

Middle East

# Point of View

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**I am SAM**

Technology and cyber risk  
management

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**Embrace the ordinary**

Demystifying innovation

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**A room with a view**

What is driving hotel  
investment in the region?

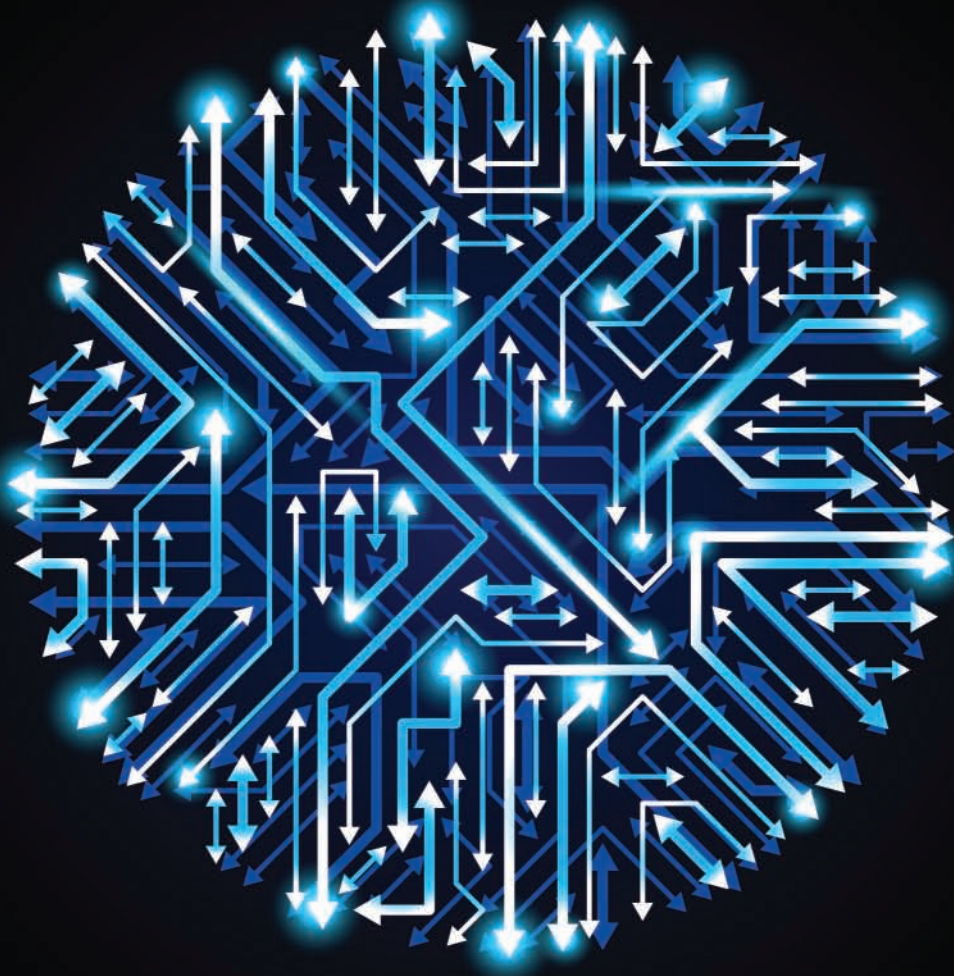
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**The future is here**

Family business vs.  
Industry 4.0

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The possible is now



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since 1926



# A word from the editorial team

The world is worried.

Normal. On the cusp between old and new modes of living and operating, it is only natural to feel anxious. Our only other option is to put our head in the sand and wait for the storm to blow over but that will only make us more alien in a world we are already struggling to understand.

Fiction has often depicted machine trying to take over man in a violent battle for supremacy but we can now see that is not the case. The machine is infiltrating our lives, slowly, insidiously, pervasively, making itself indispensable, and making us increasingly dependent on it, sometimes to save our lives.

But what is scary is not change *per se*. Change is good. Change is progress and progress is inevitable. At the source of our fear, our worry, our anxiety, is the pace of change. It is this rapid pace of change that is forcing us to adapt, and quickly, our way of thinking, our way of seeing and our way of doing. It is, once again, the fittest, those who are quicker to adapt, who will survive.

This issue of *Middle East Point of View* delves into this new world order brought on by the Fourth Industrial Revolution and how it affects businesses. In *Family business vs. Industry 4.0*, Walid Chiniara and Yasmine Omari sum up the situation perfectly when they say: "There is no room for complacency in this new era." Whatever we call this revolution, "the fact remains that these technological advancements are well and truly upon us and have become a staple of our everyday modern lives, fundamentally altering the way we live, work, and ultimately do business. In order to remain sustainable and successful, family businesses must rapidly adapt to this new paradigm, adequately assessing their threats and risks."

This new era is one where augmented reality is transforming the way we work.

In their *Deloitte Review* article, *More real than reality*, Brenna Sniderman, Cary Harr and Joe Mariani write: "In these data-rich, fast-paced uses of AR, human-machine interaction goes beyond a simple interface between worker and tool; the human and machine become a true team."

In their article on e-discovery of data, *Cherchez l'aiguille*, Andrew Pimlott and Boray Altunisler discuss how "with increased adoption of cloud technologies, data could now be spread across various geographies and jurisdictions, thus exposing it to increased data privacy and mobility regulations." A harsh reminder that no progress is without risk.

Naturally. Nithin Haridas and Huzaifa Hussain assess cyber and technology risks in their article on software asset management, *I am SAM*. "Managing and maintaining software assets cannot be neglected," they say, "and it is also an overwhelming problem if not planned and executed effectively. Unaccounted for software or applications within an enterprise could potentially introduce risks related to compliance, operational efficiencies, and security."

But in this brave new world, it is comforting to know that sometimes tradition trumps progress. In *Demystifying innovation*, Valter Adao and Rohit Majhi advocate the tried and tested formula of discipline and structure to the success of any innovation program. "In order for an innovation program to be successful it needs to be incredibly well-structured, well-disciplined and well-governed. Programs that are based on being creative and lack that structure are almost always guaranteed to fail," they write.

Of the old, tried and tested, very few sports surpass football as a source of entertainment and passion. Simon Cory-Wright believes local football leagues in

the Middle East region "should find ways to harness fans' broad-based passion for the game and direct it towards a deeper engagement with local football," in his article on engaging football fans in the region, *A challenging tackle*. "Even in expat-dominated Gulf states," he writes, "over 80 percent of fans have a favorite local team."

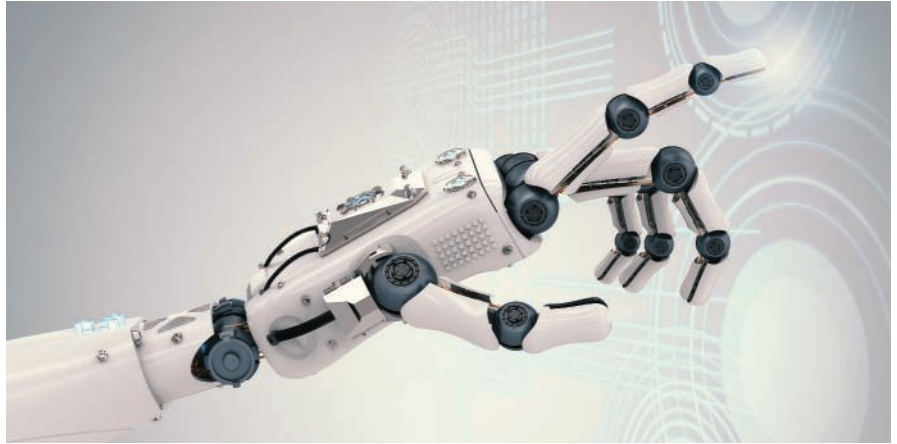
Local is also a key driver when it comes to hotel investment. Grant Salter, in his article, *A room with a view*, looks at drivers of investment in the GCC hotel sector. "While the hotel industry in the GCC looks to attract international interest, investment remains primarily driven by local investors," he writes. "From a local investor perspective, key motivations include longer-term investment, portfolio diversification, income returns and status through brand association."

Finance and audit are also trying to stay apace of changes with new standards being introduced regularly. IFRS 9 comes into effect on 1 January 2018 and Saumya Krishna looks at its effects on companies' impairment reviews. In *IFRS 9: ready for impact*, the author asks if we are ready for the shake-up and writes: "Born from the financial crisis to change the way banks and other financial institutions account for loans and other financial assets, organizations should not underestimate its implications on their internal control system, financial statements and the bottom line."

We live in a world where we can no longer stop learning, no longer stop developing. At the *Middle East Point of View*, we are glad to contribute to our readers' learning experience by continually updating them on the hot topics affecting the Middle East region today.

**ME PoV editorial team**

# Contents



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## 06

### **Demystifying innovation**

Embrace the ordinary

Valter Adao, Rohit Majhi and  
Christian Gemayel

---

## 30

### **More real than reality**

Transforming work through  
augmented reality

Brenna Sniderman, Cary Harr  
and Joe Mariani



---

10

**Cherchez l'aiguille**

Mining for facts in the era of unprecedented data growth  
Andrew Pimlott and  
Boray Altunisler

---

16

**Family business  
vs. Industry 4.0**

Walid Chiniara and  
Yasmine Omari

---

20

**A challenging tackle**

Engaging football fans  
in the Middle East  
Simon Cory-Wright

---

24

**I am SAM**

A strategic initiative to  
manage cyber and  
technology risks  
Nithin Haridas and  
Huzaifa Hussain

---

42

**A room with a view**

What is driving investment in  
the Middle East hotel market?  
Grant Salter

---

46

**IFRS 9: ready for impact**

Are you ready for the  
shake-up?  
Saumya Krishna



# Demystifying innovation

Embrace the ordinary





Innovation has become a central theme in discussions across the Middle East region as countries try to capitalize on the demographic dividend and move away from industries that depend on natural resources. It is important for organizations to take stock of what lies behind the word and what it means for their businesses. This article is aimed at large and multi-national corporations headquartered in the region, and state-owned entities that, while linked to state, have a mandate to achieve growth in order to contribute positively to their economies.

#### **Principle one – Have a proper understanding of innovation**

“Innovation” has become a buzzword in business, sometimes to its own detriment. Popular culture refers to innovation as something that is very creative, that is ideas driven, that leverages the millennials, and that requires a campaign in order to be successful. While we do believe these factors to be important, they are certainly not at the core of an innovation

program. Innovation should be characterized by well-defined programs that aim to assist organizations achieve quantum growth—looking for new sources of revenues that don't exist in the business today—or helping organizations create their second core. This is particularly important if they have a good core business now but may come under threat in the future once a variety of global factors start taking hold (e.g. digitalization.) Innovation programs, especially those that use exponential technologies, can help organizations move towards their second core.

#### **Principle two – Set big and bold ambitions**

It is critically important for an innovation program to get traction inside the organization if its growth ambitions are to be substantial. If growth is not substantial, it is seen merely as an incremental program in the organization to unlock a few additional percentage points of growth, and quickly loses momentum. In a successful innovation program, you would typically double the business, with a three-year program, measured over a five-year period.

Big and bold ambitions, articulated unequivocally, in clear precise targets, get the business to pause and pay attention to what needs to be done. It is essentially equivalent to creating a burning platform in the organization that says: “We are going to go through significant change, and we are going to have to be incredibly focused,” and “our success as an organization and your success as executives or as individuals in the business needs to be set and calibrated to our growth ambitions.” If you as a leader don't set this ambition, then the organization doesn't take your program seriously and it will take it as

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another campaign inside the business that they don't have to lose any sleep on. The temptation will be there to maybe start small and build the program over time as you enjoy success. Our advice is: "Don't do that!" If you are going to embark on this journey. Start big. Be ambitious. To the extent that you might frighten the organization with the goals that you set.

American aerospace manufacturer and space transport services company SpaceX is a great example. It has set the ambitious goal of sending a manned mission to Mars by 2024. This has resulted in the company making some rather phenomenal leaps in engineering in a rather short period of time. SpaceX rockets have achieved costs per launch that are about 10 times cheaper than the federal space agency National Aeronautics and Space Administration (NASA.)

### Principle three – Be well-structured, well-disciplined and well-governed

The third and final point is that in order for an innovation program to be successful it needs to be incredibly well-structured, well-disciplined and well-governed. Programs that are based on being creative and lack that structure are almost always guaranteed to fail. The best and most successful programs set up the governance structure that manages that program from the outset, as well as the structure that supports the program inside and outside the organization, and instills the discipline of doing things against the timeframe in which they need to be done. This is important for an organization because of the common myth in business that innovation should be left unstructured. From our experience, it is terribly important that the people who judge and nurture the potential of new

In order for an innovation program to be successful it needs to be incredibly well-structured, well-disciplined and well-governed. Programs that are based on being creative and lack that structure are almost always guaranteed to fail.

transformative ideas be kept away from the core of the business, but it is critically important that the structures exist to provide them with legitimacy, funding and support.

In summary, as organizations and nations in the Middle East embark on a quest to create and capture new value for themselves using innovation as a method, we need to be mindful that successful innovation programs are run as well-oiled machines and are about meeting well quantified end-goals, either commercial or otherwise, that are ambitious and inspire creative solutions. ●

by **Valter Adao**, Chief Digital & Innovation Officer, Deloitte, South Africa, **Rohit Majhi**, Senior Manager, Monitor Deloitte, Middle East and **Christian Gemayel**, Business Analyst, Consulting, Deloitte, Middle East

# Cherchez l'aiguille

Mining for facts in the  
era of unprecedented  
data growth





Organizations are being faced with increasing challenges trying to adapt to the technological challenges as well as the ever-evolving legal and regulatory landscape.

