voltron." ■

GEMS partners with Siemens for technology transfer boosting K-12 transformation



(Left to right) Dietmar Siersdorfer, CEO, Siemens Middle East and UAE; and Dino Varkey, CEO, GEMS Education.

GEMS Education and Siemens have signed a Memorandum of Understanding to develop new and innovative initiatives designed to increase collaboration and integration between the education sector and industry. The new partnership with Siemens builds on Rahhal, an initiative of Dubai's Knowledge and Human Development Authority. Rahhal encourages schools to think outside-the-box and develop innovative learning opportunities that benefit students.

The launch event was held at GEMS FirstPoint School – The Villa, GEMS Education's newly appointed Centre of Excellence for Digital Industries. In attendance were a number of high-profile guests, including Dr Abdulla Al Karam, Chairman of the Board of Directors

and Director General of KHDA; Dino Varkey, CEO of GEMS Education; and Dietmar Siersdorfer, CEO of Siemens Middle East.

Through the GEMS Education-Siemens partnership, GEMS students will gain access to industry-level courses and qualifications, support from industry experts, and internships. They will also have the opportunity to be part of an energy efficiency programme that will be adapted into a case study specific to their school, while also partnering with universities for accreditation.

The new initiatives will be launched at FPS, with the school heavily involved in ensuring the programmes are suitable for students, embedding industry-level content into the curriculum,

and hosting competitions and talks. Opportunities will initially be available to secondary and sixth form students, before being rolled out to all age groups and across the GEMS network of schools.

GEMS Education is one of the world's oldest and largest K-12 private education providers. It is a highly-regarded choice for quality private education in the Middle East and North Africa region. As a company founded in the UAE in 1959, GEMS Education now owns and operates 49 schools and educates over 124,000 students in the MENA region.

Matthew Tompkins, Principal of FPS, said: "Schools of the future will evolve into hubs of learning, connecting young people with a personalised menu of opportunities linked to industry. Not all of these opportunities will be available at school, some will be in the workplace or in different learning institutions, while others will be accessed via cutting-edge technology from anywhere in the world. The future of education is being developed right now, and this calls for a pioneer to pull all the opportunities together. GEMS FirstPoint School is that pioneer."

Dietmar Siersdorfer, CEO of Siemens Middle East, said: "A strong partnership between academia and industry is key to developing sustainable knowledge economies, and ensuring students have the tools and skills they need to succeed. We have a responsibility to invest in future generations so they may embrace the opportunities afforded by a digital economy, and this partnership will demonstrate the positive impact of technology and hands-on training in education."

Cinépolis boosting visual transformation in Saudi Arabia through 6 cinemas, 60+ screens



Cinépolis will introduce Luxury, Premium, Macro XE, 4D Emotion, Junior auditoriums to the country.

Cinépolis, the largest cinema exhibitor in Latin America and fourth largest exhibition circuit in the world, announced locations of six new movie theatres in Saudi Arabia. The six cinemas will be rolled out across Saudi Arabia over the next two years, with the first due to open in Lulu Mall, Dammam, at the end of this year, four scheduled for 2020 and the sixth for 2021.

The Saudi General Commission for Audiovisual Media, issued the fourth exhibitor license for cinema operation to Cinépolis International under the entity Luxury Entertainment, which has partnered with Al Hokair Group for expansion in Saudi Arabia along with its regional partner, Al Tayer Group, in August 2018.

Cinépolis opened its first cinema in Bahrain in January 2019. Since then it has seen an ever-increasing following from the local community in Bahrain and Saudis alike. The opening of the brand's six cinemas

in Saudi Arabia will help to boost the economy through the recreational spend. A recent study by PwC revealed that Saudi Arabia's cinema market could potentially generate 60 to 70 million admissions and the box office market could be \$950 million in 2030.

Cinépolis will introduce its world-class cinema-going experience through high-touch theatre concepts, including Luxury, Premium, Macro XE, 4D Emotion and kid-approved Cinépolis Junior auditoriums to the country that is home to over 39.5 million potential moviegoers. The new cinemas will provide movie-goers with an unrivalled level of service, food, technology and the latest movies from around the world.

The new cinemas will feature Junior. The first of its kind in Saudi Arabia, Junior theatres in Saudi Arabia are set to be a huge hit with parents and youngsters, and have been designed to allow families

to enjoy their favourite movies in a welcoming and fun space that expertly caters to their needs. The Junior Theatre features a colourful Jungle Gym, complete with slide and ball pit, as well as fun bean-bag seating.

Luxury auditoriums are another format that will be featured in Saudi Arabia. They will include 180 degrees, super relaxing leather reclining seats with personal amenities, Maitre d' call buttons, personal bag storage and adjustable tables. Every seat allows the guests to be immersed in the best viewing experience and to enjoy Cinépolis' luxury service.

Macro XE auditoriums will also provide Dolby Atmos sound that creates a powerful audio experience thanks to the high-tech combination of the latest generation of audio speakers located throughout each of the venue's premium auditoriums. The screen is triple the size of an ordinary cinema screen and makes you feel like you are part of the movie. ■



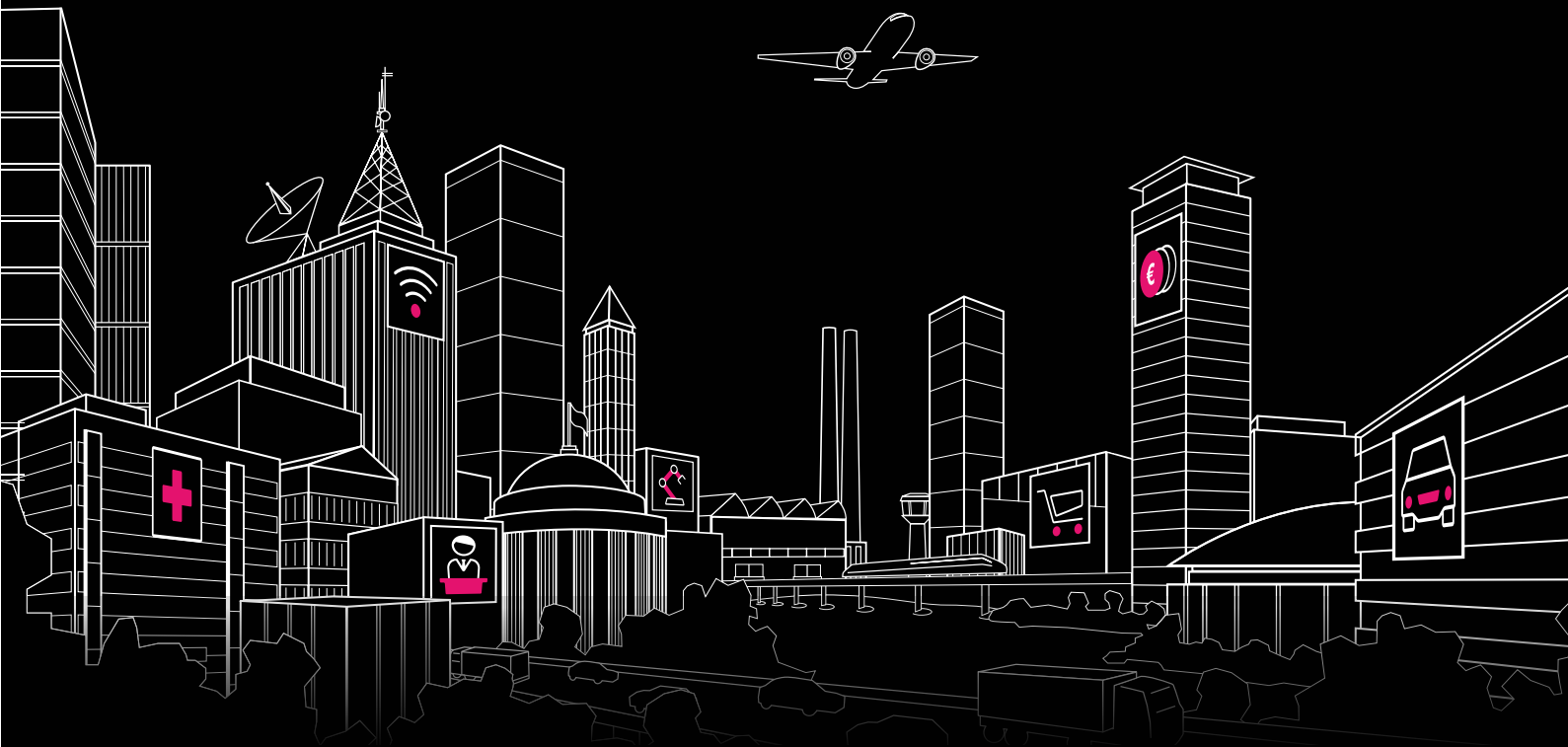
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TRANSFORMING HOSPITALITY WITH UNIQUE CUSTOMER PROFILES

Kerten Hospitality is using Ireckonu platform to remove data silos, integrate applications, and provide a single customer profile for its properties.

