Artificial Intelligence in Middle East and Africa

Outlook for 2019 and Beyond

How 112 Major Companies Benefit from AI

REPORT COMMISSIONED BY MICROSOFT AND CONDUCTED BY EY

Contents

Artificial intelligence is already changing society and empowering people in new ways by enabling breakthrough advances in areas like healthcare, agriculture, education and transportation. As this technology continues to grow, we will work to deploy AI around the world ethically, inclusively, and with transparency to ensure that it works for everyone.

— Brad Smith, President at Microsoft

Foreword

We see AI as a tool to accelerate our customers' digital transformation and growth journeys.

AI is fueling digital transformation across the Middle East & Africa today. It has the power to amplify human ingenuity and extend our capabilities, empowering us to achieve more. Artificial Intelligence is already improving our lives today and promises to change the world in ways unimaginable to us now.

The AI maturity assessment study, conducted in five countries across MEA, highlights the strategies adopted at different layers of an organization today and helps us understand their readiness in AI adoption, rate of impact and benefits from its implementations, as well as how AI is being approached on a practical level.

This study is also a stepping stone in our efforts to better understand the needs of our customers in the region and accelerate their growth journeys.

Samer Abu-Ltaif
President - Microsoft Middle East and Africa

AI is creating new roles both in and outside the technology industry. In order for people to fill these roles, we must address the growing skills gap. This effort is at the heart of our mission of empowering everyone to achieve more. Learning will be a continuous effort, we will work tirelessly to skill, upskill and reskill the workforce of now and tomorrow.

Technologies such as AI, are fundamentally changing the fabric of our everyday life. They have become the fuel that fires the digital-transformation furnace and are rapidly generating new roles both inside and outside the technology industry - living up to the promise of the Fourth Industrial Revolution to be a net creator of jobs.

But we must rise to the challenge we face – that of a skills gap amid rising unemployment in the MEA region. Microsoft's mission is to empower every individual and organization on the planet to achieve more. Part of that mission involves looking at the job market, and work tirelessly to skill, upskill and reskill the workforce of now and tomorrow.

Jaime Galviz,
COO and CMO Microsoft Middle East and Africa

At a Glance

While the hype of artificial intelligence (AI) and its potential role as a driver of transformational change to businesses and industries is pervasive, there are limited insights into what companies are actually doing to reap its benefits. This report aims at getting a deeper understanding of how companies currently manage their AI activities, and how they address the current challenges and opportunities ahead.

To get to the heart of this agenda, we received input from AI leaders in 112 companies, across 7 sectors and 5 countries in the Middle East and Africa, via surveys and interviews. Below is the brief summary of what they had to say.

AI is a "hot topic" - but more so on C-level than in daily operations
80% of the companies respond that AI is considered an important topic on the executive management level. This is significantly higher than on the non-managerial / employee level where AI is only considered an important topic in 26% of the companies. Interestingly, Board of Directors also came out lower with only 37% of respondees reporting that AI is important to their board. This strong executive sponsorship resulted in 38% of organizations driving their AI agenda from the top down, although 95% of companies that were more advanced in their AI agenda had a combined top down and bottom up model in operation.

Most benefits expected from 'optimizing operations', with 'transforming products and services' next in line
89% of the respondents expect AI to generate business benefits by optimizing their companies' operations in the future. This is followed by 71% that expect AI to be key in the creation of new products and services through AI driven insights that enable tailored and personalized products, or processesing more complex data sets that drive new products to address the needs of a changing consumer market. Surprisingly, the poorest showing at 63% was direct customer engagement.

AI is expected to impact entirely new business areas in the future
28% of the companies expect AI to have a high impact or a very high impact on business areas that are 'entirely unknown to the company today', although the exact nature is still vague. The overwhelming majority, however, expect AI to impact the core of the current business with 71% of companies striving to improve their primary value chains and unlock short-to-medium term benefits. With AI opportunities close to home as well as pushing companies into totally new domains in the future, it is perhaps not surprising that AI is receiving attention as a key topic for executive management.

Very few of the 112 companies consider themselves 'advanced' with AI
Despite the sizable impact that companies expect from AI, only a very small proportion of companies, constituting 7% of the total sample, self-report that AI is actively contributing to 'many processes in the company and enabling quite advanced tasks today' (referred to as 'most advanced' in this report).

Another 20% are in the 'released' stage where they have selectively put AI to active use in one or a few processes in the company. The majority, 55% of companies, are still only planning for AI or are in early stage pilots. 13% of companies are self-rated as least mature, indicating that they are not yet thinking about AI at this stage.

Noticeable potential for AI in many corporate functions
The most widely reported adoption of AI (at 47%) was in the IT/Technology function, followed by R&D and Product Development with 30%, and Operations and Logistics with 20%. Interestingly, several functions are hardly using AI at all; most notably the Procurement function, where only 3% of the companies currently use AI, and Strategy with 3%. This is perhaps surprising, given the many use cases and applicable solutions in these functional areas.

8 key capabilities that are most important 'to get AI right'
When asking the respondents to rank the importance of 8 capabilities to enable AI in their businesses, Advanced Analytics and Data Management emerged as the most important, with AI Leadership closely grouped with the top two.

When self-assessing the capabilities where the companies are least competent, they point to Emotional Intelligence and AI Leadership - defined as the (lack of) ability to lead an AI transformation by articulating a vision, setting goals and securing broad buy-in across the organization.