**T**he Information Age has revolutionized our lives and the business world. Continued growth of the internet, falling costs of technology and growth of machine-generated data has led to exponential growth in the volumes of data, the variety of data sources and the speed at which data is generated.

This explosion of data is testing the ability of organizations to deal with regulatory inquiries, disputes, litigation and investigations, but with the use of the right technology, processes and people, these challenges can be more easily addressed.

#### **Finding the needle in the haystack**

Organizations are being faced with increasing challenges trying to adapt to the technological challenges as well as the ever-evolving legal and regulatory landscape. Failure to unearth the facts accurately and in a timely manner could result in significant financial and reputational damage as well as regulatory sanctions.

The answers to questions arising are often contained within business communications, legal documents and transactional data. Hidden deep within this data lie critical facts such as when did key events occur? Who were the key actors? What were the communications about? Discovery of such facts are pivotal when responding to regulatory requests or dealing with disputes or investigations—which is within the realm of electronic discovery (e-discovery) that deals with collection, processing and analysis of data for these purposes.

#### **Establishing facts is not always quick or easy**

In a recent example, the Federal Bureau of Investigation (FBI) was tasked with reviewing 650,000 emails of US presidential candidate Hilary Clinton in just eight days—that's over 81,000 emails per day. A feat impossible without the use of latest technology and efficient workflows.

Smart wearables or home automation systems in our lives (Internet of Things) has led to an unprecedented growth in the variety of data sources that may become relevant in an investigation. Data from Fitbit and Amazon Echo devices played an important role in two recent murder investigations.

With increased adoption of cloud technologies, data could now be spread across various geographies and jurisdictions, thus exposing it to increased data privacy and mobility regulations. In a recent case, a major Internet search provider was ordered to “produce all content responsive to the search warrant that is retrievable from the United States, regardless of the data's actual location.”<sup>1</sup>

Considering these examples, it must be clear that data is everywhere and has an increasingly undeniable impact in a variety of real-life scenarios.<sup>2</sup>

#### **Tackling data challenges to discover facts**

The answer to tackling data challenges is undoubtedly through technological advancements. The tools and techniques used for uncovering facts are also varied and advancing very rapidly.



Various investigation workflows can be utilized in order to tackle the challenges related to the growth in data volumes by reducing false positives. Visualizing the data in order to gain precise insights or utilizing efficient data organization workflows can play an important role in terms of volume and noise reduction. For instance, organizing email data in a way that the repeated email content within email chains are excluded from the manual review population (email threading), in other words only reviewing the latest email chain, can result in significant time and therefore cost savings.

**What** – With the advancements in technology, data is no longer viewed only as content, a string of words, but instead e-discovery platforms such as Relativity® or Brainspace™ can assist in gaining an understanding of the concepts/themes within the data through machine learning: what the data is about. Having a visual representation of this conceptual landscape also enables prioritizing/de-prioritizing data—it is like looking at a photo mosaic; you can see the big picture and you can drill down into its smaller components (See figure 1 on the next page). This conceptual understanding also enables searching the data based on conceptual meaning rather than just keywords; the system knows “tennis” is related to “sport”, or “spring” can have different meanings depending on the context. Moreover, by combining this understanding with training the system with human input, it is possible to ask the system to predict relevant documents in an automated fashion (predictive coding or technology-assisted review), which results in substantial time and cost savings.

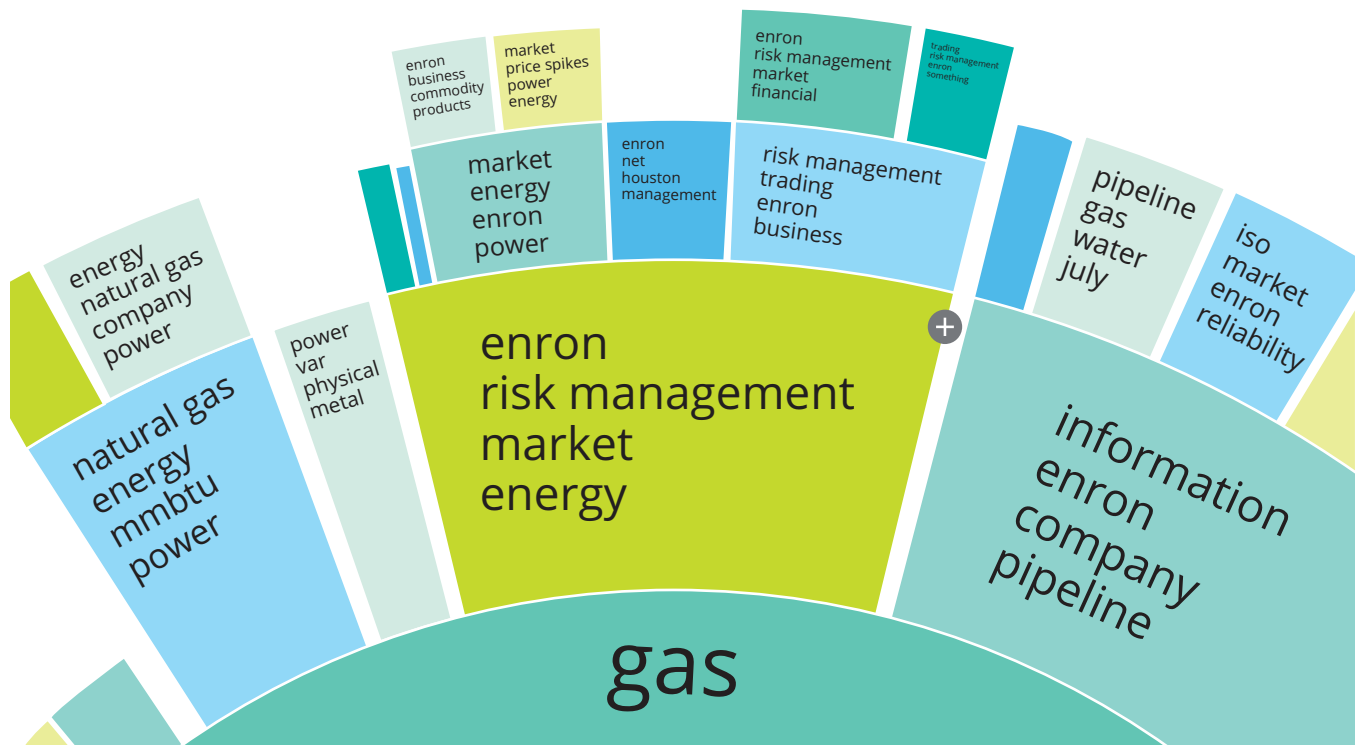
**When** – Another important aspect of uncovering facts is building the timeline of events—the story is essentially a series of developments. Therefore, it is necessary to have the tools to understand the timeline of the data. For example, a timeline of the trending topics on Twitter can serve as a powerful tool to understand how events around the world develop over time. The same principle can be applied to business email data.

**Who** – When building a story from the data, it is also crucial to understand who is talking to whom (See figure 2 on the next page). Identifying key players and their roles by analyzing a company's social network would provide valuable insights. According to Scott Adams, the creator of *Dilbert*, the power a person holds in the organization is inversely proportional to the number of keys on his keyring. A janitor has keys to every office, and yet has no power. Different algorithms allow for identifying different roles, as each could have varying importance depending on the scenario. ➤

With increased adoption of cloud technologies, data could now be spread across various geographies and jurisdictions, thus exposing it to increased data privacy and mobility regulations.

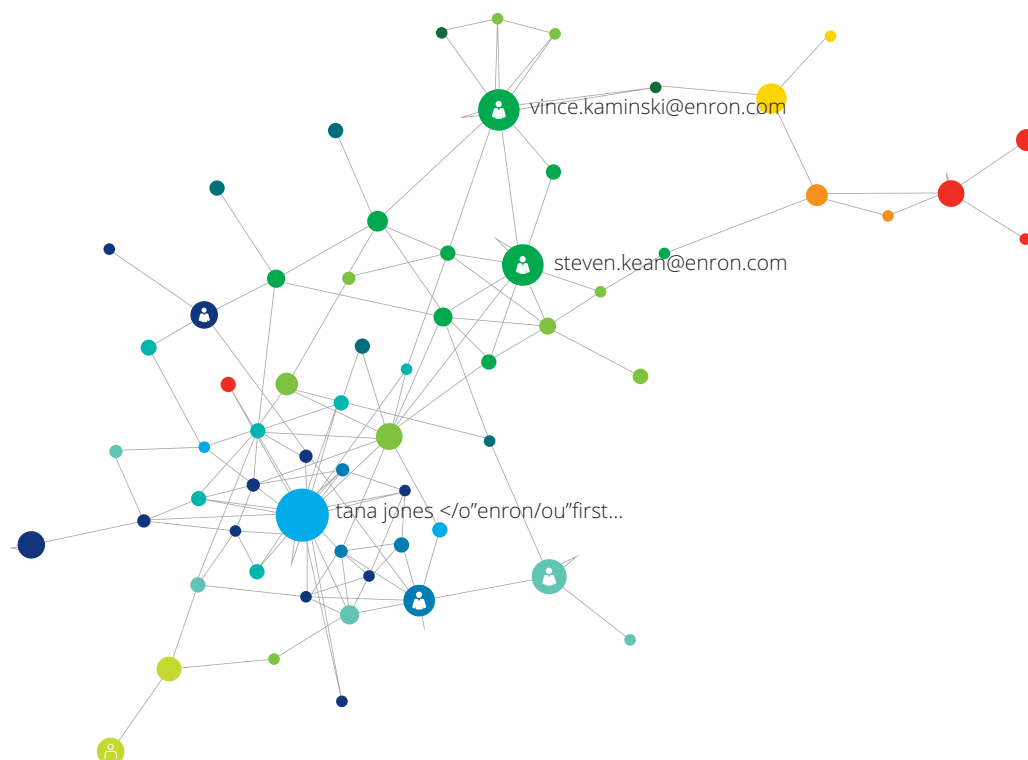


Figure 1: Visual representation of the conceptual landscape of the data



Source: Brainspace Discovery™ 5 -© Brainspace Corporation

Figure 2: Communication analysis – who is talking to whom?



Source: Brainspace Discovery™ 5 -© Brainspace Corporation

### Looking into the future

Artificial Intelligence (AI) will increasingly become more advanced and ubiquitous. AI is already transforming numerous industries (an obvious example is how data is analyzed and insights are gathered) and has a direct impact on how facts are discovered for the purposes of litigation or investigations. The future of technology promises not only a better insight of what has happened or what could happen, technology will also prescribe solutions based on past events and possible future outcomes. For instance, it will be possible to build an in-depth understanding of the actors within the data by analyzing their communication patterns and prescribing solutions based on the behavioral trends.

The ancient Greek philosopher Heraclitus' observation that "the only constant is change" has perhaps never been more pertinent.

### In summary

The Information Age has, and continues to, transform the entire world in ways and speed that could not have been imagined. And this transformation has also come with major challenges; the increasingly complex digital world has an

indisputable impact on the business environment, and combined with the ever-evolving legal and regulatory landscape, discovery of facts for the purposes of regulatory requests or disputes has also become more complex than ever. Failure to deal with this complexity can result in substantial financial and reputational damage. Therefore, it is absolutely critical to utilize the right technologies and deploy workflows based on precision and efficiency when dealing with data for legal or regulatory purposes. ●

by **Andrew Pimlott**, Partner, Forensic Services and **Boray Altunisler**, Assistant Director, Forensic Services, Financial Advisory, Deloitte, Middle East