At Kerten Hospitality, digital and business transformation initiatives create the foundation to provide an enjoyable space for communities to live, work and play. Technology-enabled solutions allow Kerten Hospitality to craft authentic experiences for travellers, guests and residents.

The Kerten team succeeds in providing customised experiences by transforming the way data is accessed and used, by going beyond Big Data, and through streamlining business processes.

Kerten Hospitality utilises newfound insights specifically regarding guests' needs, before they even arrive. "Every minute not spent looking for relevant guest information such as preferences and loyalty status, is time well spent on enhancing the customer experience," says Marloes Knippenberg, CEO Kerten Hospitality.

As a specialist mixed-use operator, Kerten Hospitality runs multiple lines of business: luxury hotels and residences, serviced apartments, coworking business clubs and food and beverage brands. The hospitality brands include The House Hotel and Residence, Cloud7

Hotels and Residences and Ouspace, serviced offices and business club concept and Frikadell, the gourmet burger concept.

"We believe that across all our verticals it is important to know every touchpoint of every single customer," stresses Knippenberg. "One of our pivots is the establishment of a work environment where our business units are enabled to share valuable information that enriches individual experiences."

PAIN POINTS

For Kerten Hospitality, one of the biggest pain points is the amount of inaccessible data that lives across these different operational systems. The lack of consolidated property data for example, can inhibit operational efficiency. In addition, insightful guest data is siloed and inaccessible, resulting in limited knowledgeability towards guests' needs and expectations.

The aim of Kerten Hospitality is to harmonise data into a single source of truth in a way that benefits everyone. Whether it is a hotel, a workspace, or an F&B outlet, returning guests will be recognised within every Kerten vertical,

meaning their needs, preferences and requests will be known and applied prior to their arrival.

"Our technology partnership with Ireckonu will further accelerate our customer-centric service strategy and will enable our hotels and serviced offices to deliver smart, efficient and personalised guest experiences, operational efficiencies and return on investment," points out Knippenberg.

The specialist mixed-use operator Kerten Hospitality, recently selected Ireckonu as its IT platform partner to accelerate the group's customer-centric service strategy and to enable its hotels and serviced offices to deliver a personalised guest experience. The partnership with Ireckonu will drive the groups' digital transformation with the adoption of Ireckonu's technology platform.

Kerten Hospitality is rolling out a single customer record across every line of business, a transition that will form the basis of all of its customer-facing business activities. This will further enhance automation capabilities within customer relationship systems.

Greater connectivity, real-time collaboration between teams

MARLOES KNIPPENBERG,
CEO KERTEN HOSPITALITY.



Greater connectivity, real-time collaboration, access to a large pool of data, will empower teams to deliver value to residents and guests.



Kerten Hospitality is rolling out a single customer record across every line of business, a transition that will form the basis of its customer-facing business activities.

and access to a large pool of data globally will empower the teams to deliver value to owners, investors, residents and guests. It will create differentiated and impactful customer journeys.

TRANSFORMATION ROAD MAP

Kerten Hospitality has adopted a forward-looking and agile mindset, which requires consistent updating of guest data and reconciliation of profiles. This allows the diversified

hospitality service provider to deliver a seamless guest experience across all lines of business and channels, now and in the future.

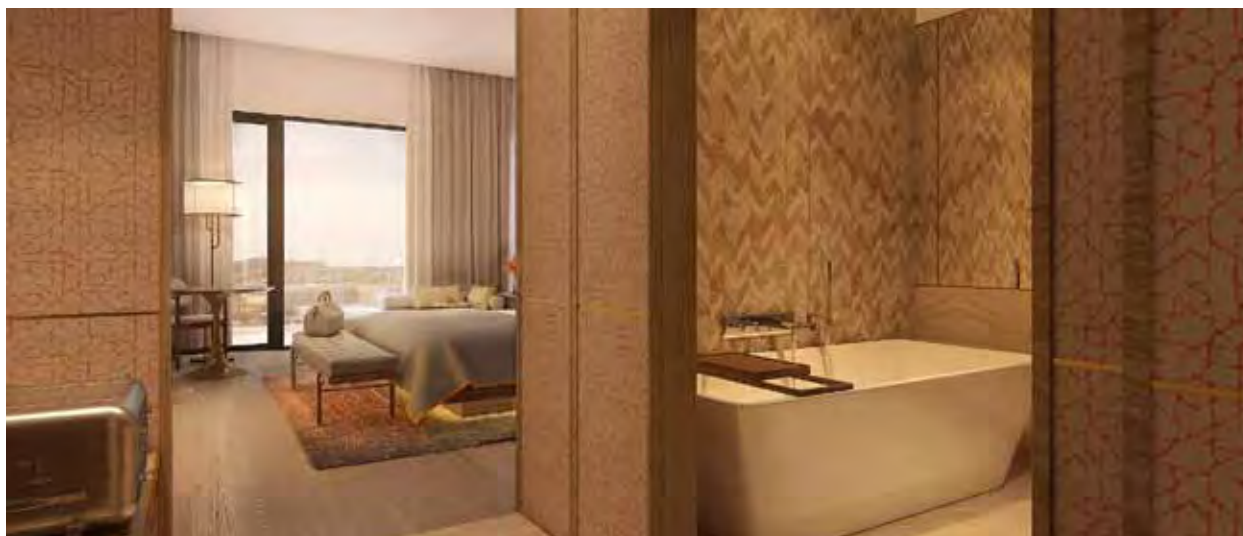
As Kerten Hospitality scales with digital technology, standard API specifications results in a plug and play approach towards delivering new capabilities in the future. These applications will also help to innovate further in the future.

The tech-savvy personalised order process of a Frikadell burger through

the Frikadell application is one example of how Kerten Hospitality is applying technology to benefit the overall guest experience.

The Frikadell burger-building application allows customers to build their own bespoke burger through a fun and interactive experience. Through the application, burger lovers can choose their preferred bun, meat, toppings and sauces.

With regard to the company wide change management,



The aim of Kerten Hospitality is to harmonise data into a single source of truth in a way that benefits everyone.

INTEGRATING WITH IRECKONU

Ireckonu is the core integration platform and by using this architecture, Kerten Hospitality will have a single, shared guest profile that is updated in real-time with relevant guest data and statistics, and shared instantly across every line of business. It will also provide real-time visibility into business operations and the guest journey from any location.

A single, instantly updated database is critical to servicing guests, engaging and marketing to them, as well as finding similar guests and profiles to enhance marketing campaigns and future offerings.

The Ireckonu integration platform will allow Kerten Hospitality to connect additional systems as it grows, while maintaining data integrity and automated processes with minimal effort and impact on its portfolio.

Ireckonu will be integrated into Kerten Hospitality's core property management systems, reservation systems, websites, service request system, and customer relationship management system. Kerten Hospitality will implement Ireckonu's Core and IKnowU products across all its hotels. The two solutions will work synonymously with one another.