To summarize, the challenge ahead appears to be as much about culture and leadership as it is about data, analytics, and technology.

What sets the most 'AI mature' companies apart?

They see AI predominantly being driven from a combination of technology push and business pull (57% of 'more mature' companies vs 38% of 'less mature' companies)*.

They report using a combination of structured and unstructured data for AI (53% of 'more mature' companies vs 42% of 'less mature' companies), and data from both internal and external sources (53% of 'more mature' companies vs 37% of 'less mature' companies).

They are looking to AI for insights to 'transform products and services' (82% of 'more mature' companies vs 64% of 'less mature' companies).

They expect AI will help them 'engage customers' (75% of 'more mature' companies vs 50% of 'less mature' companies).

* 'More mature' defined as companies that self-ranked as 4 or 5 on the maturity 5-scale, and 'less mature' defined as companies that self-ranked as 1 or 2.

Only 7%
of the companies are actively using AI in 'many processes and to enable advanced tasks'

Percentage of companies seeing 'optimizing operations' as top AI benefit:
89%

80%
of the companies
respond that AI is considered 'an important topic' on the executive management level

60%
of the companies
are using partners or alliances to obtain the required capabilities

Companies expecting AI to have a high impact on 'business areas that are entirely unknown today'
28%

70%
of companies
are using AI in a 'to predict' function

About this Report

What's new?

Artificial Intelligence is not new - it has existed for decades: processing voice to text or language translation; real-time traffic navigation; dynamically serving targeted advertisements based on personal data and browsing history; predicting trends and guiding investment decisions in financial institutions. The current developments have been fueled by an exponential rise in computing power, increasing accessibility and sophistication of powerful algorithms, and an explosion in the volume and detail of data available to feed AI's capabilities.

Reality vs. hype
Only recently have we started to see more widespread, scaled adoption of AI across sectors, value chains and ecosystems. Yet AI technology is quickly approaching a point where it is becoming a critical element in enabling companies across sectors to drive revenue, increase profits and remain competitive.

We hear people in many companies talk about AI. While the hype is pervasive, not a lot of people fully understand its technological potential, where it can create value or how to get started. This report provides a practical understanding of why companies in the Middle East and Africa are investing in AI, what they are investing in, and how they are managing the complicated process of adopting this new technology and deriving value across business opportunities.

Perspectives, experiences, self-assessment, and benchmarks
From new surveys, interviews and case studies gathered from approximately 112 companies, we provide a snapshot of the current state of AI in Middle Eastern and African markets. This includes analyzing AI's relative importance on the strategic agenda, it's expected impact and benefit areas, how mature companies are in terms of adoption, and examining self-reported competence levels regarding the capabilities required to succeed when implementing AI.

From the aggregate dataset we have been able to determine some benchmarks across the covered markets. The report also covers a full spectrum of industry groups which reveals interesting insights.

"The most important AI capability for business is the mindset. Employees should acknowledge that AI applications make their work life easier.

— Migros

Straight from the executives
This report and extensive dataset adds new insights primarily into how leading companies are approaching AI on a very practical level. We hear straight from executives how their companies are addressing current challenges, and how they apply AI to unlock new value pockets.

Based on the many interviews conducted, this report reveals some clear excitement and immense potential for using AI to bring new, improved products and services to market, create exceptional experiences for customers and employees, and create ways to operate that enhance performance across the board.

We learned that, regardless of which use cases the companies pursue and the role that AI currently has, taking a strategic outlook to assess the implications for the business and responding accordingly are increasingly seen as crucial for any executive agenda.

Contributions from open-minded and collaborative companies
We are extremely thankful for the time and effort the many executives have put into participating in interviews and providing data for this study. We're particularly appreciative of their willingness to openly share experiences and provide their perspectives on where the future of AI is heading.

While this indicates a general interest in the AI topic, it also speaks to the increasingly collaborative approach many leading companies are taking when entering new technology domains and embarking on journeys into uncharted waters.

Right now AI is the technology driving a lot of buzz and interest, but understanding how to use it to drive real business value is key.

— Etihad Airways

Some industries are already causing disruption through the use of new technologies. The AI journey must be started to see what's actually coming and so that you're ready for it.

— Nampak

The focus for companies shouldn't be so much on developing an AI strategy, but rather ensuring business strategy is enabled by AI and machine learning.

— Majid Al Futtaim

Rich Data

Which sources of information is the study based on?

This report combines multiple sources of data to determine why, where and how AI is currently being used in business. It provides an inside view across markets and sectors, combining local and regional views. The quantitative perspective measures how advanced companies are in terms of AI, and the qualitative perspective indicates how to develop the skills required to succeed with AI initiatives. We have received input from over 100 participating companies in the form of interviews responses to our online survey.

Extensive online survey data from business leaders in 112 companies

We have surveyed people with a leading role in managing the AI agenda in all the companies that have contributed to the study. This gives us an aggregate dataset that enables a perspective for each market and each sector, as well as comparative insights for the respective company types, sectors, and countries in the Middle East and Africa.

Qualitative in-depth interviews with senior business executives

In addition, we conducted deep-dive interviews to gain deeper, qualitative insights into how AI is affecting the executive agenda. Through conversations with business leaders, we report on where they expect AI will have an impact, how important AI is to their current and future business strategies, what benefits they hope to realize from implementing AI, and which capabilities they believe are key to advance AI maturity in their companies.