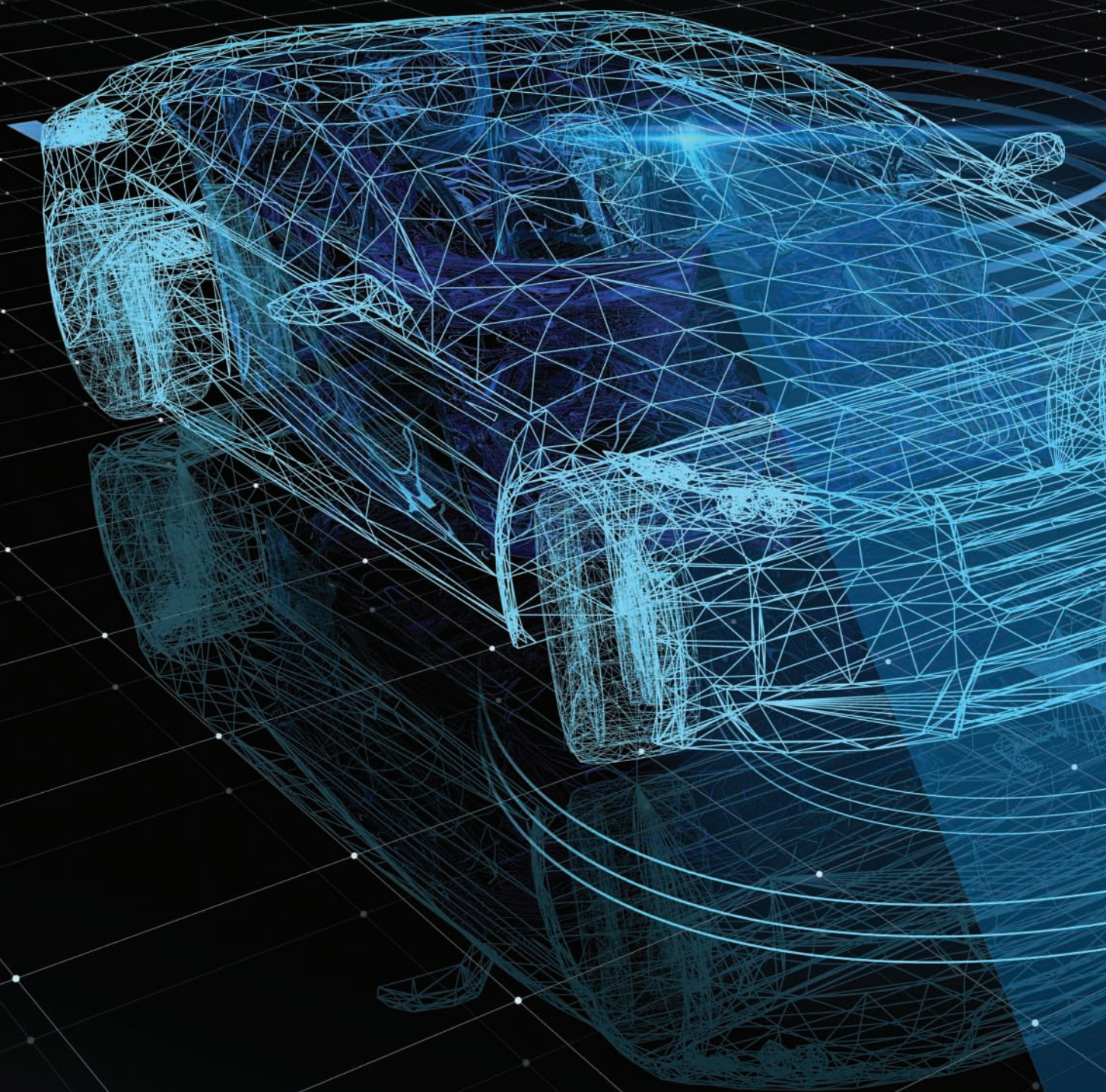
### Endnotes

1. State of Connecticut v. Dabate, Case No. TTD - CR17-0110576-T and State of Arkansas v. James A. Bates, case number CR-2016-370-2
2. In re: Search of Content that is Stored at Premises Controlled by Google, Case No. 16-80263 (N.D. Cal., Apr. 19, 2017)

The answer to tackling data challenges is undoubtedly through technological advancements. The tools and techniques used for uncovering facts are also varied and advancing very rapidly.

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# Family business vs. Industry 4.0

Self-driving cars, 3D printers, drones, virtual experiences, genetic breakthroughs: welcome to the world of Industry 4.0. Call it what you will, "Industry 4.0", the "Fourth Industrial Revolution" or "4IR", the fact remains that these technological advancements are well and truly upon us and have become a staple of our everyday modern lives, fundamentally altering the way we live, work, and ultimately do business. In order to remain sustainable and successful, family businesses must rapidly adapt to this new paradigm, adequately assessing their threats and risks. There is no room for complacency in this new era. ➤

Financial wealth is no longer a prerequisite to business success. We live in an era where companies dominate their respective industries without owning any tangible assets as witnessed by Uber, Airbnb and Facebook.

A new industrial revolution is upon us, perhaps a little earlier than originally anticipated. Not only is it characterized by a range of new technologies, but these technologies are essentially fusing physical, digital and biological worlds, impacting all disciplines, economies and industries.

Family firms have traditionally been renowned for their ability to act fast and adapt to changing market forces, however, at the dawning of this new age, this disruptive force, which we may not necessarily understand the true extent of, requires action. A reactive approach that has been commonly employed among GCC family businesses may no longer suffice.

and the potential downfall of traditional business models.

While family businesses have traditionally competed in markets based on their strong asset bases, long-standing relationships with customers and stakeholders and well-established brands and reputations, start-ups are challenging this traditional approach by being agile, innovative, active experimenters and risk takers. This is where traditional family businesses may begin to be detrimentally impacted.

The Deloitte NextGen Survey 2017, *Leading a family business in a disruptive environment*, found that while 47 percent of family businesses believed that there

Family firms perceive their biggest challenges to be internal rather than external, which raises a red flag as to whether family firms really understand the nature and potential impact of the Fourth Industrial Revolution on their business.

#### How are family businesses affected?

Financial wealth is no longer a prerequisite to business success. We live in an era where companies dominate their respective industries without owning any tangible assets as witnessed by Uber, Airbnb and Facebook. This is nothing new, however it serves to highlight the changing business market

was a likelihood of facing potential disruption over the next 2-3 years, only 27 percent believed they were prone to losing market share to new entrants, with 48 percent believing it was unlikely. These figures do not offer much reassurance, particularly when considering that 37 percent of respondents either do not have a



strategic plan, or do not address disruption in their strategic plan if they had one.

A possible explanation could be that family firms perceive their biggest challenges to be internal rather than external, which raises a red flag as to whether family firms really understand the nature and potential impact of the Fourth Industrial Revolution on their business.

That is not to say that family firms do not face internal challenges, however, the key is to be aware of, and address both, internal and external risks, to better manage their effects and steer the course to business success.

The challenges facing family businesses are further compounded by the fact that new market entrants and startups are closing the gap on the advantages offered to family businesses, such as the security of having access to ready capital.

### Access to capital

There has been a dramatic rise in venture capital funding over the past decade, but even before startups reach this phase, founders have access to loans from banks. Small business loans and lines of credit are now available from many providers, as well as loans from peer-to-peer online platforms.

There are also many platforms that allow entrepreneurs to raise money for a product, game, or film, even before it is made. Backers can also buy a product in its prototype stage to contribute to the cost of its making, in turn allowing for the production of a given item.

In essence, access to capital for startups is not as much of a limitation today as it may have been in the past. There are several sources of capital available, and the competition among lenders is rife, thereby offering borrowers low interest rates and costs of borrowing.

### Brand loyalty

The concept of brand loyalty no longer exists, or at the very least is waning: customers are not as loyal to brands as they once were. Consumers do not see the benefit of sticking to one brand, particularly in a more transparent market, creating greater consumer awareness and providing greater options.

It has also become easier for new brands to build a reputation and market presence. Unlike in the past, new brands do not have to wait for time to build a reputation, which in turn allows businesses to acquire large customer bases and penetrate various markets at an astonishing rate.

### So are family businesses doomed?

No. Family businesses lead from a position of strength, with a longstanding history of great vision, leadership, management and profitability. They are still well positioned to compete with startups and may even benefit from engaging with them.

“Coopetition” in particular is a concept that family businesses need to embrace. Many business-owning families in the Middle East have the willingness to collaborate with, or invest in start-ups, however the culture of these companies should back up this strategy and bolster risk-taking, agility and collaboration. There are many opportunities for synergies and lasting growth, and it is

Family businesses lead from a position of strength, with a longstanding history of great vision, leadership, management and profitability.

promising to note that “the next generation of family entrepreneurs said they could identify new initiatives that deliver near-term impact and accelerate transformation of their family business.”<sup>1</sup>

The rapidly evolving digital economy, technology changes and forces of globalization brought upon us by the Fourth Industrial Revolution promise to have far-reaching consequences on the business models of the typical family business in the Middle East and worldwide.

The survival of the family-owned business model as we know it is under greater threat than ever before. Family businesses need to get ahead of the curve, anticipate and account for disruption, and adequately equip themselves with the necessary tools to face the disruption of the Fourth Industrial Revolution. ●

by **Walid Chiniara**, Partner and Head of Family Enterprise Consulting, Deloitte, Middle East and **Yasmine Omari**, Manager, Family Enterprise Consulting, Deloitte, Middle East

### Endnotes

1. Deloitte NextGen Survey 2017, *Leading a family business in a disruptive environment*, p.20

# A challenging tackle

## Engaging football fans in the Middle East

The issue of fan engagement is a constant challenge for all sports. Even for football—the world’s most popular sport—determining how best to attract, engage and ultimately leverage the relationship with fans is a top priority for the game’s administrators. The dynamic and ever-changing environment of Middle East football adds its own unique challenges. ➤





While international football is certainly a major driver of overall interest in the sport, particularly in expatriate-dominated countries where interest in international leagues is greater than interest in local leagues, this preference is not to the exclusion of the local game.

**M**iddle East football is currently experiencing a period of unprecedented change and development, both within the region itself and in terms of international profile and influence.

The Middle East has emerged over the last 10 years as an important host of major football events, staging several high-profile tournaments such as the FIFA Club World Cup and the AFC Asian Cup. This trend is set to continue until 2022 at least, when Qatar hosts football's ultimate showpiece, the FIFA World Cup. Against this backdrop of major events, the region's governing bodies are also re-organizing, with football club mergers and privatization under way in several emirates like Dubai and Sharjah and in Saudi Arabia.

Internationally, Middle East investors have taken controlling ownership stakes in some of the world's biggest football clubs, while regionally controlled media companies have likewise acquired a variety of important football broadcast rights.

What about the region's football fans? How do they fit into this changing landscape and just how engaged are they with the local game compared to international football?

#### **Middle East football fan engagement study**

Earlier this year, Deloitte partnered with the Josoor Institute—the training and development arm of Qatar's Supreme Committee for Delivery and Legacy—in publishing a study entitled *Middle East Football Fan Engagement*. The study looked at the attitudes and behaviors of football fans across 10 Middle Eastern

countries, with a particular focus on comparing fan engagement with local leagues against engagement with major international leagues, especially those in Europe.

The study confirmed, as expected, the overall popularity of football but it also revealed a genuine depth of passion for the game amongst fans, with 73 percent of fans stating that football is very important to them and 89 percent saying they watch football whenever they can. When it came to comparing interest in local leagues with interest in the big European leagues, the study yielded some important revelations. While international football is certainly a major driver of overall interest in the sport, particularly in expatriate-dominated countries where interest in international leagues is greater than interest in local leagues, this preference is not to the exclusion of the local game. Even in expat-dominated Gulf states, over 80 percent of fans have a favorite local team. This holds true for expat fans to almost the same degree as local fans: 83 percent of expat fans in the Gulf states have a favorite local team, compared to 89 percent of local fans. This strong underlying interest in both local and international football suggests that rather than viewing international leagues as competition, local leagues should find ways to harness fans' broad-based passion for the game and direct it towards a deeper engagement with local football.

Perhaps the most important finding of the research however, was that almost 40 percent of football fans across the Middle East had made no team or league-related purchase over the previous 12 months. Such a large proportion of fans not

directly spending any money on the game represents a huge untapped market and a significant commercial opportunity for teams and leagues across the region.

### Grasping the opportunity

What can be done to put more fans through the region's football stadium turnstiles? More importantly, what can be done to turn this clear underlying passion for football into meaningful engagement that generates a financial return for the region's clubs and leagues? The findings of the study present three possibilities for consideration:

#### 1. Leverage the popularity of international football

Middle East football fans follow European football with great enthusiasm. The challenge is to find ways of tapping into this enthusiasm and connecting it to the local game. Whatever the tactics, the strategy must be to convince fans that what they love about following European football, they can also find in the local game.

#### 2. Create an engaging match day experience

A clear outtake from the study was that the typical match day experience in the Middle East presents many barriers to attendance. The quality of stadia and infrastructure was a major factor and is something already being addressed in several countries. Other key issues discouraging attendance included match atmosphere, quality of services such as parking and catering, and suitability for families. Local leagues must focus on improving these basic match day elements to establish a solid foundation on which to build the wider fan experience.

Once the fundamentals are properly dealt with then, and only then, should Middle East clubs and leagues consider pursuing the kind of immersive, Smart Stadia experience being created at the world's leading sports and entertainment stadia. Technology-led features such as food and beverage ordering from your seat via smartphone apps, augmented reality wayfinding and ticket entry using near-field communication are developing rapidly in the world's leading sports venues. But while these represent the cutting edge of sports stadia technology, for now the Middle East should consider these as extra frills and focus on the basics: providing convenient parking, efficient entry and exit, together with affordable, quality food and beverage, to name just a few.

#### 3. Build engagement beyond the stadium

The area where Middle East football can immediately look to leverage technology and emulate top international sports leagues for quick wins is in building the relationship with fans beyond the stadium. The global sports industry is becoming increasingly sophisticated in how they engage fans before, after and between games, with smartphone apps

and social media playing an ever-increasing role. Our study showed that while television is still the most popular way to follow football, social media is a growing force and plays an especially important role in maintaining a connection with fans and building loyalty in the important space between match days.