Core will gather and consolidate data flowing within a property and showcase data in a viewable dashboard. IKnowU will implement the same data consolidation features with guests' profiles, offering a holistic depiction of each guest entering a Kerten property.

Ireckonu offers a hybrid middleware solution, the Ireckonu Middleware. This solution uses microservices and business logic to enable and manage the flow of data between on-premises and above-property systems. Ireckonu's middleware products, Core, IKnowU, IConnectU, Kiosk Checkin, provide top of the line data optimisation and increase the quality and quantity of accessible data from third party integrations.

Ireckonu also allows for monitoring of third-party integrations and consolidation of data across siloed databases. Its naturally formed data warehouse provides the ability to access enriched information for analysis and optimised reporting, including systems, bookings, reservations and guest profiles.

Knippenberg explains that the Business Transformation Manager is responsible for working with each business owner to acknowledge and plan for the change management activities within all functions.

Every digital transformation initiative, is assigned to a single business owner, ensuring transformation and commercial growth go hand in hand. The business owner is responsible for the expected outcome and for achieving the stated business benefits.

The business owner works closely with Kerten Hospitality's Business Transformation Manager. With this level of coordination, employees receive the appropriate training and information they require, the solution vendor sticks to a plan, and the technology is designed and rolled out as per the planned intent.

Kerten Hospitality is focused on implementing knowledge sharing, collaboration, and digital communication capabilities.

Knippenberg, reflecting, asserts that, "We cannot slow down our growth rate waiting for information. It is critical to our operations that knowledge is accessed easily and by everyone, globally, and in real-time." ■

HOSPITALITY TRANSFORMED A HUNDRED YEARS FROM NOW

Hilton and Futurologist Gerd Leonhard draw out the canvas of guest experiences and services a hundred years from now.

Today, every hotel and hospitality property try to create a personalised experience for its guests, so that they can feel associated with the property, and return to use its services again. In the future, digital technologies will be responsible for identifying the arrival of a guest and customising interiors and associated services to meet their requirements.

How will beverage, meals, leisure, childcare, fitness, exteriors, landscaping change in the next one hundred years, with technology is anyone's educated guess-scape.

Since its inception in 1919, Hilton has pioneered the hospitality industry, introducing first-to-market concepts such as air-conditioning and in-room television. Last year, Hilton became the first hospitality company to set science-based targets to reduce its environmental impact. Hilton is entering its second century with the same commitment to innovation, harnessing the power of people and technology to respond to guest demands. Its research paints an exciting future for the hospitality industry, highlighting the growing importance of human interaction in an increasingly tech-centric world.

Futurologist Gerd Leonhard says in 2119, we will still be searching



Technology will free up time for hotel staff to focus on what matters most.

for unique experiences, but they will be more personalised than ever. As technology shapes our lives, we will seek out moments of offline connection with others, including hotel team members who will help us truly get what we need from our stays. 100 years from now hotels will have to create opportunities to converse, collaborate and connect, delivering moments that matter, individually, to each and every guest.

Intergalactic getaways, fast-food nutrient pills, 2-3 hour working days and adaptable, personalised rooms that can transport guests everywhere from jungles to mountain ranges. These are some of the future trends that Hilton predicts will dominate

the travel and hospitality industry in the next 100 years.

Predictions for the hotel of the future:

EVERYTHING PERSONALISATION

Technology will allow every space, fitting and furnishing to continuously update to respond to an individual's real-time needs. The lobby will conjure up anything from a tranquil spa to a buzzy bar, giving every guest the perfect, personal welcome. From temperature and lighting, to entertainment and beyond, microchips under the skin will enable us to wirelessly control the setting around us based on what we need.



Only businesses that are inherently responsible and sustainable will survive the next century.



Outswim a virtual sea turtle in the pool, or challenge yourself to climb the digital face of Mount Everest.



Diets will include plant-based recipes and some surprising sources of protein.

HUMAN TOUCH

In a world filled with artificial intelligence, human contact and the personal touch will be more critical and sought after than ever. Technology will free up time for hotel staff to focus on what matters most: helping guests to connect with one another and building memorable moments

SUSTAINABLE EVERYTHING

Only businesses that are inherently responsible will survive the next century. Sustainability will be baked into everything about a hotel's design – from weather-proofed domes, to buildings made from ocean-dredged plastic. Hotels will act as the Town Hall of any community, managing local resources and contributing to the areas they serve with community-tended insect farms and vertical hydroponic crop gardens.

MENU SURPRISES

Diets will include more plant-based recipes and some surprising sources of protein: Beetle Bolognese, Plankton Pies and Seaweed Green Velvet Cake will be menu staples. Decadent 3D-printed dinners and room service will provide unrivalled plate personalisation. Chefs will be provided with biometric data for each guest, automatically creating meals based on preferences and nutritional requirements.

DIGITAL DETOXES

Outswim a virtual sea turtle in the pool, or challenge yourself to climb the digital face of Mount Everest, your exercise routine will be as unique as you are. What is more, exercise energy generated from workouts will be used to power the hotel, providing a zero-impact, circular system.

Guests could even earn rewards based on reaching workout targets. Pick up where you left off with trackable workouts and holographic personal trainers. Offline will be the new luxury as we seek to find moments of tech-free time. ■



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HOW IWIRE CONNECT HAS SET UP AN IOT NETWORK IN UAE

Ahmed Fasih Akhtar at iWire Connect is building a connectivity network to boost the adoption of IoT and smart city solutions.



AHMED FASIH AKHTAR,
Founder, Vice-Chairman
and CEO, iWire Connect.

iWire Connect is the exclusive distributor of Sigfox low power communication technology in UAE. Sigfox is operating in 60 countries globally and is a pioneer in promoting the usage of IoT devices. Sigfox devices are low power and low-cost devices and their operational costs are low as well. Sigfox is operating a 0G network that is low cost in comparison to the 2G, 3G, 4G, and 5G networks provided by communication service providers.

“We sell connectivity to devices,” explains Ahmed Fasih Akhtar, Founder, Vice-Chairman and CEO, iWire Connect. “We have built a public network, and we offer this network to anyone who wants to connect their devices to the Internet at a very low cost, compared to traditional service provider networks, says Fasih Akhtar.”

The business model of iWire Connect is similar to telecom service providers, who sell connectivity. iWire Connect is a transport mechanism for businesses to build their smart city and IoT applications upon and use as a framework. Customers use the iWire Connect network as a utility and pay for consumption.

Smart city applications are easy to set up and run operationally, while using the iWire Connect network for connectivity and data transfer. For customers who add their devices to the iWire Connect network, the data generated by their devices can be routed to the customer’s data centre or hosted

at iWire Connect’s data centre.

0G technology from Sigfox enables IoT solutions that were not feasible by traditional technologies such as Bluetooth, Wifi, and GSM. With IoT, businesses can manage their assets intelligently and eliminate bottlenecks that drag on cost. The use cases are typically around remote monitoring, asset tracking, cost optimisation, and automation.

Sigfox is the pioneer of low power, wide area communication technology, also known as 0G. It was founded in France in 2010 and set up the first commercial grade IoT network in France in 2013. Today it is available in 61 countries.

The devices that use Sigfox communication are low power and low cost, and have a battery life of five to ten years. They can communicate within a radius of 5 to 15 km. Sigfox provides its protocol, royalty free to semiconductors and mobile makers. It works with operators in each country to build a country wide network. Sigfox manages a global cloud for all its operators.

iWire Connect offers the following solutions to support use cases on its network: Smart cities, Street lights, Smart parking, Smart logistics, Smart utilities, Smart agriculture, Smart ID, Smart energy, Smart Fire Safety. In UAE, iWire is working with customers such as RTA, DP World, Total, MERAAS, Ministry of Interior, Abu Dhabi City Municipality. ■

KEY TAKEAWAYS

- The business model of iWire Connect is similar to telecom service providers, who sell connectivity.
- Customers use iWire Connect network as a utility and pay for consumption.
- Sigfox manages a global cloud for all its operators.