We also present case studies of specific companies, both local and international, to provide an understanding of what they are doing with AI and why, drawing on lessons learned and obstacles to be overcome when putting AI to use for specific use cases and to derive value on a strategic level.

Proprietary AI investment data

We have supplemented the primary source input from the companies with acquisition data from numerous sources, to take the pulse of the AI investment market in the Middle East and Africa. These insights help provide a picture of the wider AI ecosystem and its development in the region.

AI expert perspectives

With this wider understanding of AI start-up acquisitions, partnerships, and investment funding, we outline how investments in AI are skyrocketing, where AI investment is taking place geographically, and which sectors are making bets. As we are on the cusp of widespread change driven by AI, we also reached out to AI experts from academia for an outlook on AI technologies going mainstream, and to gain an understanding of the macro scale of business effects that they expect will materialize when looking into a distant future.

With the rapid change in business the dependency on data for decision making has never been higher, a reliable secure source of data should always be available to meet the high demand.

—Arab Potash Company

Recognizing and mitigating potential survey and interview bias

In terms of methodology, this report follows robust research design and protocol. Doing so minimizes potential bias, but does not eliminate it, as it is inevitable in market research. One potential type is social desirability and conformity bias, as the topic of AI receives lots of media and political attention. Response bias, including extreme responding, cultural bias, and acquiescence bias ("yea-saying"), are potential factors as we ask respondents to self-report on their respective companies' experience. Therefore, while this report follows best practice, some bias is possible. Nonetheless, with the combination of extensive survey data, interview data, investment data, and expert perspectives, we believe the report provides a solid foundation for an indispensable view of executive experience with – and future plans for – AI in business.

Executive Perspective

Who are the respondents that have contributed to the study?

The data approach used allows us to identify trends across industries and countries based on input from various functional business areas. Consequently, we have captured a range of insights, learnings, and perspectives from both strategic and technical points of view.

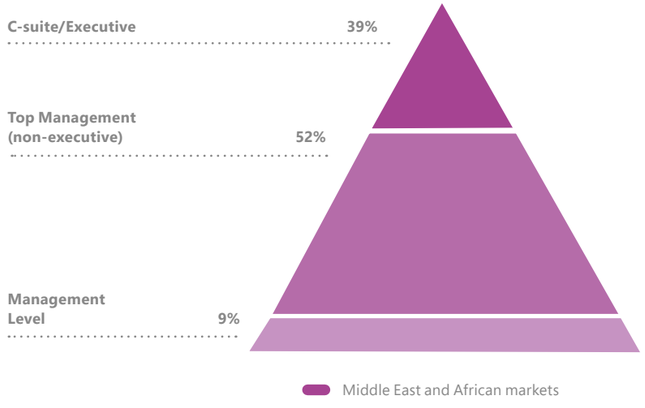
Respondents almost exclusively in senior level positions
To ensure that these insights and perspectives are relevant at the executive level, we surveyed and interviewed high-ranking officers with a responsibility for driving the AI agenda in their respective companies. With 91% of respondents being either part of top management or the executive management team, their input is likely well attuned to the general perspective and overall strategic direction of the companies they represent.

Functional diversity
The respondents cover very different functions, of which the most common are designated IT/Tech/Digital departments, followed by General Management roles, then Strategy and R&D/Product Development functions. This functional diversity increases the breadth of the report, with insights covering widely different aspects of AI and reflects the diversity of perspectives that affects the lens through which AI is perceived within an organization.

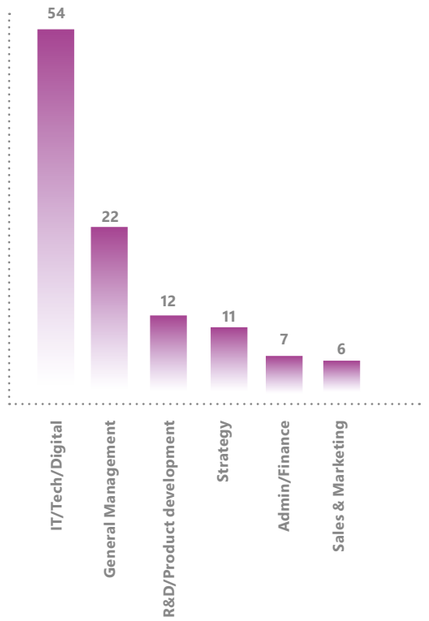
Surveyed companies span multiple sectors
The participating companies are spread evenly across seven sectors, with the majority of companies belonging to Professional Services, followed by Financial Services, Retail and Infrastructure & Transport. ICT & Media, Manufacturing & Resources, and Health are represented to a lesser extent. In certain countries, by virtue of the strong influence they have in their market, selected government departments were also surveyed and were categorised into the respective sectors that they influence and not grouped as a sector on their own (constituted less than 10% of the surveyed population).