Despite the unprecedented and high-profile developments in Middle East football over the last decade, the region's football market still has huge untapped development potential. The first FIFA World Cup in the Middle East in 2022 can be a powerful catalyst for unlocking that potential and propelling the game forward. But as our study with the Josoor Institute has shown, the influence of expats on Middle East football fandom has created a unique combination of interest in both local and international football. Successfully tapping the region's potential therefore challenges the region's football leaders to work out a uniquely Middle Eastern solution. ●

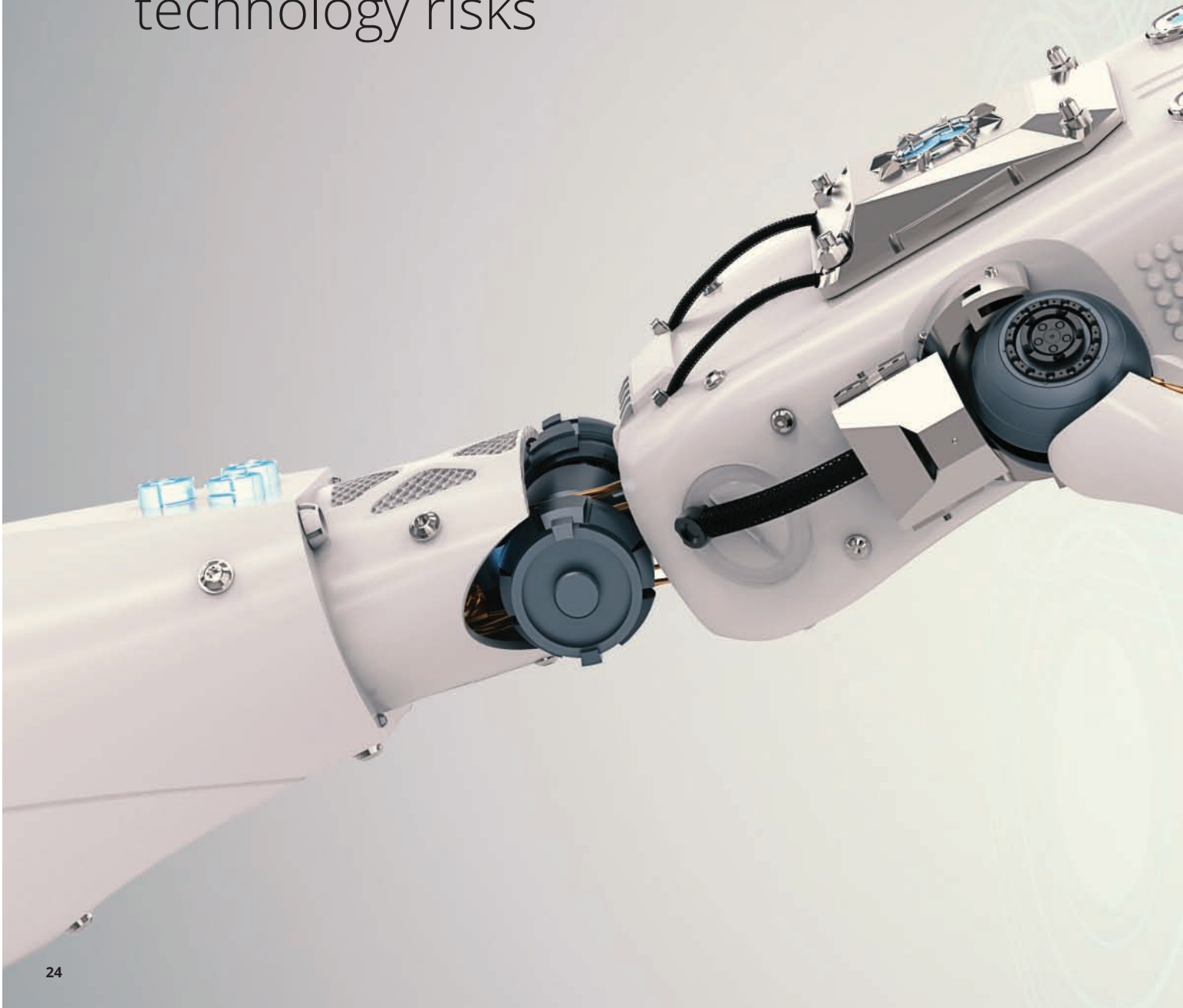
by **Simon Cory-Wright**, Director, Consulting, and Head of Sport and Event Management, Deloitte, Middle East

A large proportion of fans not directly spending any money on the game represents a huge untapped market and a significant commercial opportunity for teams and leagues across the region.



# I am SAM

A strategic initiative to  
manage cyber and  
technology risks





Managing and maintaining software assets cannot be neglected, and it is also an overwhelming problem if not planned and executed effectively.

### What is Software Asset Management (SAM)?

An effective asset management practice allows enterprises to integrate financial, contractual, and inventory functions to support their software and hardware asset management life-cycle and take strategic decisions to run their business. As such, managing software assets becomes an integral part of the Information Technology (IT) operations of any organization.

Software assets include items such as operating systems, applications, network management programs, enterprise resource planning (ERP) solutions, and other human resource (HR) and finance-related applications. Managing and maintaining software assets cannot be neglected, and it is also an overwhelming problem if not planned and executed effectively. Unaccounted-for software or applications within an enterprise could potentially introduce risks related to compliance, operational efficiencies, and security.

### The key objectives of a SAM program are to:

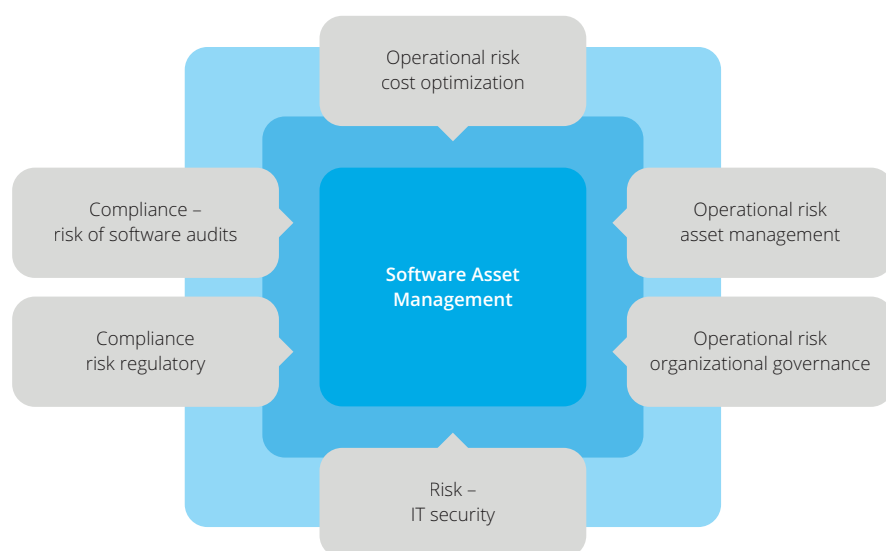
- Provide an integrated and central view of all software deployed.
- Define a platform that enables the IT function to (re)assess its Software Lifecycle Management processes—that constitutes the procurement, usage and expiration of Enterprise Software assets.
- Assist the IT department to optimize its operational costs; and
- Manage the compliance, operational and information (or cyber) security risks related to the ownership and use of software.

### Mitigating risks with SAM

Introducing and implementing a SAM program along with respective good practices can help an organization achieve the objectives outlined above and effectively mitigate and manage the risks related to compliance, operational efficiencies, and security. Some of these key risks are:

- Risks related to compliance:
  - The technology research and advisory firm Gartner, Inc. predicts an increase in vendor audits.<sup>1</sup> Companies may incur penalties in the event of a software license compliance audit if they do not keep their licenses organized and updated.
  - Risk of non-compliance with the specific terms and conditions within the software agreements with regards to the usage of software.
  - Select industries and geographies have regulatory compliance requirements related to SAM that the organization may be at risk of not complying with.
- Risks related to operational efficiencies:
  - Not being able to effectively monitor and track the software in use.
  - Organizations may be paying maintenance costs for software not being used.
  - Software licensing models and metrics are evolving with technology resulting

### Key SAM risks



in rising complexities. Organizations face the risk of not being abreast with these changes, resulting in the risk of not using the most efficient and economical licensing model.

- Re-allocation of software licenses when hardware is moved or decommissioned results in a software licensing impact.
- Risk related to security:
  - Without the ability to inventory and control software installed and allowed to run on their hardware, organizations make their systems more vulnerable to security threats.
  - Trends have indicated that backdoor malware or Trojans are primarily propagated through unauthorized software that is not accounted for or managed by the IT team.
  - Open source software, if not properly identified and controlled, could potentially introduce security risks to the organization.

#### How SAM can help

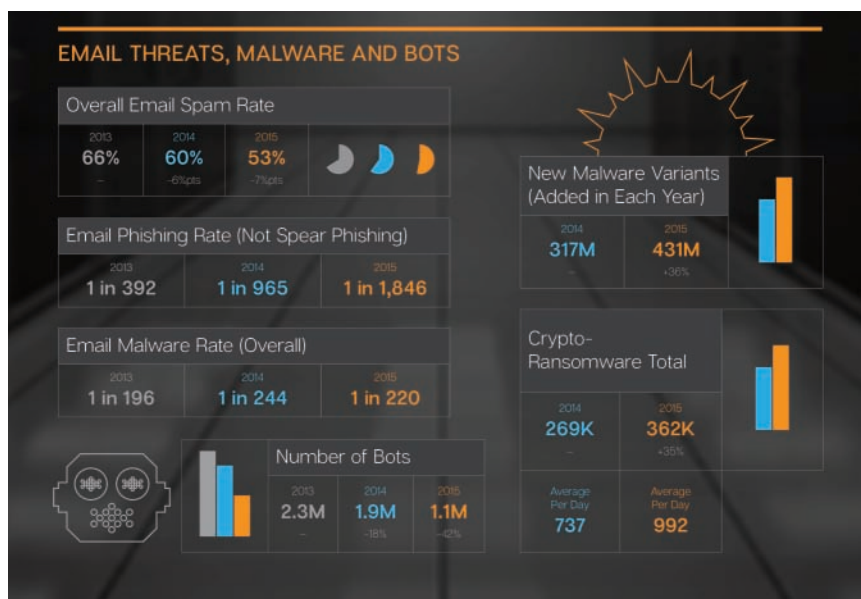
**SAM can provide you with a detailed report related to your software deployments.**

Without an effective SAM program, some software can remain hidden from the view of IT leaders and operations team. This leads to a wider threat exposure because the regular system security operations, such as applying Patching or updates or security controls could potentially be missed on those hidden software.

According to the Internet Security Threat Report released by Symantec,<sup>2</sup> Ransomware continues to evolve. Last year, we saw Crypto-ransomware (encrypting files) push the less damaging locker-style ransomware (locking the computer screen) out of the picture. Crypto-style ransomware grew 35 percent each year. An extremely profitable type of attack, ransomware will continue to ensnare PC users and



One of the initial steps of a well-defined SAM program is to enable the IT function to get the first-hand information about the software implemented within the enterprise.



Source: Symantec



expand to any network-connected device that can be held hostage for a profit. These ransomwares are distributed to the targets through various means, and one of the channels is through software or applications downloaded by end users. Hence it is imperative to make sure the software or applications installed within the enterprise network are managed properly.

One of the initial steps of a well-defined SAM program is to enable the IT function to get the first-hand information about the software implemented within the enterprise. In addition to its inbound benefits of software compliance and operational effectiveness objectives, an effective SAM governance and risk management procedure should consider the step of software inventory as the starting point to assess the threat exposure associated with the unauthorized applications installed on the systems.

An effective SAM strategy will keep your systems secure, and will help eliminate the risk of purchasing software through unauthorized vendors. It will also make your existing software less vulnerable to external attacks.

It is important to actively manage (inventory, track, and correct) all software on the network so that only authorized software is installed and used, and that unauthorized and unmanaged software is detected and prevented from installation or execution.

Identifying expired, and unmatched software existing in your network well ahead of time will give you the ability to apply patches in a timely manner. For custom applications that require a specific over version of an operating system that is no longer supported by the manufacturer (E.g. Windows XP); knowing how many, and where this kind of software exists is a first step towards applying risk mitigation techniques.

**The existence of Adware/unlicensed software/ cracks/ free software/ games/Trojans, and other shelf-ware, leaves your organization wide open to the threat of cyber-attacks, and for malware/ransomware to infect your infrastructure.**

A good SAM strategy will help you identify these nuances in your environment and act on them in a timely manner. In most cases, users are unaware of these types of software breeding in their system; which is the nature and purpose of these agents. However, a well-defined software discovery (either via a tool or otherwise) as part of a SAM strategy can help reduce the threat of such exposure and save your organization millions of dollars and an embarrassing moment. An effective SAM strategy will keep your systems secure, and will help eliminate the risk of purchasing software through unauthorized vendors. It will also make your existing software less vulnerable to external attacks.

#### **SAM and security working hand-in-hand.**

A well-defined and integrated SAM and IT security operations can help minimize the threat landscape by:

- Structuring a governance model to handle the asset management life-cycle;
- Supplementing the IT security function to manage cyber-threats associated with software;
- Integrating a SAM inventory collection



procedure to supplement the IT asset management program;

- Reconciling the inventory with an approved list of software and thus preventing unauthorized software before it is even installed within your infrastructure;
- Locating and weeding out renegade software; and
- Introducing mechanisms to identify redundant and outdated/obsolete software.

### What next?

As it is evident that a software asset inventory and SAM can help organizations to effectively assess their inventory and understand the threat landscape, it is crucial to operationalize SAM through a systematic approach. Organizations should initiate a SAM program that integrates the people, process and technology domains together. This approach focuses on transformation, prioritizing opportunities for cost reduction and risk management.

To begin this journey, organizations should use a phased approach starting with:

- Performing a SAM diagnostics and benchmarking exercise; such as a software assets discovery and benchmarking SAM processes (to leading practices such as ISO19770-1) to understand the current environment; to the
- Formulation of a strategy and organizational structure. This includes building a corporate-wide SAM strategy based on the outcome of the SAM diagnostics and benchmarking exercise, and designing scalable SAM policies, processes, and procedures.
- Need determination and SAM Plan would be the next step. This includes establishing a baseline software inventory of your key software, and assessing the need for adequate tooling; to

Organizations should initiate a SAM program that integrates the people, process and technology domains together. This approach focuses on transformation, prioritizing opportunities for cost reduction and risk management.

- SAM Implementation into operations and continuous monitoring.

That makes SAM a seamless proposition.