FACEBOOK, DEEPFAKES NEW CYBER SECURITY BATTLEFIELDS

The sheer pace of content creation on social media and development of AI tools is driving deepfakes, says Ziad Antoine Nasrallah at Booz Allen Hamilton.



ZIAD ANTOINE NASRALLAH,
Principal at Booz
Allen Hamilton.

KEY TAKEAWAYS

- Increasing consumption and creation of digital content is accelerating the extent of fraud in the area of fake news and disinformation.
- Usage of AI, machine learning, deep learning, is being used to automate the process of creating fake profiles on social media platforms.
- AI is used to extract digital content from social media and to build a video clip or imagery.

Digital transformation, artificial intelligence, Facebook are now becoming the battlefields of cyber security. Increasing attack surface due to investments in digital transformation are making digital organisations more vulnerable to threat actors. No matter how much you control the access of human beings inside an organisation's network, finally it is people who are working inside a network and they will always remain the weakest link. "We are seeing a lot of sophistication in such attacks," says Ziad Antoine Nasrallah, Principal at Booz Allen Hamilton.

Increasing consumption and creation of digital content is accelerating the extent of fraud in the area of fake news and disinformation. The usage of artificial intelligence, machine learning, deep learning, is being used to automate the process of creating fake profiles and fake news on social media platforms.

These campaigns can be targeted at a well-known personality, a nation state, or an event such as a general election. Artificial intelligence is used to search and extract digital content from social media and to build such a video clip or imagery.

In order to be effective, you need an army of such cyber trolls explains, Antoine Nasrallah. Therefore, cyber trolls are typically state sponsored activities used to achieve their objectives.

Unlike typical cybersecurity attacks, the objective of the campaign is not to inject malware but to spread misinformation. Artificial intelligence is also being used by threat actors to raise the sophistication of phishing attacks.

Another area of threat actor activity is in the convergence of Internet of Things, IoT and operational technology, OT, and control systems. Antoine Nasrallah points out that inside the region, close to 12+ billion new devices will be connected and will go online by 2021. Booz Allen Hamilton research indicates that 15% of such owners fail to reset the password away from the factory defaults. This means an estimated 2+ billion devices will be vulnerable to hacking in the region and can be used in a concerted denial of service attack.

Threat actors who target critical national infrastructure sites, spend months and years looking for ways to penetrate the establishment. Any attack on control systems and the industrial system can bring down the operation. "You can stop a major source of income for a country with OT attacks", says Antoine Nasrallah. Typically, threat actors will model such a large establishment in a virtual environment, waiting for the right moment to move forward. ■

GPS MOST OVERLOOKED VULNERABILITY IN SECURITY SYSTEMS

Sometimes the most overlooked element is the one likely to be most critical and GPS signal is an example, says Kevin Coggins at Booz Allen Hamilton.



KEVIN COGGINS,
Vice President of Strategic
Innovation Group, Cyber and
Engineering, Booz Allen Hamilton.

Kevin Coggins, Vice President of the Strategic Innovation Group, Cyber and Engineering, Booz Allen Hamilton, is an expert in position navigation timings, GPS and resilient systems. Coggins explains that in today's modern digital world everything needs GPS. One of the most important function of GPS is that it provides a standardised time signal, into whichever network its information is received.

Timing is the most critical element for modern society, since everything is synchronised around a standard time signal. "We would not be able to communicate on the Internet or 4G or 5G network without GPS", Coggins points out, since it is the GPS signal that delivers the time synchronisation. And the number one element is the time stamp. So many things are dependent on receiving accurate time. If there is loss of time or degradation of time you can have pretty severe effects, he says.

GPS is also the most overlooked technology we depend on. If there are more than one-time signals from GPS or PNT within the same network it will stop functioning. Or if two networks have different time signals then they cannot work with each other and you have disruption. "If the date is changed you can bring down emergency systems or if systems do not have PNT they will choke the same way", says Coggins.

The GPS receiver is the equivalent of a computer, and its antenna is

the equivalent of an Ethernet connection. The GPS receiver can be taken over by an overriding signal, whether malicious, accidental or non-intentional. "There is very little protection for the GPS receiver and anyone can generate their own signal and jam it", says Coggins. The GPS receiver gives an input of time and allows network synchronisation for modern communication. Using three to four satellites, the GPS device can accurately determine its own position.

For Coggins, he makes sure his customer systems are resilient and can recover from such a contingency. "We address their dependencies on GPS and PNT and make sure they are always going to work, when they need to work", he says.

The usage of GPS is a very high percentage of a nation's GDP, and yet we continue to implicitly trust GPS. Systems can become resilient either by involving a human or through automation. If it is a human, you will trust the human to make the right decision based on the right information.

In an automated system it becomes difficult, how do I trust and what do you trust. Anything you do in automation you are going to have a machine make a decision based on information. And, you need to have some degree of trust in that information rather than blind trust. ■

KEY TAKEAWAYS

- There is very little protection for the GPS receiver and anyone can generate their own signal and jam it.
- The usage of GPS is a very high percentage of a nation's GDP and yet we continue to implicitly trust GPS.
- Systems can become resilient either by involving a human or through automation.

HOW MAG LIFESTYLE IS USING SALESFORCE FOR INVENTORY

Real-time visibility of available property was a key requirement while selecting Salesforce, explains Ramesh Reddy at MAG Lifestyle Development,



*RAMESH REDDY,
Head of Information Technology at
MAG Lifestyle Development,*

MAG Lifestyle Development's interests range from affordable housing initiatives and high-end luxury developments to bringing wellness-focused living to the UAE. Ramesh Reddy, Head of Information Technology at MAG Lifestyle Development, points out that inside the business, Oracle and Microsoft Cloud platforms are being used to meet business expectations.

MAG Lifestyle Development uses multiple engagement channels to

identify the requirements of the customers. The dynamics of the business are to sell the property in real time as well as engage with customers in real time, explains Reddy. Since there are 50 sales advisors as well as brokers and agents, the status of the property inventory needs to be managed in real time. If the inventory of the property is not managed in real-time, sales of the property will be affected.

Therefore, any application selected by MAG Lifestyle Development, must meet multiple criteria to remove the pain points experienced by business. This includes, ability to maintain real-time inventory, inventory management, payment plans, property floor plans, customer sales criteria, price points, block and hold of property, selection of property. These criteria and expectations of business are met by Salesforce.

Another challenge faced by Reddy's IT department is to manage the property plans with flexible pricing options. Says Reddy: "Because the market is so dynamic, you need to win the competition in your area. Flexible payment plans need to be available to attract customers and sell units. Maintaining multiple payment plans for the units and managing those plans with discount offers is challenging, but is available in Salesforce", says

Reddy.

Another requirement is to provide property agents and brokers, access to MAG Lifestyle Development's pricing and inventory. "Majority of the property sales in the region is through brokers", says Reddy. Hence, brokers need to be provided access through an application that they can rely on, for them to effectively boost property sales.

Brokers need to be supported by providing them a tool that they can rely on. Processing of their commission needs to be as fast as possible, otherwise sales will come down, since majority of sales is through agencies.

MAG Lifestyle Development has selected Sales cloud, Service cloud, Pardot Marketing cloud, and Community cloud, from the Salesforce Cloud Suite. Says Reddy: "Our agenda is to maintain real time sales and serve the customers using service cloud and interact with the customers and agents using community cloud."

For the management of MAG Lifestyle Development, the ability to sell the properties and provide sales engagement and sales interactions in real time, is a dream come true. Applying and making available inventory in real time, is a very good approach and one of the best benefits that has been enabled by Salesforce. ■

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CINEMA IS TRANSFORMING SAUDI'S ENTERTAINMENT MARKET

Recent lifting of thirty-year old ban on cinema has catapulted the arrival of global players to enter an estimated Billion-dollar market by 2030.