More than 100 participants
Number of participants interviewed and/or online surveyed in the study

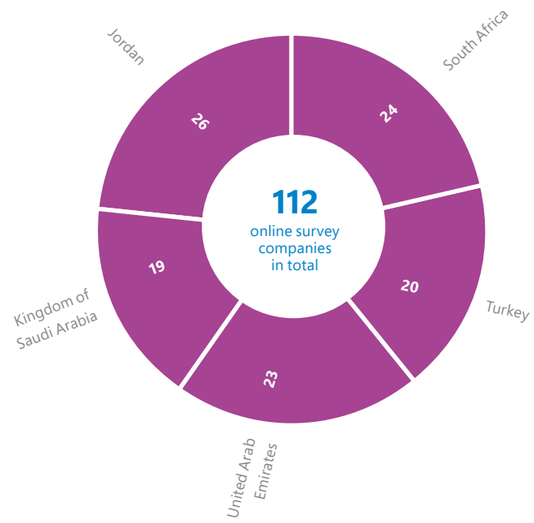
Majority hold a top management or executive position
Organisational level of person participating in the study for South Africa



Large group of respondents with a specific IT/Tech/Digital role
Organizational function of respondents in the online survey



Surveyed companies are well represented across each of the five Middle Eastern and African markets
Number of online surveyed companies per country



Seven major sectors covered in the study
Representation of participating companies per sector category

10% — **Health**
Pharmaceutical, Healthcare, Biotech

7% — **Manufacturing & Resources**
Manufacturing, Materials, Equipment

14% — **Financial Services**
Banking, Insurance, Investments

32% — **Professional Services**
Professional Services, Hospitality, Public Services, Membership Organization, Government Departments

12% — **Retail**
Consumer Products & Retail

12% — **ICT & Media**
Technology, Media/Entertainment & Telecom

13% — **Infrastructure & Transport**
Transportation, Energy, Construction, Real Estate

Setting the Scene

100+ Companies

AB InBev, Adenium Energy Capital, Alinma Bank, Allianz Turkey, Amman Municipality, Arab Potash Company, Arçelik, Assan Bilişim, Aveng, Bankalararası Kart Merkezi (BKM), BCX, Bigen Group, Bridgestone, Cairo Amman Bank, Careem, CarrefourSA, De Beers Group, Discovery Group, dnata, Emaar, Erdemir, Etihad Airways, Etihad Credit Export Insurance, Exxaro, First Abu Dhabi Bank, General Mobile, Harmony Gold Mining Company Limited, Hashemite University, Hello Group, Heriot-Watt University, Hikma Pharmaceuticals PLC, Imam Abdulrahman Bin Faisal University, Johnson & Johnson, Jolly Tur, Jordan Ministry of Energy and Mineral Resources, Jordan Ministry of Labor, Jordan Ministry of Transport, Jordan Payments and Clearing Company, Jordan University of Science and Technology, KSA Ministry of Finance, KSA Ministry of Health, KSA National Health Information center, Life Healthcare, Majid Al Futtaim Holding, Medscheme, Migros, MTN Group, MultiChoice Group, Nader Group, Nampak, Netmarble Turkey, Opet Petrolcülük A.Ş., Pharmactive, Publicis, Quantum Global Solutions, Sasol, Savola Foods Co., Setur, Smart Dubai, SMEC South Africa, Specialized Technical Services (STS), Standard Bank, Super Group, Teknosa İç ve Dış Ticaret A.Ş., The ENTERTAINER, Total Marketing Middle East, Transunion, Tüpraş, Türk Ekonomi Bankası, Türk Hava Yolları Kurumsal Gelişim ve Bilgi Teknolojileri (THY), TymeBank, UAE Prime Minister's Office, University of Jordan, Vacation Exchanges International Trading as RCI South Africa, Vakıf Emeklilik, WSP, Yapı Kredi Bankası, Zain

Note: Certain participating companies requested to remain anonymous and are not included in the list above. Also, certain companies supplied perspectives for more than one surveyed country.

Bits and Bytes

What technologies and data solutions are within the scope of the study?

AI can be defined as the ability of a machine to perform cognitive functions which are normally associated with humans. This includes reasoning, learning, problem solving, and in some cases even exercising human behavior such as creativity.

Advanced AI applications are not yet widespread

AI holds the potential to transform business in a radical way given its wide variety of use. Quite simply, business leaders need to understand AI in order to grasp the opportunities and threats the technologies pose.

While companies acknowledge the significant potential of broader, more advanced AI technologies such as computer vision, speech recognition and virtual agents, they are currently not in common use by companies in the Middle East and Africa (MEA). Companies surveyed are currently focused on narrower and more specific use-cases that support existing business. These efforts will undoubtedly help companies build capabilities that are necessary to deploy more advanced AI solutions in the future.

Companies are using a combination of on-premise and cloud solutions

Cloud based solutions are starting to gain prevalence in the region to support AI solutions with both storage and on-demand computing given its flexibility to swiftly scale up and down to accomdate changing demand, variable costs structures and access to larger datasets. Despite the advantages almost 43% of respondents utilise a combination of on-premise and cloud architectures, with executives acknowledging that cloud will inevitably grow more dominant over time.