Depending on the appetite and bandwidth of the organization, certain activities such as SAM diagnostics and baseline software inventory can be performed in parallel. Alternatively, the above activities can be outsourced to a managed service provider, ensuring cost benefits are maximized and operational efficiencies are realized.

SAM should be considered as a critical program along with other IT strategies and enterprise level initiatives and should be one of the critical strategic initiatives for any IT operations and risk management function. ●

by **Nithin Haridas**, Principal, Risk Advisory and **Huzaiifa Hussain**, Senior Manager, Risk Advisory, Deloitte, Middle East

### Endnotes

1. Gartner, Inc. | G00230816 -Software Vendor Auditing Trends: What to Watch for and How to Respond
2. [www.symantec.com/content/dam/symantec/docs/reports/istr-21-2016-en.pdf](http://www.symantec.com/content/dam/symantec/docs/reports/istr-21-2016-en.pdf)

Waiting for command

# More real than reality

Transforming work through  
augmented reality





To avoid overwhelming workers and allow the future of work to actually . . . well, *work*, workers need the ability to sift through it all and determine what is relevant to the task at hand.

### Seeing information in a new way

The first tools used by humans were little more than sticks and small rocks. Later, as tasks became more complicated, tools did as well. More complicated tools, in turn, allowed for new types of work previously undreamt of. Imagine Galileo looking through his newly constructed telescope and seeing clearly for the first time that the uneven spots on the moon were, in fact, shadows from mountains and craters. He had built his telescope to meet the demands of his scientific studies, but in doing so, also created new fields. Little did Galileo know that within three and a half centuries of his sketches, workers from an entirely new career field would be walking in those exact craters—astronauts.

turbine or finding the optimal route for a delivery truck can require workers to access, aggregate, analyze, and act on vast amounts of information—more than any human could possibly memorize—that changes constantly depending on real-world conditions. To avoid overwhelming workers and allow the future of work to actually . . . well, *work*, workers need the ability to sift through it all and determine what is relevant to the task at hand. This means that modern workers will commonly need an entirely new set of tools that affords them a new way to interface with information and tasks.

That new toolset can be found in the promise of Augmented Reality (AR), enabled by the Internet of Things (IoT). Like the telescope before it, AR can offer an opportunity to see and use information in a new way. AR presents digital information to workers by overlaying it on their view of the real world. For example, now with AR, technicians who wire control boxes in wind turbines can see exactly where each wire goes in their field of view rather than wasting time flipping pages in a technical manual. In one experiment, eliminating even this seemingly minor inconvenience resulted in a 34 percent faster installation time.<sup>1</sup> By marrying digital and physical information in this way, AR can offer more realistic training, speed up repetitive tasks, and even introduce entirely new forms of work.<sup>2</sup>

By remaking how humans relate to our digital tools, AR can offer new opportunities for collaboration, remote work, and fresh insights about how work gets done. In this sense, AR can be seen as a tool that can work alongside people, with humans and digital technologies working together, leveraging their inherent strengths to achieve an outcome greater than either could accomplish alone.

### What is augmented reality, really?

For many, the term “augmented reality” may conjure images of slick presentations of data—digital images overlaid on live video or projected on glasses, for example. But that is only one facet of AR; it

Figure 1. What augmented reality looks like



An artist's conception of an AR display, which projects digital information onto an individual's view of the real world. In this case, a farmer views directions for fixing a tractor engine.

While simple tasks require only simple tools, today workers are increasingly asked to do much more: to sift through troves of data, and to perform complex, variable, and often unpredictable tasks that require an ability to access and understand that data, often quickly while juggling heavy workloads. Tasks such as diagnosing an almost invisible crack in a jet engine

has the potential to provide far more value to today's workplaces. AR can integrate digital information into the ways in which workers perceive the real world, enabling them to seamlessly use that information to guide their choices and actions in real time, as they accomplish tasks.<sup>3</sup>

Three key elements underpin AR (figure 2):

- The source of the data
- The ways in which that data are presented
- The interaction with, and use of, that data as an impetus for action

Together, these three elements combine to make AR a unique tool with powerful potential.

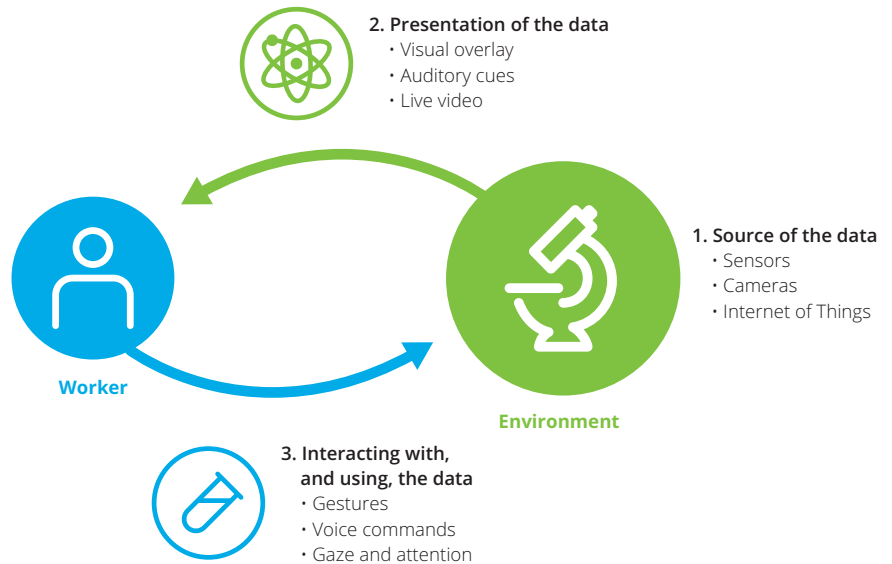
#### Source of the data

Starting at the beginning, where information is created, takes us outside of the realm of pure AR and into another connected technology: the IoT. Put simply, the IoT creates flows of information from connected tools, systems, and objects—information that, when aggregated, can be used to create a more holistic view of the world and illuminate new insights. Information can drive the workday; workers use information in one form or another, from some source or another, to accomplish their tasks. Much of this information can easily be pulled from databases or reference materials, but in the fast-paced world of the modern workplace it is not helpful to know the as-designed pressure in a hydraulic pump or what the pressure was last month. Workers need to know what the pressure in that specific pump is today—right now—if they are to accurately use or maintain that pump. Gathering digital information about the world from sensors, and communicating that information so it can be aggregated, analyzed, and acted upon is what the IoT is all about.<sup>4</sup>

#### Presentation of the data

Simply having the right information isn't always enough. Workers can be quickly overwhelmed when presented with too much information, which can actually

**Figure 2. The core elements and technologies of AR**



By marrying digital and physical information in this way, AR can offer more realistic training, speed up repetitive tasks, and even introduce entirely new forms of work.

lead to poorer performance.<sup>5</sup> Instead, try to present information when it is relevant, and in a manner that workers can easily absorb. Much of the current research into AR focuses on how to present digital information in increasingly natural, contextual ways. For example, while early systems had to rely on specific markers or cues, such as lines or bar codes telling computers where and how to display information, current development focuses on marker-less systems that can more seamlessly weave digital content into a user's field of vision.<sup>6</sup>

#### Interacting with, and using, the data

Even having the right data, presented in the right way, does not create any new value if it fails to result in action. Value is

created only when a worker can use this information to do something new—find the right part faster or get help from an expert. This means that AR sits at the end of a long trajectory of not only displaying digital information, but controlling it in increasingly natural ways (see figure 1).

Early computers displayed data via tape printouts; later versions progressed to screens via command line interfaces. Workers controlled these machines with keyboards or punch cards, but could not easily “edit” or control the data once it had been printed. Later, the graphic user interface and the mouse made consuming and controlling digital information easier. But AR can take this trajectory still further; it not only incorporates the display of information in a way that people naturally perceive the world, but also increasingly allows workers to control that information through movements such as gestures or gazes.<sup>7</sup>

AR is fundamentally about allowing humans and machines to team together to achieve results neither could alone. That teamwork can be the key to success in the complex, data-rich environment of the 21st century. ➔

Gathering digital information about the world from sensors, and communicating that information so it can be aggregated, analyzed, and acted upon is what the IoT is all about.

AR is a prime example of how optimally leveraged new technologies can change the future of work. After all, work is, at its foundation, an interaction between people and tools. New tools introduce new capabilities that can generate measurable improvements in work performance. Freestyle chess exemplifies this. Instead of asking, “Which is better, human or machine?” it takes the question one step further and asks, “What happens if the humans and the machine team up?” In freestyle chess, competitors can use any technical tool or reference aid to help select their moves; this often results in large teams of people and computers working together to try to win a game.

In 2005, playchess.com hosted a freestyle chess tournament. Armed with the best computers, several grandmasters entered the tournament as heavy favorites. But none of the grandmasters took home the prize. Instead, it was awarded to two amateur players who used three home computers.<sup>8</sup> How did they beat the odds? It turned out the most important thing was not technology nor the skill of the players, but rather the quality of the interaction between them. As Gary Kasparov later explained, “Weak

### Why AR? Why now?

While AR may seem cutting-edge, it is actually not a new technology. Its roots stretch back to World War II, when British engineers combined RADAR information with a gunsight, enabling fighter pilots to attack targets in the dark.<sup>10</sup> But in the decades that followed, AR failed to catch on in the workplace, likely because it was not required to complete tasks. But as the nature of work in the 21st century is transforming, tasks are changing; in the future, human-machine relationships will likely become increasingly critical to organizational success. To those of us bombarded daily with hundreds of emails, social media posts, and texts, it is perhaps no surprise that the volume of information in the world is increasing every day.<sup>11</sup> In fact, in 2003 alone, the amount of information contained in phone calls alone was more than three times the amount of words ever spoken by humans up to that point.<sup>12</sup> As more companies derive value from this information, the demands of sifting through mountains of information to find the right pieces of data for a complex task will be beyond the capabilities of most people.<sup>13</sup> The result is that AR will likely be increasingly necessary for tasks with high volumes of data or highly variable tasks.

AR is a prime example of how optimally leveraged new technologies can change the future of work.

human + machine + better process was superior to a strong computer alone and, more remarkably, superior to a strong human + machine + inferior process.”<sup>9</sup> Similarly, AR is fundamentally about making the human-machine team work as naturally as possible.

Research from psychology, economics, and industrial design indicate that there are two main factors that determine how we process information to accomplish tasks: the volume/complexity of data and the variability of the task.



### Volume and complexity of data

Data is an invaluable asset to decision making and task performance, but it can have diminishing returns: while a little information is good, too much information can actually reduce performance. This is because information overload often distracts workers from key tasks and causes them to miss relevant details. Highway accident statistics illustrate this principle: as car manufacturers continue to make safer vehicles, highway fatalities actually rose in 2015. According to the National Highway Traffic Safety Administration, this was at least partially due to an increase in distracted driving; more drivers are now using phones and other devices when behind the wheel.<sup>14</sup> And while smartphone apps featuring turn-by-turn directions can be useful, they can also cause drivers to miss even more important information, such as the brake lights of a truck ahead.

### Variability of task

When each iteration of a task is different, it may also become difficult to sift out the relevant pieces of data.<sup>15</sup> In this case, humans may have the advantage over computers. Computers do a better job handling large volumes of data, but humans are much better at dealing with variation. For example, human language is rich in variation and context. So while a person would quickly detect the sarcasm if a friend said how “great” the weather was on a rainy vacation, computers would struggle to detect anything but praise for the precipitation.<sup>16</sup>

Both of these factors can negatively impact job performance, and both are increasingly inherent in the tasks asked of modern workers. In order to accomplish

today’s tasks, we likely need a new way to interact with digital tools. We cannot rely on ourselves alone because humans cannot process or remember enough information. But neither can we rely solely on automation, because it can only do what it was programmed to do and cannot deal well with variability. And so, it seems clear that increasingly, we will need teaming between human and machine, with each playing to its strengths. In short, for many modern tasks, we would benefit from AR.

### What does this mean for business?

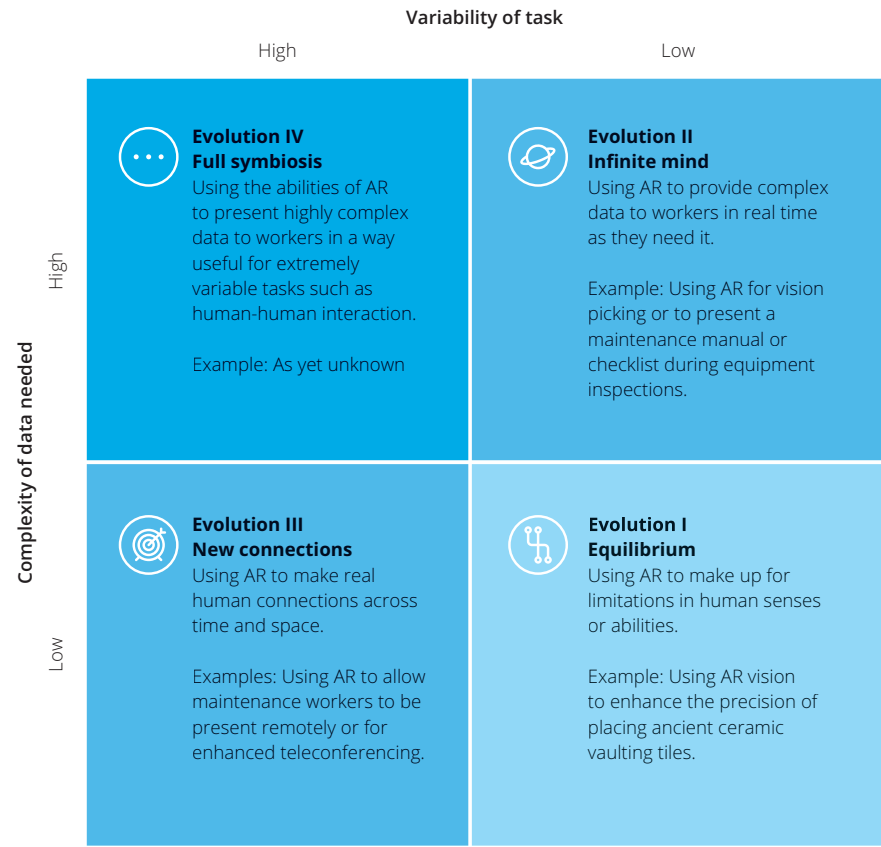
Today’s work environment often asks workers to perform tasks that are both increasingly data-intensive and increasingly variable. These two attributes determine the value that AR can bring to an organization. Large organizations will continue to offer a wide variety of jobs, falling across multiple categories, and AR can bring value to each in different ways. So understanding the type of tasks each job requires is the first step to understanding how AR can help. While concepts such as task variability and volume of data can seem abstract, organizations can work through these two questions to make this process a bit more intuitive:

- What do I need to know to accomplish this job successfully (complexity of information)?
- Where, and how often, do judgment and intuition come into play in this job (variability of task)?