Saudi Arabia has embarked on a new, transformational era of growth led by Vision 2030 towards economic and social development whereby leveraging the potential of non-oil sectors and subsequently improving the quality of life of its residents. In promoting culture and entertainment, one of the goals of Vision 2030, the government plans to specifically:

Attract local investors

and create partnerships with international entertainment corporations

Increase household spending on entertainment from 2.9% to 6% and develop a market of SAR 30 billion in recreational services

Armed with an investment budget of SAR 10 billion, Development Investment Entertainment Company, DIEC is acting as a catalyst in the

development of the cinema sector in Saudi Arabia and is projected to directly contribute SAR 1 billion to the GDP and create 1,000 direct jobs by 2020.

Lifting the 35-year ban on cinemas is one of the most visible and impactful initiatives undertaken by the government in Saudi Arabia, unlocking an untapped and lucrative economic opportunity. According to the Quality of Life Programme 2020, 45+ cinemas will be developed in Saudi Arabia by 2020.

The participation of AMC entertainment, the world's largest cinema operator and DIEC is expected to give a boost to the development of the cinema industry in Saudi Arabia. In April 2018, DIEC opened its first cinema in the King Abdullah Financial District and aims to open 50-100 cinemas across Saudi Arabia by 2030.

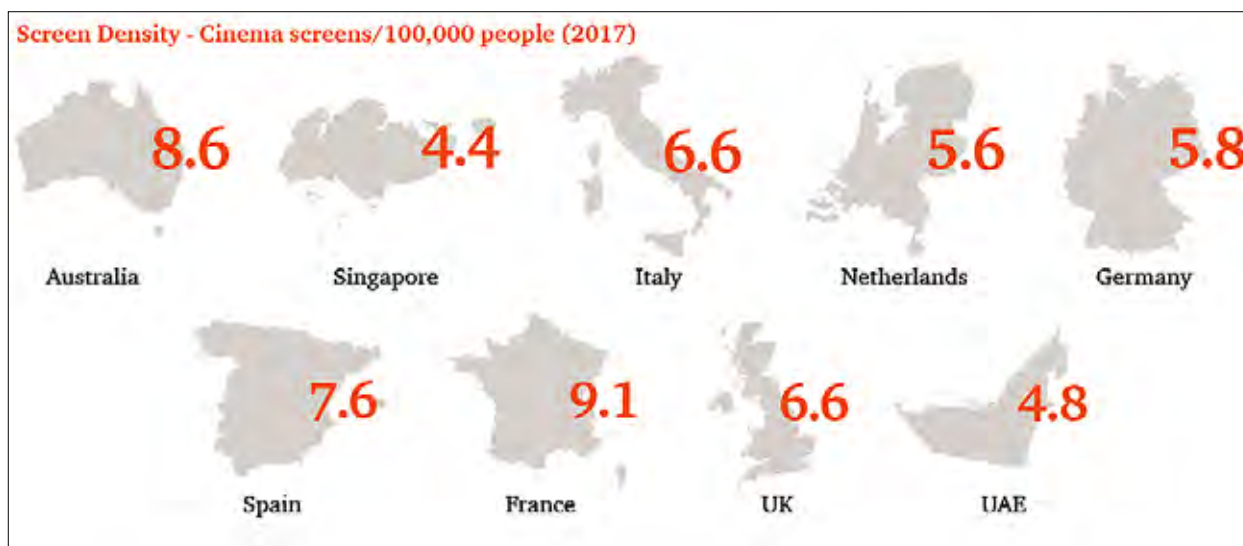
The fast-paced development of the cinema sector can be demonstrated by the opening of Saudi Arabia's second cinema by VOX Cinemas. Alongside DIEC, VOX has been an early entrant into Saudi Arabia's cinema market and plans to invest \$533M to open 600 screens across Saudi Arabia and provide 3,000 new jobs over the next 5 years to capture a share of anticipated demand. Most recently, IMAX signed a deal with VOX to partner on a minimum of 4 multiplex venues in Saudi Arabia.



Saudi Arabia's cinema box office market could be \$950 million in 2030 depending on pace of development.



With Saudi Arabia's population forecast to be 39.5 million by 2030, Saudi Arabia has the potential to absorb up to 2,600 screens.



Saudi Arabia has the opportunity to learn from global and regional markets and jump directly into successful cinema formats.



Lifting 35-year ban on cinema is one of most impactful initiatives undertaken by Saudi Arabia's government.

Several international cinema operators are also keen to get a foothold early in Saudi Arabia's promising cinema market and have signed MoUs with local or regional partners.

CONTENT SUITABILITY

As a new cinema market, the type of content that appeals to audiences in Saudi Arabia is still to be established.

Adam Aron, AMC's CEO expects the same version of movies shown in Dubai or Kuwait to be suitable for Saudi Arabia.

Around one third of Saudi Arabia's total population are expatriates, largely centered around the provinces of Riyadh and Makkah, with non-Saudis constituting 38% and 42% respectively. Saudi Arabia is home to ~3 million Indians which is the

largest expatriate community in Saudi Arabia.

As a result, content screened in Saudi Arabia is expected to range from global Hollywood blockbusters to Bollywood, regional and local films. In addition, VOX cinemas, through a partnership with 20th century Fox, will exclusively distribute Fox content in Saudi Arabia.

The cinema industry will also work to conserve and promote national heritage and talent by screening movies produced by local producers and will work towards exporting local content internationally. One of the Quality of Life Programme metrics' is to develop the local film industry with the goal of producing 13 Saudi movies by 2020.

With Saudi Arabia's population forecast to be 39.5 million by 2030, Saudi Arabia has the potential to absorb up to 2,600 screens.

Market benchmarks indicate an average of 6.6 screens per 100,000 inhabitants in developed markets excluding USA and Canada, which have a highly penetrated cinema market. While UAE is at the lower end of benchmarks, the screen density has increased significantly from 3.6 in 2012 to 4.8 in 2017.



Content screened is expected to range from global Hollywood blockbusters to Bollywood, regional and local films.

Tips to succeed

Market players should consider several factors as a first-time entrant in Saudi Arabia's cinema industry.

Location

Securing good locations is imperative for cinemas to succeed. Cinemas are largely a catchment play and cinemas in mall areas with strong footfall are likely to witness higher returns.

Content

Strong movie slate usually pulls audiences into cinemas. Mix of Hollywood, Bollywood and local content is likely to appeal to audiences with adaptation where required. Knowing your audience and effective programming can improve occupancies.

Formats

Saudi Arabia has the opportunity to learn from global and regional markets and jump directly into successful cinema formats. Cinemas are evolving from vanilla movie-going into experiences and industry would need to cater for different tastes and preferences.

Pricing

In the initial years, cinema demand is expected to far outstrip the supply. Industry players would need to adopt and experiment with different pricing models that are appealing to audiences. Pricing can be based on passes, time of day, day of week, seat configurations, types of screens.

Recent entrants

CinÉpolis, the fourth largest exhibition circuit in the world, and Al Tayer Group have partnered with Al Hokair Group and have been granted a Cinema Operating License.

iPic Entertainment has signed a memorandum of agreement with BAS Global Investments Company to develop 25 to 30 sites over the next decade.

Leading multiplex chain from India, PVR has signed an MoU with UAE based Al Futtaim Group for entry into Saudi Arabia and other regional markets.

CJ 4DPLEX has signed a deal with Cinemacity to open 3x4DX locations in Riyadh.

Kuwait National Cinema Company and Dubai based distributor Front Row Filmed Entertainment expect to develop 12 multiplexes in the next 3 years through their subsidiary Cinescape.

Al Rashed Empire Cinema consortium has also received a license from GCAM.

With many new multiplexes expected to open in the UAE in the next few years, the screen density will also be closer to the average benchmark.