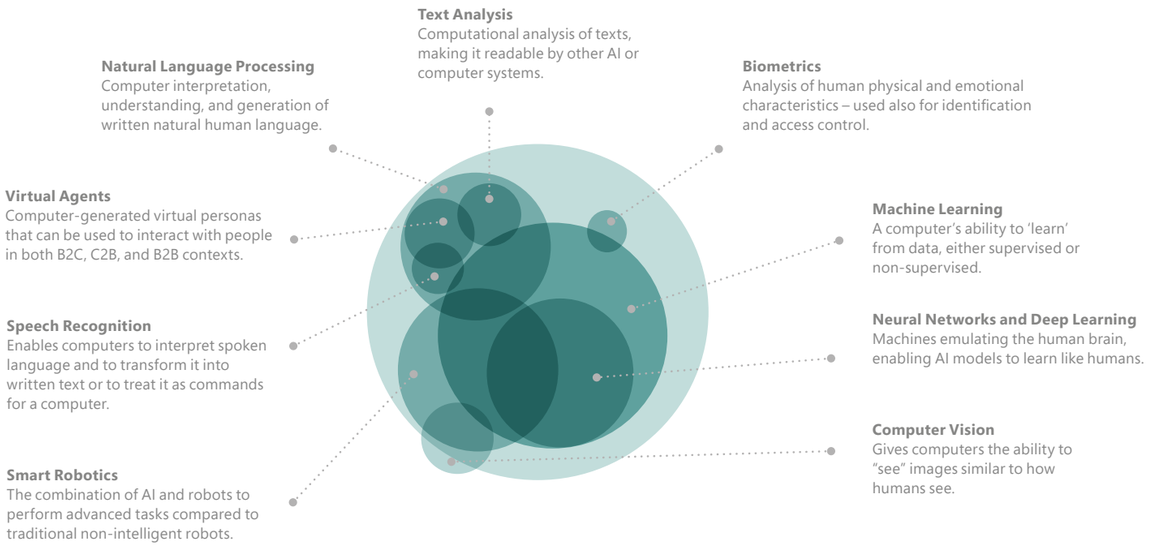
Machine learning

The most commonly used AI technology among the surveyed companies is machine learning. This is inarguably due to its wide-ranging applicability, making it relevant for a variety of use-cases across the value chain. Of the different types of machine learning, the most common is supervised machine learning, where software is fed structured data and finds patterns that can be used to understand and interpret new observations. While companies historically have primarily used internal data for supervised machine learning, most have now begun exploring the possibility of combining internal and external datasets in order to produce even deeper insights.

Machine learning was found to be the most useful. It is not clear from the study if this is because it is simply the most common starting point before deploying more advanced technologies, or if it also in the longer term holds the most wide and significant application potential

A broad definition of technologies are included in this AI definition

Technologies included in the definition of AI used in this study

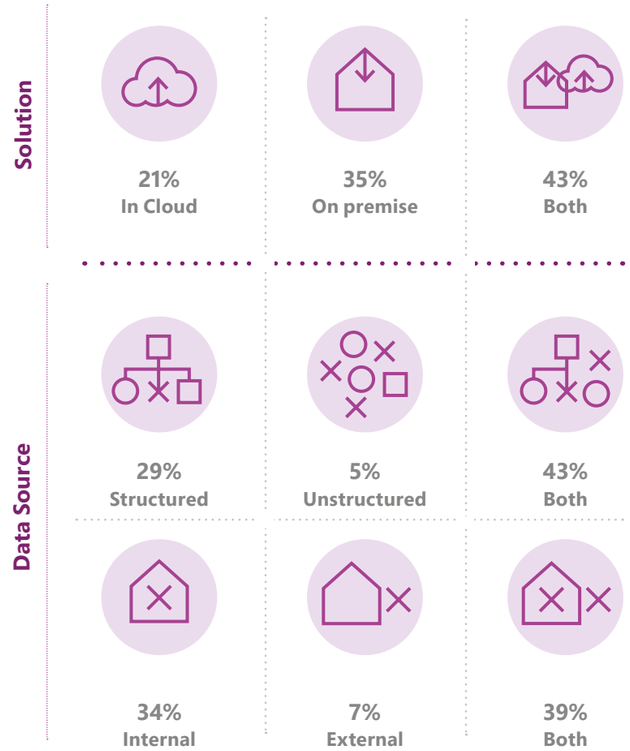


> **Most people believe in the technology but don't trust it enough to use it**
>
> **—ZAIN**

Companies are using a mix of Data Sources and Storage

Solution: How are you primarily dealing with the computing demands needed for AI?

Data Source: 1.Are you currently using unstructured or structured data types in your AI process? 2.Are you currently using internal or external data sources in your AI process?



Machine Learning leads the pack

Which of the following technologies have you found to be most useful in your company's deployment of AI?

Affirmative responses, Middle East and African markets

Note: Remaining percent 'Don't know' responses

Follow the Money

How much is invested in AI in the Middle East and Africa?

Relative spend on AI transactions across the region

Based on value of transactions from 2008-2018

Source: EY Embryonic
Data includes all transaction types including Mergers, Acquisitions, VC Funding Rounds, Angel/Seed Investments, JV/Alliances, Private Equity and Accelarator Funding.

Acquisition data for a selection of countries in the region gives an indication of where money is being invested in AI technologies. A very broad interpretation of AI was considered, since most countries in the region are in the very early stages of AI.

Growth trend in the past decade
There has been a steady growth trend in AI investment over the past 10 years, from a mere 2 transactions in 2008 to 171 transactions in 2018. Interestingly, the two early starters in 2008 were Saudi Arabia and Egypt, but they remained relatively quiet since with the exception of one large deal for Saudi Arabia in 2018. Not only has the quantum of transactions increased over the past decade, but the relative size of the deals has also been increasing over time.

Mergers and acquisitions account for most of the investment
The amount of funding coming from mergers and acquisitions ($3.9bn) and corporate investment ($1.1bn) makes up more than half of the total amount invested in AI in the region. Although angel investors and seed funding are involved in a significant number of transactions, the total value remains small by comparison, reflecting a cautious attitude to betting large amounts in the high-risk/high-return arena of AI start ups.