Because these questions can be answered yes or no independently, the result is that AR can bring benefits and improve work along four main categories (figure 3). ➤

It seems clear that increasingly, we will need teaming between human and machine, with each playing to its strengths. In short, for many modern tasks, we would benefit from AR.

Figure 3. The impact of Augmented Reality across various job types



Evolution I: Equilibrium

In this scenario, both data complexity and task variability are low. Here, the employee can use AR largely to do what she already does today, but perhaps just a little bit better. In this stage, AR can be leveraged to provide insights the typical worker may not easily have at her fingertips, which can result in more efficient, more productive, and even more accurate work. This can involve using AR to make up for deficiencies in human senses or abilities, to uncover the temperature of an object via superimposed heat maps, to view three-dimensional visual terrain models, to be guided by other perceptual enhancements, or to provide an overlaid measurement scale that enables greater precision in construction, assembly, or repair.<sup>17</sup> For example, AR has been used

to help historical reconstruction efforts painstakingly reassemble Roman vaulting by precisely guiding the placement of each piece of the vault, providing feedback on when a portion had been placed incorrectly.<sup>18</sup>

AR can also be used to help “discover” new information, such as detecting when a machine or device might be emitting excessive heat or radiation, or providing enhanced visibility of terrain in conditions (fog, fire, darkness, etc.) in which humans might not be able to see or navigate on their own.<sup>19</sup>

In other cases, AR can log data and information automatically for the user, transforming how a workforce captures, reports, and shares information. This can, in turn, increase productivity, reduce errors in documentation, and streamline audit or accounting processes. It can also more accurately track physical tasks and labor to help optimize assignments and scheduling based on worker availability and capacity. All of these uses of AR represent a streamlining and potential improvement of current work processes, rather than an evolution of capabilities.

Implications of Evolution I— a new mindset

While Evolution I does not significantly change the tasks workers are asked to do, it does significantly impact how they are asked to accomplish them. Whether inspecting pipelines for leaks or setting ancient Roman vaults, workers will be asked to do familiar tasks in new ways. The rationale for this shift must be clearly communicated and workers must see some benefit or they may simply revert to older, more familiar techniques.

Evolution II: Infinite mind

Workers are increasingly being asked to handle high volumes of data—in many cases, a greater load than the human mind can possibly handle. For scenarios in which the volume of information is

high while tasks are relatively predictable, AR can be used to provide workers with a data overlay in a consumable way that still makes it possible to accomplish tasks. Here, AR can begin to enable workers to accomplish new tasks, or address old tasks in new ways.

Maintenance crew on an aircraft carrier, for example, must maintain and repair a wide variety of extremely complex machinery, from fighter jets to helicopters. This requires highly technical skills, but also the use of bulky manuals; crewmembers often find themselves stopping and starting as they scroll through documentation to find the correct set of instructions to accomplish a task. AR can free the maintenance crew from the need to remember large lists or carry around bulky manuals, by overlaying instructions in the crew member's field of vision in real time, as needed. This makes the work faster and more accurate—and frees both hands to accomplish tasks. In fact, this is already becoming a reality with a beta test from Siemens, which has equipped its Vectron series of train locomotives with AR manuals.<sup>20</sup> These manuals allow workers to pull up CAD drawings or even repair instructions for the exact part they are looking at, offering them immediate and easy access to several thousand pages of information.

#### **Implications of Evolution II— new skills**


Evolution II makes huge volumes of data available to workers. This can allow them to perform previously impossible tasks, but it also requires new skills to navigate vast amounts of information. For example, now train drivers would not only need to know how to operate a train, they would also be required to learn how to inspect and use the AR tablet. Care must be taken in the training, and even hiring of these positions, given the new skills required.

#### **Evolution III: New connections**

In the third evolution, new connections can be formed using AR, enabling highly variable tasks with simple information requirements. The majority of tasks of this nature involve human interactions, which differ and can be highly unpredictable. Some, however, can require the user access data that a worker might not have at her fingertips. So in this stage, having ready and contextual access to that sort of information can enable higher productivity.

At its simplest, this sort of new connection can simply take the form of “see-what-I-see” sharing. For example, continuing with train maintenance, imagine a train that wouldn't start and a worker who, after attempting all of the typical troubleshooting steps, could not identify the malfunction. Since she doesn't know the problem, she cannot use AR to call up instructions to fix it. So instead, she could contact a small cadre of senior maintainers at a central facility. With AR showing those maintainers exactly what the worker on-site sees, they can help to diagnose the issue.

The employee can use AR largely to do what she already does today, but perhaps just a little bit better.

AR can also be used to capture and disseminate specialized knowledge. For example, a surgeon who just developed a novel, potentially lifesaving technique can use AR to easily share information and instructions with colleagues, spreading the word more quickly and effectively than a journal article would. By using AR, colleagues would then be able to access this information quickly during surgery, 



In these data-rich, fast-paced uses of AR, human-machine interaction goes beyond a simple interface between worker and tool; the human and machine become a true team.

should that specialized knowledge be needed at any given moment. In another scenario, engineers and designers could use AR to make the design process more efficient and less wasteful. Rather than printing or manufacturing physical prototypes to test product ideas, they could use AR to improve designs by planning and testing product assemblies or working with virtual prototypes during the design process.<sup>21</sup>

#### **Implications of Evolution III—untethered work**

Evolution III offers the opportunity to break free of the constraints of location. Now maintainers do not need to be in the same location as the machinery; workers can collaborate on designs or share notes across the globe. Much like the tele-work revolution enabled by the Internet, this use of AR will require some care to create cohesive teams that can work together effectively despite the loss of direct contact.

#### **Evolution IV: Full symbiosis**

This final evolution represents the culmination of AR's use in the workplace. In assisting workers with highly variable tasks that also require a great deal of information to complete, AR can augment and complement the human strengths of intuition, creativity, and adaptability with those of computing—the ability to handle, access, and analyze high data volumes while connecting with other resources in real time—to enable new

capabilities and maximize performance. This can bring the best of both humans and machines together, with machines able to deal with more complex data than any human could, and workers able to adjust to variability faster and more reliably than any computer. In this way, Evolution IV describes the future of human-machine interaction and the future of work.

In these scenarios, AR can link a human worker to, for example, a digital supply network, overlaying data about supplies, expected shipment times, production schedules, external data, and machine functioning over a field of vision, enabling planning processes or re-routing troubled shipments in real time to reach the production site on time.<sup>22</sup> In this way, AR can bring together a full, complex network of constantly changing information and provide it in a contextual, visual manner to enable decision making in the moment.

In these data-rich, fast-paced uses of AR, human-machine interaction goes beyond a simple interface between worker and tool; the human and machine become a true team. Research from NASA offers a glimpse of what these future human-robot partnerships may look like, using AR for space exploration. Through research into joint human-robot teams, NASA is examining ways in which astronauts and scientists can collaborate naturally with robots and computing systems during complex missions via AR. NASA has pointed out that “to reduce human workload, costs, fatigue-driven error, and risk, intelligent robotic systems will need to be a significant part of mission design.”<sup>23</sup> The agency points in particular to actions such as “grounding, situational awareness, a common frame of reference, and spatial referencing” as crucial to performing its work effectively, making AR a useful partner to solve these

challenges. Using spatial dialog, NASA is looking to AR as a means of facilitating the collaboration between humans and robots as part of a holistic system. Taken back down to earth, similar AR-driven systems can be used to aid humans in highly unpredictable and potentially dangerous situations, such as search and rescue missions.<sup>24</sup>

In the long run, these uses of AR have the potential to completely reshape how work is done. Imagine it is 2025, and a cybersecurity analyst comes into the office for the morning. Defending a computer network involves sifting through immense volumes of data, but also reacting to the unpredictable variability of human hackers on the other side. After getting his morning cup of coffee, the analyst can sit down at the terminal and ask the system, “What is unusual about my network this morning?”<sup>25</sup> If the system detected something unusual, not only could it highlight any unusual parameters, it could also identify who the individual hackers might be and what they may be after.<sup>26</sup> With this information, the analyst can better respond to the variability of the situation and take appropriate action to deny the hacker’s goals and protect the system.

Far from being the realm of science fiction, the component parts of such a system already exist. What remains is for leaders to combine them in a way that is suitable for their organizations.

#### **Implications of Evolution IV—pushing the boundaries**

More than any other use of AR, Evolution IV pushes the boundaries of human-machine interfaces to uncover previously unknown uses of the technology. As with any exploration into uncharted territory, it is likely to uncover new problems that designers or operators of AR may not

have anticipated. As a result, companies electing to try to reap the large rewards of such a massive transformation need a workforce that is ready for the inevitable hiccups and motivated by the sheer challenge of exploring new ground.

#### **Evolving into the future**

These four evolutions of AR are not firm categories that restrict how the technology can be used. On the contrary, they are simply guides to help understand how AR can change the work environment. As a result, the evolutions can—and quite likely will—begin to merge together over time. Take the two areas where AR has already been widely piloted, vision picking and “see-what-I-see” expert support. Vision picking is an Evolution II use of AR; warehouse workers use smart glasses to keep track of a pick list and direct them to the proper shelf to find those items. In “see-what-I-see” support, part of Evolution III, workers are able to call upon experts to help them diagnose issues on the fly.

**Companies electing to try to reap the large rewards of such a massive transformation need a workforce that is ready for the inevitable hiccups and motivated by the sheer challenge of exploring new ground.**

Flash forward a few years into the future, and we can see how both examples have expanded and pushed the boundaries of AR’s potential. The same vision picker now can not only see where the next item to be picked is located, but can also see other workers and their locations, passing items back and forth on lists depending on who is closest (Evolution III). The handful of

employees in the warehouse are supplemented by an automated workforce that can take over many of the less difficult and repetitive tasks, such as moving inventory (Evolution IV). In addition, passive capturing of product data can help create records of arriving and departing shipments without the need to stop and answer phones, talk to drivers, or sit at a work station (Evolution I). The wearable AR device has become a seamlessly integrated tool that allows workers to have maximum flexibility, access to information, and the ability to interface with a wide range of systems, from IoT-enabled machinery to legacy video feeds and communication systems.

A similar story can be told around “see-what-I-see” support. The system continues to offer live video support, but only as a last-ditch effort to solve a problem that has likely been faced before. The field worker is now equipped with a wearable device that has a library of solutions, compiled from a database of previous issues. By simply focusing on a given part within the field, the wearable will be able to identify the specific part and download performance data from sensors on that part. Predictive maintenance algorithms will then be able to show the worker directly when the part will likely fail (Evolution IV).<sup>27</sup> If the part needs to be replaced, an overlay of how-tos will provide the field operator with just-in-time, step-by-step information including sequencing, proper tools, and tips/tricks to move through the process (Evolution II). Once completed, the AR device will record the maintenance procedure and the data will be added to better predict future part failures or maintenance needs before they become an issue (Evolution I).

The future of work merges humans and machines into one team so that they can seamlessly accomplish multiple types of tasks quickly and intuitively. ➤

So the real challenge to achieving the future of work promised by AR is not technological; it lies in how AR changes work itself.

### Realizing the future

How will this future of work be realized? Certainly the technology must continue to develop. Currently, AR still has some technical limitations, which include the need for tethering (being wired to a PC or laptop for processing power), an inability to recognize 3D objects, and a lack of actual spatial awareness. Much of AR is currently limited to 2D image recognition, meaning that devices can only recognize 3D objects from within a limited angle. And while the current technology can easily create 2D overlays on 3D objects, without the ability to lock these digital items onto the physical environment, it is difficult to accomplish anything meaningful. Hardware, too, must continue to develop; many headsets are clunky and awkward and have a very limited field of view, which make them seem restrictive and can be dangerous in high-risk environments (warehouses, industrial settings, etc.).

While the above may seem like a long list of shortcomings, they are all well-known and improvements are already being developed. So the real challenge to achieving the future of work promised by AR is not technological; it lies in how AR changes work itself. In other words, the impact of AR can stretch far beyond mere technology and touches how we work as individuals and as teams. This is where the true hurdles to AR lie and, as a result, it is where organizations would likely need to take the critical first steps toward achieving an AR-infused workplace.