Depending on how rapidly Saudi Arabia's market evolves, it could potentially generate 60 to 70 million admissions in 2030. PwC estimates Saudi Arabia's cinema box office market could be \$950 million in 2030. With non-admission F&B concessions and advertising typically comprising 35% of overall revenue, cinema industry has the potential to generate total revenue of \$1.5 billion in 2030 and develop into a lucrative revenue stream for the industry players and the

government.

As the cinema industry penetrates beyond the key cities and adopts several different formats 3D, IMAX, VIP, Kids, the prices are expected to vary a lot and could range from \$11-14 at the lower end to \$40 for high-end, luxury experiences.

Saudi Arabian residents have been known to travel to neighbouring countries such as the UAE and Bahrain to spend on entertainment. Increasing hospitality and cinemas within the country will help reverse this trend and inject recreational spend back into Saudi Arabia, stimulating the leisure sector. ■

Excerpted from Cinemas in Saudi Arabia: A billion dollar opportunity by PwC.

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INDUSTRIAL SECURITY WEAKENED WITH OT-IT RIFT

Integration between industrial control systems and IP digital system is challenging administrators, according to 2019 SANS OT-ICS Cybersecurity Survey.

The 2019 SANS OT-ICS Cybersecurity Survey explores the challenges involved with design, operation and risk management of an industrial control system, ICS, its cyber assets and communication protocols, and supporting operations. This year, SANS focused more broadly on the operational technology, OT domain inside organisations, because industrial control systems are interwoven and interdependent, while also actively exchanging information with a myriad of other systems and processes.

The 2019 SANS OT-ICS Cybersecurity Survey reveals a

growing maturity in identifying potential risk and detecting and remediating actual events. People are considered the leading risk for compromise, signaling the need for a blended approach to addressing OT-ICS cybersecurity, one not solely reliant on technology.

These initiatives emphasize the need to understand and chart the industrial control systems environment. Internet connectivity has opened industrial control systems network boundaries that historically were closed, well-defined and documented, resulting in the



We know from previous SANS research that the addition of things and mobile devices to ICS represents significant risk: Survey co-author and Director of SANS Industrials and Infrastructure business portfolio, Doug Wylie.

Organization Controlling OT/Control System Budget 2017 vs. 2019

Organization Controlling Budget	2017	2019	% Change
Operations	30.8%	48.7%	+17.9%
Enterprise IT	17.1%	31.6%	+14.5%
Shared budget between IT/OT	38.5%	29.4%	-9.1%

Adoption of OT/IT Convergence Strategy 2017 vs. 2019

Organization Controlling Budget	2017	2019	% Change
We have no strategy nor plans to develop one.	18.1%	15.7%	-2.4%
We have no strategy but are developing one.	31.0%	33.0%	+2.0%
We have a strategy and are implementing it.	37.9%	30.9%	-7.0%
We have a strategy in place.	12.9%	20.4%	+7.5%



The obvious concern about the risk that people represent, whether they are malicious insiders, careless employees or nation-state bad actors, is consistent across industries: Survey co-author and SANS Senior Analyst Barbara Filkins.

desire and need for visibility into critical communication links — especially wireless extensions to the industrial control systems architecture.

A comprehensive inventory of system assets, especially industrial embedded devices, becomes even more difficult in light of more porous system boundaries and virtual assets, leading to blind spots as to where and how much risk affects the modern industrial control systems.

Achieving these initiatives, however, may be harder than anticipated. Security personnel working to defend their environment focus on the current and immediate threat landscape. For OT-ICS, this includes IoT growth, accidental insiders, supply chain issues and malicious external actors. In 2019, the leading business concerns are not fully aligned with the current threat landscape, flagging potential conflict in achieving the desired initiatives if an actual attack against the business occurs.

Effective operational technology-control system

security begins with a clear vision and strategy of where the organisation is and where it wants to go. It depends on the architectural soundness of the entire design and its operations that span operational technology and IT, and are even external to the enterprise—not just the hardware and software of the system and-or network, but the people and processes as well.

IT AND OT CONFLICT

Historically, engineering-focused operational technology has concentrated on safe, reliable and profitable production and has been unaccustomed to information governance issues relating to compliance. On the other hand, IT—which generally had a longer history of information security and protection, assessment and audit—has traditionally lacked the situational awareness and appreciation for tangible physical impacts that can result and must necessarily be considered for the operational, automated domain.

Collaboration and communication must occur

between both camps to avoid conflict and to ensure that contemporary business objectives can be met. This is especially true as more operational technology architectures shift to take advantage of off-premises services, and as Industrial IoT solutions are adapted into operations that require persistent internet connections that pass-through IT and deep into the operational technology domain.

The essential need for IT and operational technology collaboration and communication often shows itself clearly during incident response activities. Close to 60% of organisations in this survey first consult a variety of internal resources when signs of an infection or infiltration of their control system cyber assets or network are detected. Forty-five percent involve their company leadership, including the legal department, indicating that organisations are aware that accountability and culpability for security are linked to C-suite positions.

From policy and implementation standpoints, results indicate IT retains the upper hand. For 54% of organisations, the CISO-CSO establishes security policy around operational technology assets, while the IT manager 42% bears primary responsibility for implementation of the related controls.

On the other hand, operations and IT jointly control the actual budget, where operations maintain an upper hand. Comparing 2017 to 2019, SANS notes that the allocations for both operations and IT have grown, with a corresponding decrease in the shared budget.

This dichotomy emphasizes how essential it is that a good relationship exists between operational technology and IT, especially where operational

technology can help IT gain the situational awareness to address the unique risks for operational technology-control systems.

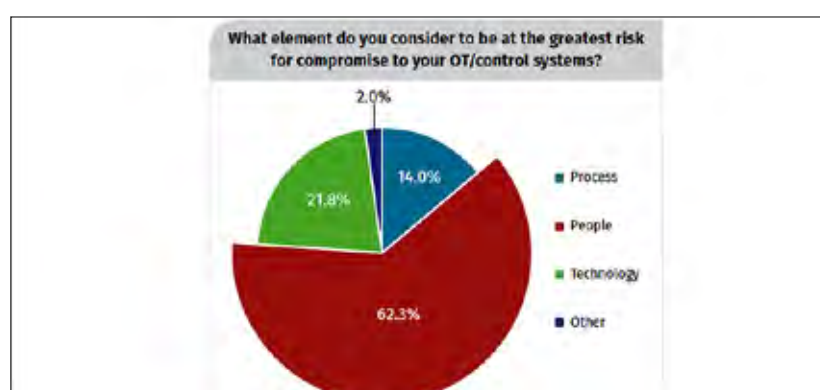
According to 65% of respondents, the current collaboration level is moderate or better, and the trend is definitely toward growing collaboration. Since 2017, there has been progress by organisations either adopting or planning to adopt an ongoing implementation and management strategy or plan that addresses operational technology-IT convergence.

It is also imperative that the C-suite has proper visibility into IT- and operational technology-related activities, especially because the budget may be spread across numerous activities. The absence of a well-thought-out

IT and operational technology implementation and management strategy can lead to wasted investments and unknown additional risks to operational technology-control systems that may be otherwise avoidable.

LEVELS OF RISK

Risk obviously drives organisations' approach to operational technology system security. Slightly more than 50% of respondents perceive the level of OT-ICS cyber risk to their company's overall risk profile as either severe – critical or high. People 62% present the greatest risk for compromise to an organisation's operational technology-control systems—not surprising, because the human element lies at the heart of cybersecurity incidents and breaches.