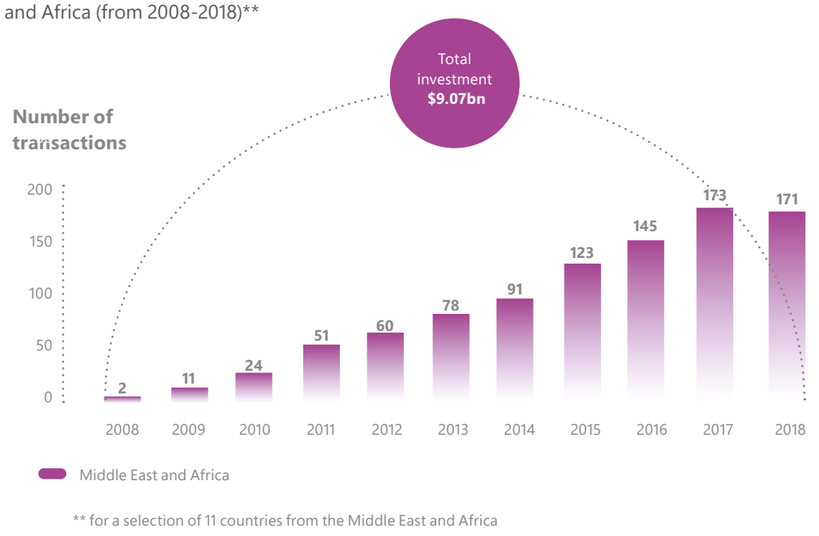
Investment activity greatest in Turkey, UAE and South Africa
The greatest amount of investment activity over the past 10 years is seen in Turkey, UAE and South Africa. The number of transactions in Turkey was 252 out of the total of 929 transactions, and it is also the leader in terms of the amount invested, being $3.4bn. The UAE invested strongly in 2016 and 2017, and whilst South Africa surged in 2011 and then showed a marked slow down in recent years, it remains a major player. Saudi Arabia is emerging strongly again in 2018, and Jordan, although behind others in the region, is positioning itself to capitalise on opportunities in the immediate future.

Social media followed by IoT the most popular AI investment
Social media transactions account for 44% of the number of transactions, with IoT in second place having 28% of transactions. However, the position is reversed when looking at the amount of investment, with IoT investment amounting to almost 60% of the total investment across the region, and social media investment amounting to only 36%. The balance of the investment amount is shared across the other AI formats with cyber security and smart mobile beginning to gain some real momentum.

Note: Several transactions in the dataset did not have publically disclosed deal values, suggesting that actual total values are higher than what's shown above

Steady increase in Middle East and African AI investment

AI companies invested into, transaction volume, selection of countries from the Middle East and Africa (from 2008-2018)**

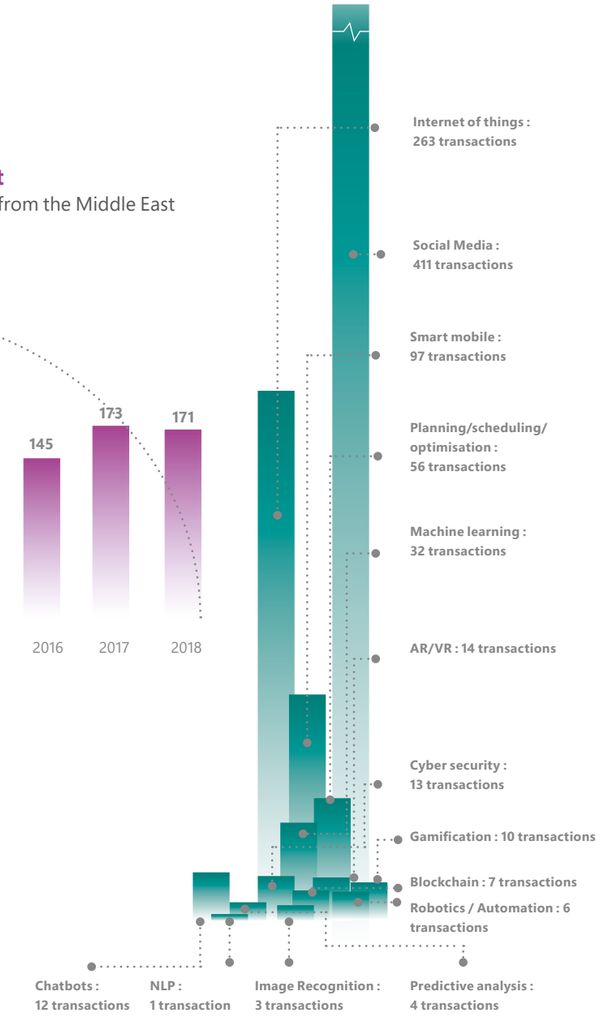


** for a selection of 11 countries from the Middle East and Africa

> **AI can't just be about reducing jobs, it's about making profit.**
>
> **— Adenium Energy Capital**

Social Media and IoT most popular

Based on number of transactions from 2008-2018



**Including governmental investment

Yapı Kredi Bankası

Best solutions among all AI applications come from customer-centered solutions. To better understand, we put ourselves in the customer's place and focus on AI at key touch-points. To illustrate, we have implemented an AI system SAFIR in 2014 that classifies free-formatted customer orders according to the type of transaction with an application based on Turkish natural language processing (NLP) and machine learning (ML). Last year, roughly 4 million transactions are completed without any human interaction. We are uplifting the project's both coverage and success ratios with deep learning.

Chatbot project is another example of our NLP capabilities which has lately published as a customer-service bot on WhatsApp in December 2018. This business platform helps most frequently asked questions of all customer and non-customer communications.