Organizational leaders should understand that preparing a workforce for the inevitable onslaught of technologies that will support the emergence of an augmented workplace requires a shift in culture toward innovation and collaboration. Leaders also need to provide an incentivized way to integrate technology and just-in-time learning into

the DNA of the organization. Here are some practices leaders could adopt to help build a more innovative and collaborative culture:

- **Give credit for explorative and “just-in-time” learning.** Employees could earn credit for activities such as watching TED Talks and listening to educational podcasts, as well as sharing solutions to issues and best practices with colleagues through “lunch and learns.” These informal sessions, in particular, can help develop a culture that values active problem solving.
- **Promote the use of emerging toolsets (such as Skype, FaceTime, and Speech to Text) to increase the adoption of new productivity tools as they become available.** This can be done by making tools readily available and having a rollout plan that includes incentivizing the use of new technologies. For example, encourage staff to use webcasts, screen sharing, and the live chat tool by having more remote meetings or creating work-at-home opportunities.
- **Create a culture of technology integration and play.** Organizations that adopt technical solutions quickly have established a culture of exploration where play is often encouraged. Having activities such as hackathons, where colleagues are provided a “play time” to identify ways in which tools can be used to solve problems, can create a culture where innovation and problem solving are recognized as important aspects of the organization.
- **Cultivate a fast-fail mind-set among your staff.** The fear of failing can choke innovation, stifle problem solving, and slow the adoption of toolsets that can make the workplace more efficient. A culture that encourages a “fail fast” mind-set where experimentation is supported



and failures are viewed as learning opportunities—and as such, stepping stones on the path to success—can quickly adapt to innovations as they emerge in the marketplace.

By instilling these features in a workforce, an organization can help ensure that it is positioned to take advantage of the benefits of AR, wherever those lead—even to the moon. ●

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by **Brenna Sniderman**, Senior Manager, US Insights, Deloitte Services LP, **Cary Harr**, Senior Manager, Digital, Deloitte Consulting LLP and **Joe Mariani**, Manager, Market Insights, Deloitte Services LP

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#### Endnotes

- Magrid Abraham and Marco Annunziata, "Augmented reality is already improving worker performance," *Harvard Business Review*, March 13, 2017, [hbr.org/2017/03/augmented-reality-is-already-improving-worker-performance](http://hbr.org/2017/03/augmented-reality-is-already-improving-worker-performance).
- Alan Taliaferro et al., *Industry 4.0 and distribution centers: Transforming distribution operations through innovations*, Deloitte University Press, September 12, 2016, [dupress.deloitte.com/dup-us-en/focus/industry-4-0/warehousing-distributed-center-operations.html](http://dupress.deloitte.com/dup-us-en/focus/industry-4-0/warehousing-distributed-center-operations.html).
- IEEE Standards Association, "Augmented reality," [standards.ieee.org/innovate/ar/](http://standards.ieee.org/innovate/ar/).
- Michael E. Raynor and Mark Cotteleer, "The more things change: Value creation, value capture, and the Internet of Things," *Deloitte Review* 17, July 17, 2015, [dupress.deloitte.com/dup-us-en/deloitte-review/issue-17/value-creation-value-capture-internet-of-things.html](http://dupress.deloitte.com/dup-us-en/deloitte-review/issue-17/value-creation-value-capture-internet-of-things.html).
- Paul Chandler and John Sweller, "Cognitive load theory and the format of instruction," *Cognition and Instruction* 8, no. 4 (1991): pp. 293–332.
- Amanda Albright, *Augmented reality: Marker vs markerless AR*, Dartmouth College Library research guides, accessed February 10, 2017.
- Nelson Kunkel et al., *Augmented and virtual reality go to work*, Deloitte University Press, February 2016, [dupress.deloitte.com/dup-us-en/focus/tech-trends/2016/augmented-and-virtual-reality.html](http://dupress.deloitte.com/dup-us-en/focus/tech-trends/2016/augmented-and-virtual-reality.html).
- Institute for the Future, "Human + machine: A winning partnership," 2010.
- Gary Kasparov, *The chess master and the computer*, New York Review of Books, February 11, 2010.
- Ian White, *The History of Air Intercept Radar & the British Nightfighter* (Pen & Sword, 2007), p. 207.
- Peter Lyman and Hal R. Varian, "How much information," 2003, [groups.ischool.berkeley.edu/archive/how-much-info-2003/](http://groups.ischool.berkeley.edu/archive/how-much-info-2003/), accessed February 20, 2017.
- Verlyn Klinkenborg, "Editorial observer; trying to measure the amount of information that humans create," *New York Times*, November 12, 2003, [www.nytimes.com/2003/11/12/opinion/editorial-observer-trying-measure-amount-information-that-humans-create.html](http://www.nytimes.com/2003/11/12/opinion/editorial-observer-trying-measure-amount-information-that-humans-create.html).
- For how companies are increasingly deriving value from information see Raynor and Cotteleer, "The more things change." For more on how humans struggle to deal with large volumes of data see Richards Heuer, *Psychology of intelligence analysis*, Center for the Study of Intelligence, Central Intelligence Agency, 1999.
- National Highway Traffic Safety Administration, "Traffic fatalities up sharply in 2015," press release, April 29, 2016.
- John Payne, "Task complexity and contingent processing in decision making: An information search and protocol analysis," *Organizational Behavior and Human Performance* 16, issue 2 (August 1976): pp. 366–387.
- Jesse Emspark, "Computers can sense sarcasm? Yeah, right," *Scientific American*, August 26, 2016.
- Nicholas R. Hedley et al., "Explorations in the use of augmented reality for geographic visualization," *Presence* 11, no. 2 (March 13, 2006): pp. 119–133, [www.mitpressjournals.org/doi/abs/10.1162/1054746021470577#.WJ3H2PkrJPY](http://www.mitpressjournals.org/doi/abs/10.1162/1054746021470577#.WJ3H2PkrJPY); Paul Milgram et al., Applications of augmented reality for human-robot communication, IEEE Xplore, [ieeexplore.ieee.org/abstract/document/583833/?reload=true](http://ieeexplore.ieee.org/abstract/document/583833/?reload=true).
- Joshua David Bard et al., "Reality is interface: Two motion capture case studies of human-machine collaboration in high-skill domains," *International Journal of Architectural Computing* 14, issue 4 (October 5, 2016): pp. 398–408.
- Gartner, "Gartner says augmented reality will become an important workplace tool, press release, January 14, 2014, [www.gartner.com/newsroom/id/2649315](http://www.gartner.com/newsroom/id/2649315).
- "Maintaining locos with augmented reality," *Railway Gazette*, May 17, 2015, [www.railwaygazette.com/news/technology/single-view/view/maintaining-locos-with-augmented-reality.html](http://www.railwaygazette.com/news/technology/single-view/view/maintaining-locos-with-augmented-reality.html).
- S. K. Ong et al., "Augmented reality aided assembly design and planning," *Manufacturing Technology* 56, issue 1 (2007): pp. 49–52, [www.sciencedirect.com/science/article/pii/S0007850607000145](http://www.sciencedirect.com/science/article/pii/S0007850607000145).
- F. Doil et al., "Augmented reality for manufacturing planning," proceedings of the workshop on virtual environments, 2003, pp. 71–76, [dl.acm.org/citation.cfm?id=769962](http://dl.acm.org/citation.cfm?id=769962).
- Scott A. Green et al., "Human-robot collaboration: A literature review and augmented reality approach in design," *International Journal of Advanced Robotic Systems*, January 1, 2008, [journals.sagepub.com/doi/abs/10.5772/5664](http://journals.sagepub.com/doi/abs/10.5772/5664).
- Ibid.
- Chris Bing, "Air force cyber analysts will be getting virtual assistants," FedScoop, January 20, 2017, [www.fedscoop.com/air-force-cyber-analysts-will-getting-virtual-assistants/](http://www.fedscoop.com/air-force-cyber-analysts-will-getting-virtual-assistants/).
- Steve Norton, "Scotiabank deploys deep learning to improve credit card collections," *Wall Street Journal*, February 6, 2017.
- Chris Coleman, Satish Damodaran, Mahesh Chandramouli, and Ed Deuel, *Making maintenance smarter: Predictive maintenance and the digital supply network*, Deloitte University Press, 2017.



A photograph of a window looking out onto a body of water at sunset. The sky is a mix of blue and orange, with clouds catching the low sun. The water is calm with some ripples. In the foreground, a white railing is visible.

# A room with a view

What is driving investment in  
the Middle East hotel market?



From a local investor perspective, key motivations include longer-term investment, portfolio diversification, income returns and status through brand association. In a region where cash is king, hotels can be used to generate a higher amount of income yield/continuous cash compared to other assets, which can be further invested into other businesses.

Despite falling revenues in the Gulf Cooperation Council (GCC) region's hotel sector, the overall number of hotel projects announced continues to rise. What is driving this investment and what is the market outlook for the hotel sector in the region?

As there is a limited market for the acquisition of trading hotels in the GCC region (known as the secondary market), the majority of investment in the GCC is in the development of new hotels. This has led to an increasing number of new hotels being developed in Dubai, despite recent falling revenues and overall performance in the sector.

#### Strong comparative global returns

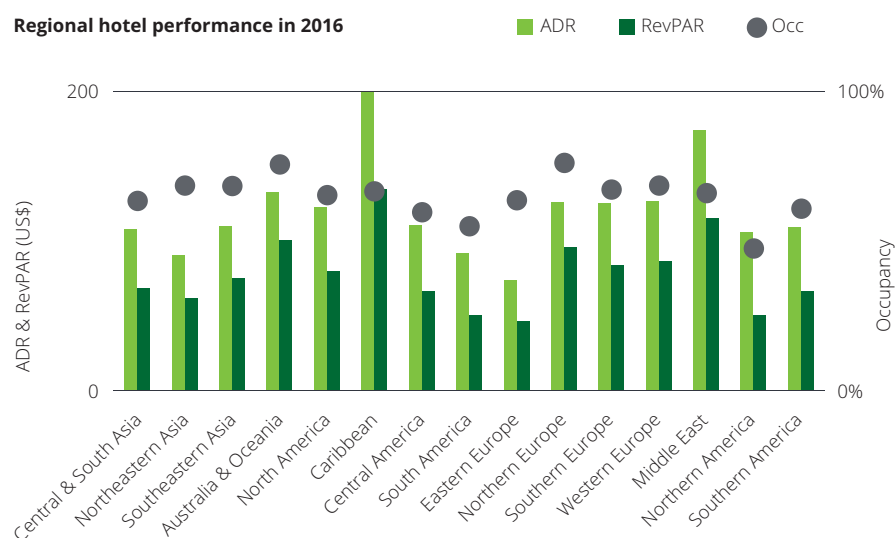
Despite falling occupancy and room rates, certain markets in the Middle East continue to present an attractive investment opportunity on a global comparative basis. In 2016, gross operating profit across the region averaged around 40 percent. Hotels in the region achieved an average Revenue per available room (RevPAR) of US\$115—a fall of around nine percent from the previous year. Globally, this is second only to Caribbean hotels that achieved an average RevPAR of US\$135.

#### Investment drivers

While the hotel industry in the GCC looks to attract international interest, investment remains primarily driven by local investors—with the exception of investment by Indian nationals. Some international investors seem deterred by issues related to the region's legal and regulatory environment and currency risks.

From a local investor perspective, key motivations include longer-term investment, portfolio diversification, income returns and status through brand association. In a region where cash is king, hotels can be used to generate a higher amount of income yield/continuous cash compared to other assets, which can be further invested into other businesses. Another key factor is the regional push for economic diversification, with tourism being at the forefront of the agenda. The introduction of the White Land tax in Saudi Arabia (a 2.5 percent tax on undeveloped land plots exceeding 5,000 square meters within city limits) has also spurred hotel investment in the country, as hotels are generally able to generate a higher income return compared to other real estate assets.

Regional hotel performance in 2016



Source: STR Global

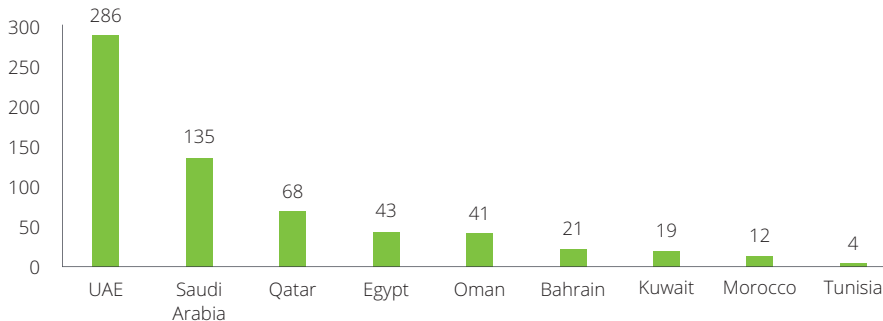
#### Which markets and why?

While geo-political issues affect the region as a whole, market transparency, tourism economics and infrastructure vary across key markets and play a major role in attracting investment.

The United Arab Emirates (UAE), in particular, remains the most attractive market in this regard, with a strong tourism demand forecast. The Saudi market has strong fundamentals in terms of population and religious tourism demand, but is constrained by a limited, albeit developing, investment market.

This is evidenced by the level of upcoming supply in planning or under

Number of projects by region



Source: MEED Projects

construction with the majority being in the UAE and Saudi Arabia. Oman has also seen increased hotel investment interest in Muscat, Salalah and new destinations such as Sohar and Duqm.

### Financing trends and access to capital

One way to look at the hotel investment market is through the capital structure. The financing structure for hotels in the region previously adopted the typical equity and bank debt sources.