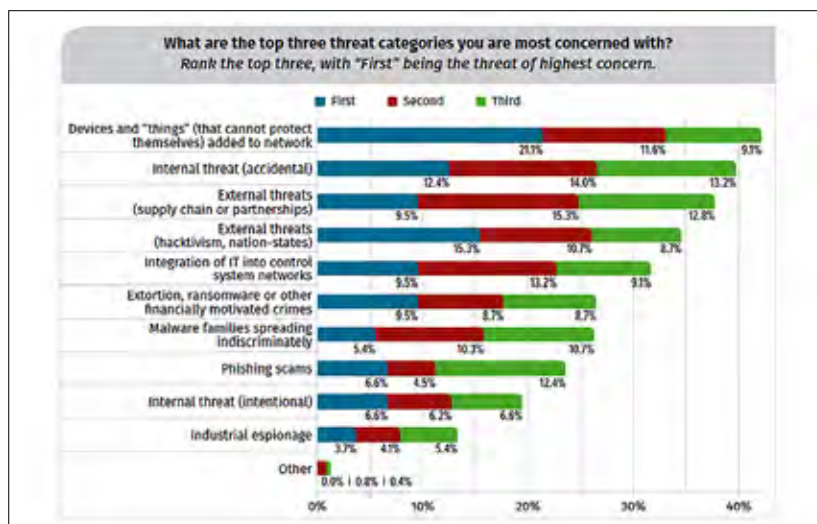
People is a broad risk category, encompassing external and internal actors, intentional malicious to unintentional accidental, careless actions. Of possibly even greater concern, however, are the 28% involving insiders. Insider threats are particularly difficult to guard against, especially in the OT-ICS space, where situational awareness and process knowledge are essential to recognising a potential safety or security issue.

Furthermore, it is not uncommon in the operational technology domain for industrial control systems personnel to carry higher privileges than necessary since technical options to restrict access may not be available or feasible, or these higher-level administrative privileges are broadly viewed as insurance available to be used during unforeseen events. This situation is exacerbated by staffing as well as technology limitations

THREAT CATEGORIES

The leading concern, and top threat category overall, are devices and things that cannot protect themselves being added to the network, generating renewed emphasis on secure connectivity for an industrial control systems infrastructure as well as the need to identify and characterise these items that are being attached to critical networks.

The industrial control systems community recognises the importance of guarding against external threats. Supply chain relationships and partnerships also represent a leading threat category. An incident leading to disruption, damage or destruction that is encountered by an organisation within a given supply chain can have a cascading effect on other members of that supply chain that rely, directly or indirectly, on the product or



services of the affected party. Some feel that cybercrime in the industrial sector has reached pandemic proportions, fueled in part by the IoT explosion and the vulnerabilities devices introduce into the industrial control systems.

Organisations must remain focused on the increasing potential of a nation-state attack, which can damage or destroy critical systems and/or cause denial of service. Attackers look to monetise the access and control they gain into systems, devices and critical information.

Internal threats, although accidental, are the second highest overall threat category. However, the activities that can help remediate this concern—cybersecurity education and awareness, and security policy and procedure discipline—remain relatively low as a business concern and, therefore, not a priority despite being a leading initiative.

NETWORKING OT AND ICS

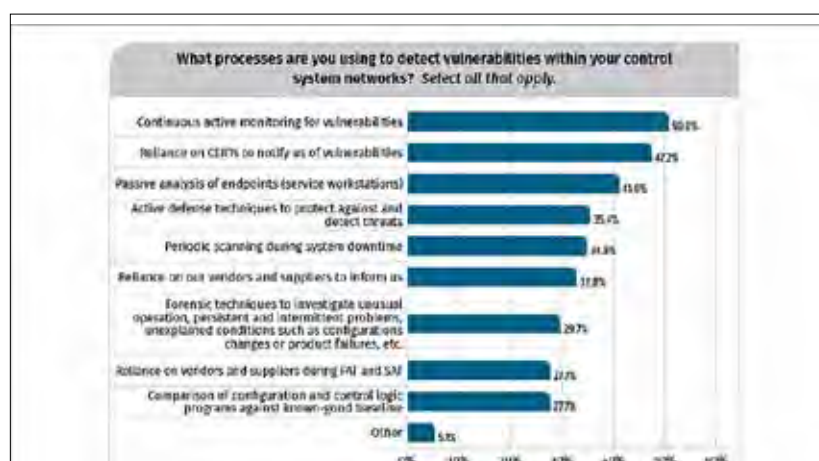
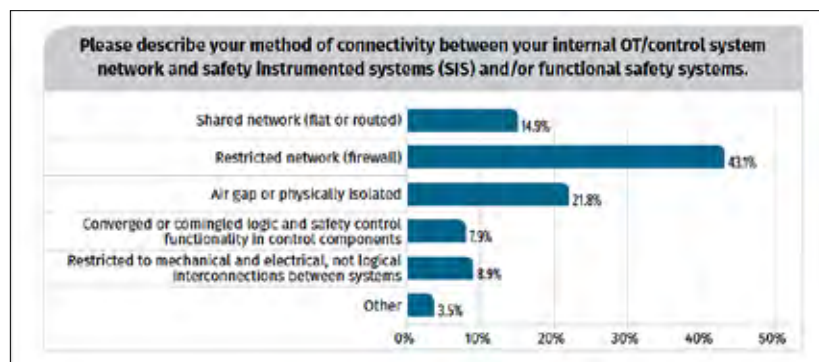
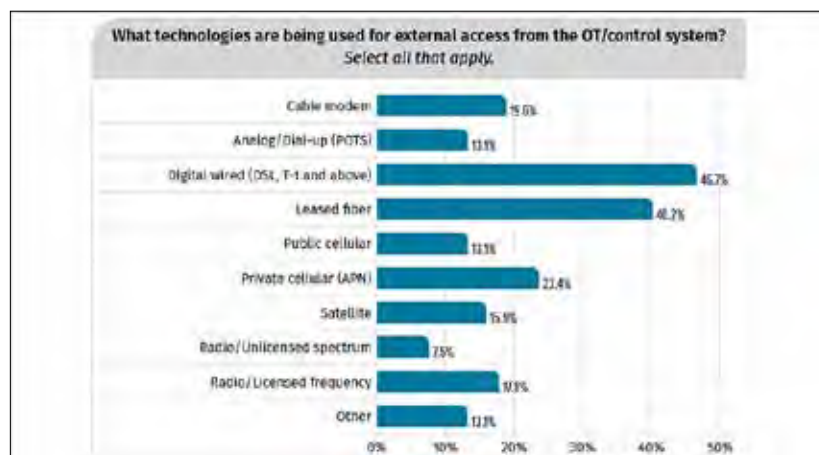
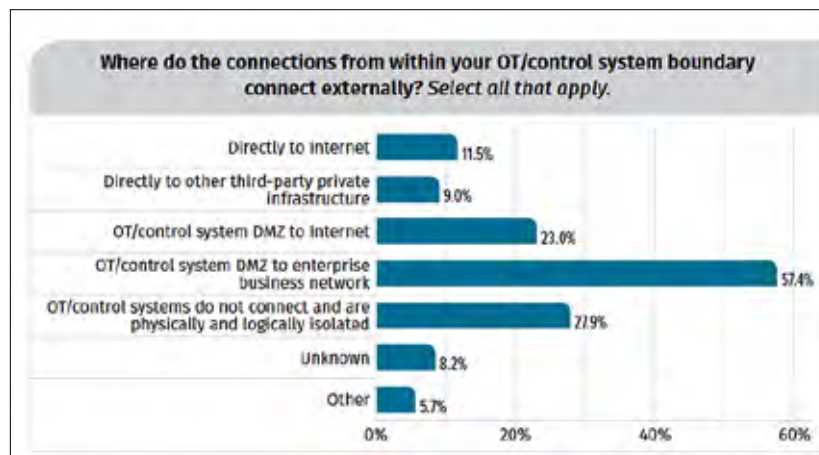
SANS sees a potential issue with organisations not understanding the vulnerabilities inherent in wireless communication devices and protocols and, therefore, the potential risks.

Organisations need to be aware of best practices for securing their nonwired connections, while also becoming proactive to plan and prepare for even faster product and technology changeover as end-of-useful-life situations arise.

Knowing the boundary also implies knowing what system assets lie within that boundary—the assets that comprise the system and must be protected. Only 36% of respondents claim that they have a comprehensive overview of all the elements of control system security for their enterprise or plant. The other implication that comes with a defined boundary is having control over what crosses the boundary.