Artificial Intelligence practices have a profound impact on business processes, methods and operational efficiency in the banking sector. As Yapı Kredi Bank, we are developing innovative, high quality, customer-centered and value-added creative products and solutions to increase the application areas of these practices.

Another recent product, FOCA, is a data discovery and value creation project that aims to support both operational process of corporate/commercial/SME sales and financial analysis departments by digitalizing free format trial-balance (t-balance) documents in order to raise sales targets and automate financial analysis with a hybrid combination of NLP, ML and pattern recognition.

YapıKredi

Yapı Kredi was established as the first national private bank of Turkey in 1944. Delivering all its banking services with a customer-centered strategy, Yapı Kredi has a network including over 850 branches, more than 18.500 employees and 4.359 ATMs in addition to its rich content internet and mobile banking applications. Yapı Kredi is one of the 10 most valuable brands and as the end of 2018 the third largest private bank of Turkey.

What next?

We expect that retail/corporate finance applications working with artificial intelligence, intelligent consultancy (robo-advisory) applications in portfolio management will become prominent in 2020. We estimate that artificial intelligence will be introduced as persona-based analytical models known as, digital twins that offer pro-active recommendations to customers. Accordingly, we work on new features by expanding the scope of our projects like credit risk/underwriting evaluation, credit card fraud detection and by utilizing new technologies like deep learning, reinforcement learning.

At Yapı Kredi, we initiated in-house developed AI projects in 2013 in the areas of machine learning, Turkish natural language processing and data analytics. Our AI vision first focused on back Office digitalization and then evolved with advanced deep learning technics to improve success rates and apply on corporate/commercial/SME's credit risks/ sales/marketing processes

Expert Perspective

What does the future look like according to AI analysts?

We also spoke to a range of leading AI experts from business and academia to gain insights into the kind of change which we are on the cusp of, and the role AI is expected to play as part of a broader transformational wave.

AI is entering the mainstream and here to stay

One thing was clear from the experts we spoke to: as far as the peaks and troughs of hype and technological leaps surrounding AI go, there is no doubt that we are living through a particularly prominent peak, with no indication that the buzz nor the potential will fade away any time soon. In a world increasingly dominated, disrupted and driven by innovative tech powerhouses, large and small, it is no understatement to suggest that AI will be a chief protagonist in the change transcending all elements of business in what has been labelled the Fourth Industrial Revolution.

Business-minded people will drive the transformation

The AI experts confirmed some of the key ingredients necessary for AI in organizations: a combination of domain and technical expertise, the appropriate technology, the right talent, and lots and lots of data. While letting tech-savvy individuals drive innovation is great for building understanding, true transformation will not come until business people start suggesting problems for AI to solve - not the other way round.

Agile culture enables AI

Culture was a recurring theme as well. It can either stifle forward momentum in organizations, or be the silver bullet that enables the potential of AI to be realized from top to bottom. Some of the experts even argue that it's not only technical skills that hold up AI projects, it's also the need for a culture of experimentation. Companies that are more natively digital or have gone down that road understand the value of experimenting and iterating. They don't think in traditional terms of committing to year-long projects that need to produce specific outputs, but rather to explore and test ideas before scaling.

When it comes to AI, knowledge is power

Expert opinion also seemed unanimous in that most people not directly involved with AI must still have quite a basic understanding of what AI is and what it can actually do. Therefore, the task is to educate and improve understanding, from C-suite leadership teams to employees at the coal face.

This also ties in with the importance of partnering to get started and access the expertise needed to use AI. While partnering and collaborating solves the perennial AI challenge concerning the scarcity of talent, the significant cost and substantial benefit that can be gained from AI means that organizations also need to be cognizant of building capabilities in-house for the long-term.

Finally, as AI develops, we are also going to see innovation and expertise spreading outside of the dominant clusters of the likes of Silicon Valley, as governments, businesses and universities increasingly invest in building knowledge, resources and capabilities.

As the demand for AI will vary across different levels of work in the organisation, it is essential that we equip all our leaders to be comfortable to lead transitions to a more AI enabled workplace to ensure full value is realised.

— Sasol
Integrated chemicals and energy company

Key insights on the potential of AI*

*Global Leader's views from the field

The full extent of the AI story remains in its early stages. What we do know is that big data, computing power and connectivity are changing the industrial landscape. The opportunity rests in accelerating the digitization of businesses, making them more data driven by building applications that deliver machine-assisted insights.

— Mona Vernon, CTO, Thomson Reuters Labs

AI will eventually transform many enterprises and industries. But its pace of development has been affected by a lack of trust. Today, without mature risk awareness and the right frameworks and controls, applications of AI have not evolved much beyond proofs of concept and isolated solutions. Though proper implementation of AI into business models still faces a number of questions around trust, understanding and appreciating the risks will ultimately allow businesses to position themselves to capitalize on it the most.

— Nigel Duffy, Global AI Innovation Leader, EY

Think about the sheer computing power that is getting distributed, and how it is creating rich experiences through our lives. In our homes and cars, in our cities and at work, across every industry, from manufacturing to health care—all will be transformed by data, cloud and AI. That's the incredible opportunity in front of us.

— Harry Shum, Executive Vice President , AI & Research, Microsoft

If you have a ton of data, and your problem is one of classifying patterns (like speech recognition or object identification), AI may well be able to help. But let's be realistic, too: AI is still nowhere near as flexible and versatile as human beings; if you need a machine to read, or react dynamically, on the fly, to some kind of ever changing problem, the technology you seek may not yet exist. Intelligence is a really hard problem.