We have seen a shift in the way developers are raising non-debt finance. Due to tightening bank liquidity, developers are turning to alternative sources of finance such as mezzanine funds for last mile funding. Investment firms dominate the mezzanine financing landscape—with a rise in the formation of capital in the mezzanine and junior debt space in the UAE recently.

Developers are also turning to alternative sources of finances such as the condo hotel model and Real Estate Investment Trusts or Funds (REITs/REIFs) structures to fund hotel development and investment. These structures provide several advantages both to the developer and investor markets. Both structures have a clear legal framework and allow for smaller investments from a wider pool of investors, solving the challenge of sourcing large investors.

We have seen a shift in the way developers are raising non-debt finance. Due to tightening bank liquidity, developers are turning to alternative sources of finance such as mezzanine funds for last mile funding.

### The bank perspective

From a debt perspective, the market is facing stricter terms and increased due diligence. Banks are no longer taking pure construction risk based on feasibility studies, even if the numbers appear attractive. Their criteria are shifting more towards the profile of the investor/developer. Liquidity is generally available for qualifying investors who have a development track record and alternative sources of free cash that they could use to service project debt until the project is able to generate cash.

In general, banks are no longer willing to finance the cost of land and typically require investors to include the land as a portion of their equity contribution. A typical offer for the major markets (such as the UAE and Saudi Arabia) would include a Loan To Value (LTV) ratio of 60-70 percent on hard construction costs

only, at a cost of 5.5-6 percent (Eibor<sup>1</sup> + margin.) Loan tenure generally ranges between 2-3 years of construction, plus 7-8 years of amortization, with a 20-30 percent balloon payment.

Local banks that have advanced leveraged finance capabilities on sophisticated structured financing deals will sometimes work with alternative lenders who, generally, play a role during construction.

### Market outlook

Within the Middle East, Sovereign Wealth Funds (SWF) and government-related developers are likely to continue driving hotel development in their respective local markets, while family businesses are likely to focus on key regional cities.

The largest issues deterring international investment are the legal and regulatory environment and currency risks. If these issues are addressed, the market could see a rise in activity within its secondary market and the development of a more mature real estate institutional investment environment.

In the meantime, developers continue to explore alternative funding structures, such as real estate investment trusts and funds, alternative debt, and the Condo Hotel model.

Bank debt will likely continue to be available for qualifying investors who have a development track record and alternative sources of free cash. ●

by **Grant Salter**, Director, Travel Hospitality and Leisure, Financial Advisory, Deloitte, Middle East

### Endnotes

1. Emirates Interbank Overnight Rate





# IFRS 9: ready for impact

Are you ready for the shake-up?

Saumya Krishna explores how impairment under IFRS 9 will impact organizations and its relevance to the Middle East region.

Born from the financial crisis to change the way banks and other financial institutions account for loans and other financial assets, organizations should not underestimate its implications on their internal control system, financial statements and the bottom line.

**T**he International Financial Reporting Standard IFRS 9 (Financial Instruments) comes into effect on 1 January 2018. Pervasive in nature, it introduces a paradigm shift in financial reporting from historical application of impairment reviews for determining allowances to a forward-looking approach (Expected Credit Loss, or ECL, model) reflecting the decision-making process of companies. Born from the financial crisis to change the way banks and other financial institutions account for loans and other financial assets, organizations should not underestimate its implications on their internal control system, financial statements and the bottom line. The standard will affect both, financial and non-financial institutions.

#### **Does it have any additional relevance to the Middle East region?**

The Middle Eastern culture is deep-rooted in tradition and values. The corporate sector is characterized by closely held family-owned companies, multiple-entity organization structures, related party transactions and often, an overlap between ownership and management.

Credit default is also viewed differently in the region—for instance, it is a known business practice not to charge interest on late payment, and equally common for debtors to delay payments for months. Related party loans are sometimes given at low or no interest charge, irrespective of the borrower's financial credibility. IFRS 9 will require an impairment provisioning on such assets after taking into consideration the associated risks and the probability of default, including the time value of money related to delays. This requirement directly impacts the profit

and loss statement and is likely to influence business decision-making in the future.

The region is also unique in the way it reacts to changes in macroeconomic variables. Consider the example of the sharp drop in oil prices during 2015 and 2016. While oil-importing European economies reacted positively to this drop, it implied adverse business conditions for most businesses in the region due to heavy economic reliance on hydrocarbon revenues. Similarly, while the unemployment rate is a critical indicator of economic health in western countries and may be an important variable in estimating expected losses, it is of low relevance in the Gulf Cooperation Council (GCC) region on account of a predominant, contract-based expatriate workforce.

The impact of IFRS 9 reaches beyond accounting. It requires changes in systems and processes. Established market dynamics of western markets may not be relevant in the region. As part of impairment provisioning under IFRS 9, companies will have to identify relevant macroeconomic variables for their businesses, study them for historical trends and impact, establish their relationship with historical default rates and track them for available forecasts in order to estimate expected losses.

As put by Ranjith Chandran: "It is challenging for Small and Medium Enterprises (SMEs) to fundamentally change the way of calculating bad debt provision for receivables from an incurred loss to an expected loss model, and make a provision charge from day one. Clients who were earlier reluctant to make impairment provision on customers

who, though paid in full but much later than the due date, will now have to take an impairment loss under IFRS 9. This is because the timing of payments directly affects present value and thus the amount of impairment loss.

Management and auditors will have to watch out for fundamental errors in the expected loss model because of the lack of availability of historic default rates and the relative inexperience in incorporating forward-looking information into the ECL provision matrix. Both, the data and the methodology have never been subject to scrutiny in the past.”<sup>1</sup>

#### FAQs on IFRS 9 for non-financial entities

IFRS 9 fundamentally redrafts the accounting rules for financial assets without established precedents or tools, especially for non-financial entities. As the mandatory implementation date of 1 January 2018 is fast approaching, chief executive, financial and risk officers (CEO, CFO and CRO) have begun discussing implementation. Below, we address some of the key issues and questions.

#### Q. What is the key difference between the old and the new approach to impairment?

**A.** In some ways IFRS 9 is much simpler than its predecessor IAS 39. It is principle-based and logical rather than rule-based. It enables accounting to reflect the nature of the financial asset (determined by its cash flow characteristics), the company's business model (how the assets are managed) and its risk management practice on financial statements. It is forward-looking and ensures a more accurate, and timely assessment of expected losses.

#### Q. I'm not a financial institution. Does it really impact me?

**A.** Yes, if you have any of the following assets (Financial Assets): debt instruments, lease receivables, trade receivables, retention receivables, contracts assets (defined in IFRS 15), related party loans (e.g. loan given to a parent/subsidiary/any related party), construction work in progress and derivatives.

Note: There is no difference between IFRS 9 and IAS 39 when it comes to Financial Assets that are opted at Fair Value Through Profit and Loss (FVTPL) at original recognition.

Equity and Derivatives will continue to be accounted for at fair value. Embedded derivatives are no longer required to be separated from the Financial Assets.

**2. Impairment:** Single impairment model based on a forward-looking expected credit loss (ECL) model.

**3. Hedge accounting:** IFRS 9 allows more exposure to be hedged and provides for principle-based requirements that are simpler than IAS 39 and aligned with an entity's risk management strategy.

#### Q. What is ECL and how will this be estimated?

**A.** Every receivable carries with it some probability of default and, therefore, has an expected loss attached to it.

## The impact of IFRS 9 reaches beyond accounting. It requires changes in systems and processes.

#### Q. What is the overall framework of IFRS 9?

**A.** IFRS 9 stands on three pillars:

##### 1. Classification and measurement:

This relates to how a financial asset is accounted for in financial statements and how it is measured on an ongoing basis. It requires an understanding of the characteristic of the financial asset and the purpose of holding it.

The standard introduces a cash flow and business model test that are typically qualified by trade receivables, vanilla bonds, debt instruments and loan to related parties. As such, these assets will require an impairment assessment and subsequent adjustment to carrying values.

IFRS 9 introduces new impairment requirements that are based on a forward-looking expected credit loss (ECL) model. In simple terms, it is the present value of probability adjusted estimate of loss that would occur if the asset defaults.

ECL should be based on the nature of the financial asset, financial strength and credibility of the debtor, experience in dealing with similar assets, current macroeconomic conditions, expectations of future trends and behavior, forecasts of relevant variables and judgment.

We know that some companies in the region do not have an advanced understanding of their





While IFRS 9 can be seen as an accounting policy change, in line with the intention of the IASB and regulators, it creates business-wide challenges for organizations.

customers'/borrowers' financial strength, and credit ratings from agencies are not as readily accessible as in other parts of the world. As such, estimating the ECL will require a fundamental shift in the internal processes and credit risk management framework of companies to be able to capture, document and analyze relevant qualitative and quantitative factors. In the initial years of implementation, companies would also need to perform data mining to consider and quantify historical loss rates of customers/lessees/borrowers/other debtors.

As such, a positive outcome of IFRS 9 impairment assessment requirements is a necessary shift towards better Know Your Customer (KYC) practices in the region.

**Q. Would investments in equity interest be assessed for impairment under IFRS 9?**

**A.** No. Investment in equity is accounted either at Fair Value Through Profit and Loss (FVTPL—in which case all changes in fair value are automatically included in the profit and loss statement) or at Fair Value Through Other Comprehensive Income (FVOCI), in which case changes in fair value are adjusted on the balance sheet.

**Q. What's the expected financial impact of the new impairment framework?**

**A.** It is widely expected that impairment provisioning will increase under IFRS 9, and the biggest impact would be felt during the transition period from IAS 39 to IFRS 9.

The IASB invited preparers of financial statements from major geographical regions to participate in fieldwork to test and discuss its proposals, including the operational challenges for implementation of IFRS 9, the responsiveness of the proposed model compared to IAS 39 and the directional impact on allowance balances. It was estimated that on transition, the impairment provisions under IFRS 9 could be 20-250 percent higher compared to IAS 39. It is expected that the impairment provisions will be highest where the economic forecast is the worst.

Deloitte conducted an ECL survey in the United States during 2017 to understand how the banks are approaching ECL implementation and the challenges they face. On average, most surveyed banks expect that their impairment provisioning would increase by more than 10 percent (different for different categories of loans) as a result of transition to IFRS 9.

The issue most often cited by surveyed banks as their most challenging implementation task is development of statistical ECL models.

**Conclusion**

While IFRS 9 can be seen as an accounting policy change, in line with the intention of the IASB and regulators, it creates business-wide challenges for organizations. ECL provisioning will have a direct, quantifiable impact on the profit and loss statements and an indirect but material impact on a wide range of factors contributing to shareholder value.

The impairment under IFRS 9 will align accounting to actual business practice reflecting a better and more prudent view of the credit default and related exposure. Additional disclosures will ensure higher transparency for shareholders, investors and other users of the financial statements. Implementation of a suitable ECL framework is going to be one of the most significant accounting projects over the coming years. Each entity will have to build its own ECL model appropriate for its size and complexity; and supported by historical, current and forecast data of relevance. Management's judgment and understanding of business risks will play an equally important role in validating the inputs and output of the ECL model. Availability of forward-looking data in the region may prove to be challenging for regional economies where availability of historical and forecast data, and resource availability is limited. Entities will need to find a balance between complexity, practicality and accuracy.

Businesses need to begin the process as soon as possible, or risk falling behind in meeting critical deadlines or worse, risk non-compliance. ●

by **Saumya Krishna**, Assistant Director, Valuations Modeling Services, Financial Advisory, Deloitte, Middle East

#### Endnotes

1. Ranjith Chandran, Partner, Deloitte (IFRS 9 and Financial Instruments Subject Matter Expert)

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#### A brief history

The global financial crisis in 2008 invited a chorus of criticism of accounting policies, in particular relating to the use of fair value accounting for financial instruments. Enter IAS 39: rule-based and backwards looking, grounded on historical data that proved to be disconnected from new market realities. Fair value accounting led to a domino effect when all organizations, whether financial institutions or not, reacted similarly and at the same time to changes in market conditions thereby exacerbating its impact and further contributing to its collapse. Regulators recognized that the current models were not designed to recognize credit losses on a forward-looking basis. As a result, the International Accounting Standards Board (IASB) retraced and the revised expected loss framework within IFRS 9 was issued in 2014. It is mandatory for periods beginning on, or after, 1 January 2018.

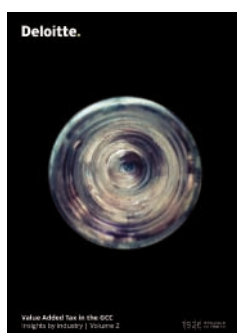
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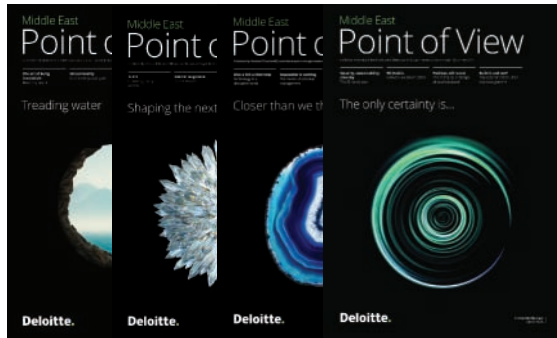
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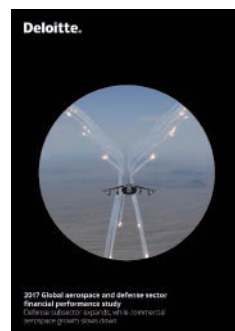
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