Respondents did not rate wireless communications and protocols as subject to either high risk or impact related to compromise, yet arguably these in Use for External Connections represent some of the most rapidly evolving technologies, and sometimes the most reachable without physical access to an attacker in proximity to a system.

Increasingly, the physical perimeter of the industrial control systems is a poor representation of the actual logical perimeter. Over time, the notion of both a physical



and logical network perimeter in industrial control systems may evaporate altogether as control, configuration and data collection functions continue to fluidly move.

THREAT INTELLIGENCE

Enterprises are moving away from reliance on external third-party service providers, and instead are using internal resources. Looking at the budget initiatives for the next 18 months shows that 30% are planning to invest in general cybersecurity awareness programs for employees and 29% in cybersecurity education and training for IT, operational technology and hybrid IT-OT personnel as opposed to 13% that plan to increase consulting services to secure control systems and control system networks.

Organisations are depending on trained staff as first detectors and defenders. Since 2017, there has been a 23% increase in the use of trained staff to search out events, along with an increased use of anomaly detection tools to identify trends. This trend indicates a more proactive, rather than reactive approach to OT-ICS security.

In 2017, 53% waited for their industrial control systems vendors to inform them of vulnerabilities in their control system or to supply a patch. In 2019, 33% rely on their vendors and supplier to inform them of a potential weakness. Reliance on vendors and suppliers during FAT and SAT has fallen from 40% in 2017 to 28% in 2019. Slightly over 50% are using continuous active monitoring to detect vulnerabilities. ■

Excerpted from SANS 2019 State of OT-ICS Cybersecurity Survey.

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YOU CANNOT DICTATE ORIGIN AND PACE OF DISRUPTION

Technologies will become simpler to use, shifting critical success back to business, explains Sami Esber, President MIDIS SI Group and Board Member MIDIS Group.



SAMI ESBER,
President MIDIS System
Integration Group and Board
Member MIDIS Group.

Across the Middle East, the word digital transformation, is becoming increasingly familiar to business decision-makers and business owners. It is worthwhile to take a deep breath and reflect on what this is supposed to mean for someone outside the information technology industry.

Whether digital or business transformation, these are all-encompassing terms, and refer to those organisations that are embarking on a path of innovation, that has been rolled out by bringing digital technologies into the center of the organisation's business.

On a broader scale, such organisations would have adopted digital technologies and rebuilt their sales models, in a particular vertical market, offering completely new products or services and customer experiences, while significantly influencing an extended eco system of supplier partners.

For such organisations, the level of innovation at which they operate, is sufficient to disrupt the incumbents and their existing market dynamics as well as peripheral ecosystems.

We can therefore summarise and say that the complete ecosystem of digital and business transformation includes the innovator or the disrupting organisation; various disruptive technologies that have been adopted by the disruptor; the vertical market segment in which the disruptor operates; and the peripheral and surrounding ecosystem of input and output supply chain partners.

Real transformed organisations do not only just innovate. They also disrupt existing market leaders and their legacy of established ways of working with established suppliers.

One common confusion is the inability of existing industry players to distinguish between what is a trend or a fad and a real disruption introduced by a market disruptor. A trend does not disrupt or overturn established market rules and norms. A disruptor does just that and not only affects the established market and existing eco systems but also often extends peripherally as well.

Another reason why such innovators, disruptors, or leaders in business and digital transformation, do not get picked up on the radar of incumbents is because they are usually off their radars.

Transformation leaders, innovators and disruptors, almost always leverage technologies that are not being used by incumbents and stalwarts. Their innovative business models, services and products, leverage disruptive technologies that are not being used by incumbents.

Global research organisation, IDC classifies these technologies as a combination of innovation accelerators and the third platform of information technology. According to IDC, the Middle East and Africa region is now poised at the tipping point, where all accelerators are pointing forward, towards rapid adoption and increased spending.

These include digital technologies like cloud, mobility, big data, analytics, as well as Internet of

DIGITAL NATIVE ENTERPRISES WILL CHALLENGE LEGACY INCUMBENTS AND THESE WILL HAVE NO CHOICE BUT TO TRANSFORM THEMSELVES.

KEY TAKEAWAYS

- Pace of transformation is not set by markets themselves, but from outside markets and by mostly unknown players.
- Another reason why disruptors do not get picked on the radar is because they are usually off the radars.
- According to IDC, the Middle East and Africa region is now poised at the tipping point.
- Traditional businesses will have to start asking themselves - how can we become the Uber of our industry.
- Going forward disruptive technologies will only become better in improving customer experience and customer journey.
- The real challenge in transformation will turn towards the organisation, its people and its leaders.

Things, blockchain, artificial intelligence, 3D printing, and virtual and augmented reality.

According to IDC, this region spent more than \$20 billion in 2018 on digital transformation and will more than double, passing \$40 billion, by 2022. 89% of organisations in the Middle East and Africa now view digital transformation as being central to their corporate strategies.

The tipping point implies that digital transformation has now reached a macroeconomic scale, and will increasingly become the core of industry decision making.

More and more digital native enterprises will challenge legacy incumbents and stalwarts and these will have no choice but to transform themselves. This will be at a pace not set by their markets and themselves, but from outside their markets and mostly unknown players.

In order to survive, traditional businesses will have to start asking themselves - how can we become the Uber of our industry. And more importantly can we really become an Uber of our industry.

To become an Uber, legacy incumbents will need to relook at their organisational culture to decide if they have fostered an innovative climate; ask whether the Board has enough appetite and vision to survive this generation of digital challenges; assess whether the organisation has sufficient

internal strengths and resources to reskill itself; and skillfully adopt digital platforms while reengineering business processes around these new platforms, amongst others.

In the past, disruptive technologies bringing about transformation, manifested themselves in the form of better and better devices, compute infrastructure, machines, in other words hardware. Going forward disruptive, digital technologies will only become better and better in improving the customer experience and customer journey. They will become more and more experiential, opening up new opportunities to discover the customer and their expectations.

Thanks to cloud platform delivery, they will also become less challenging to use and apply. The real challenge in transformation will increasingly turn towards the organisation, its people and its leaders.

Should the organisation follow the strategy of leading the pack or following the pack, while building the new ecosystem, left behind in the wake of the pack leader?

Internally, business and technology decision makers need to collaborate strongly so that transformation is homogenised internally and works end to end. Often times, businesses may also need to partner with specialist firms to kick start transformation in organisations and to accelerate them in their journeys. ■

Executive summary

How countries prepare for and react to sudden shocks or long-term trends has a significant impact on the success of citizens and institutions. The Change Readiness Index (CRI) captures the ability of a country's key sectors to capitalize on today's greatest challenges, including climate change.

About the CRI

6 new countries added



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Croatia



Estonia



Gabon



Mauritius



Uzbekistan

The CRI is comprised of three interrelated pillars

Government



Characteristics of the Top 10



6/10

have been in the Top 10 since 2015



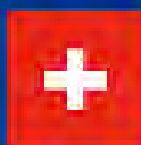
5/10

are in the Top 10 of the Environmental Performance Index



5/10

are in the Top 10 of the WEP's Inclusive Development Index



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✓ The CRI now covers 140 countries

✓ Secondary data include over 125 variables

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Enterprise

People & civil society



The climate challenge

Climate change is one of the most important challenges facing the global community.

The cost of adapting to climate change in developing countries could rise to between

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↑ 4–5X greater than previous estimates (UNEP 2016)



The data and insights provided by the CRI allow users to pinpoint opportunities at a regional and country level.



There is no shortage of capital seeking long-term investment opportunities. Risk-sharing investment models can catalyze resources for innovation in sustainable energy.



Effective climate mitigation and adaptation requires cooperation across all sectors — public, private and civil society — to build institutional capacity, engage communities in decision-making and to scale solutions.

SOURCE: 2019 CHANGE READINESS INDEX BY KPMG.



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