— Gary Marcus, Founder & CEO, Geometric Intelligence [acquired by Uber] professor, NYU, contributor to The New Yorker and The New York Times

AI is a general purpose technology, so will eventually affect all industries. However, this impact can be slowed by the lack of data in particular industries. There's also more innovative cultures inside different organizations, that can either drive adoption or prevent it.

— Marc Warner, CEO, ASI Data Science

Role of AI in Middle East and African Business

There is a lot of hype surrounding AI at the moment, and few doubt its potential. We examine how important AI is compared to other digital priorities and where AI fits on the strategic agenda.

We look at the impact of AI on the company's core business, as well as on adjacent and new areas of business.

We also examine the current AI maturity levels across sectors and markets, the potential drivers for deploying AI, and where AI is applied within organizations, across customer-facing functions, operations, product development, and internal business support.

A Strategic Agenda

Where is the AI conversation currently taking place?

To understand the future of AI initiatives in the region, it is imperative to see where the AI discussions are currently taking place, as a reflection of the strategic importance and the knowledge levels within organizations.

AI getting much attention at top management level

Across the region, 80% of surveyed companies have AI as an important topic up at C-suite level, regardless of their degree of AI maturity. CEO's are driving the AI agenda across the organization, CFO's are looking for cost savings, Operations executives want efficiencies and CIO's want to include AI in the work they are doing.

Interest also gaining ground at the lower levels

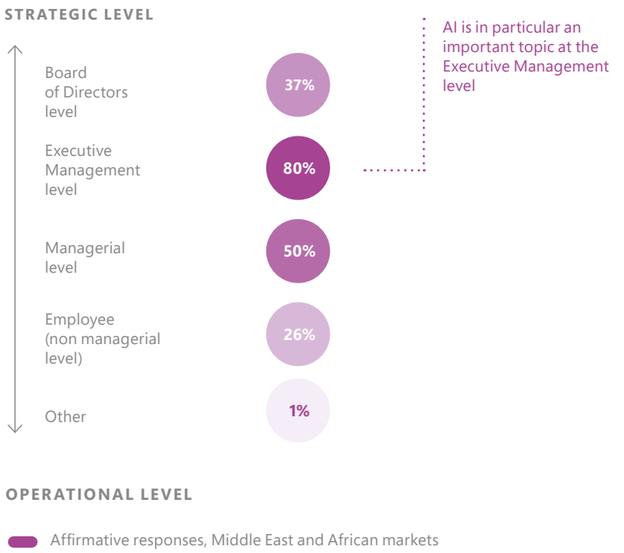
Half of the companies also include other managerial levels, where the implementation actually takes place, and who are important for bringing together the strategy from top management to the workforce who will be most involved with AI. The non-managerial levels are actively involved in only 26% of companies, where experimentation and pilot projects are happening.

Board interest a bit more muted

AI conversations are not yet mainstream at Board of Directors level in the surveyed companies, with only 37% taking an interest at this stage and those mainly in the more mature companies. Given the levels of C-suite involvement, this is sure to spread upwards in the next few years.

AI is an important topic on the C-suite level in particular

On what hierarchical levels in your company is AI an important topic?



We don't just want to do something because of the cool tech, we want to see business benefits, and if we do it just because of the tech it may actually disrupt our business model.

— BCX

Among Friends

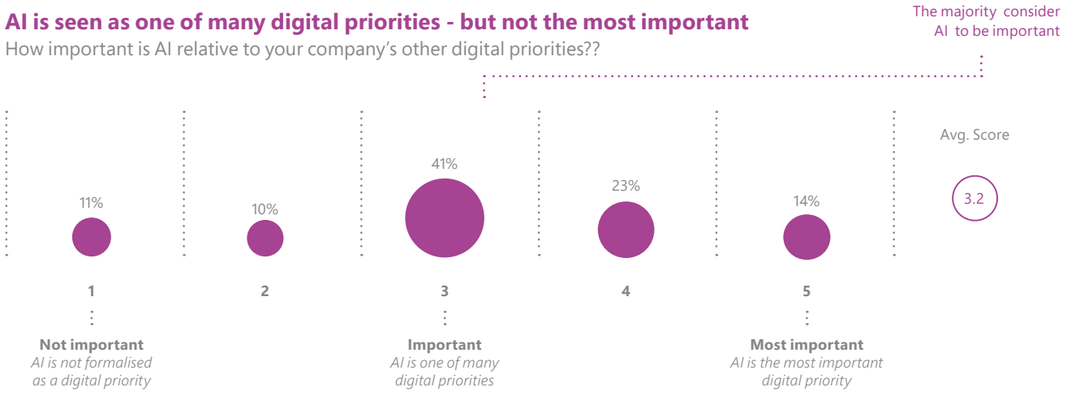
What is the importance of AI against other digital priorities?

Despite AI being in the early journey stages in this region, it has managed to anchor itself to other digital initiatives as a peer or higher, with a significant 78% of respondents. This reflects the understanding that the future will be heavily influenced by AI and that it will become a major domain for differentiation between competitors in all sectors.

Sector differences
The importance of AI alongside it's digital peers also differs across the sectors. Retail, Professional Services and Financial Services are the standout sectors where AI is important, although the other sectors also had individual companies who regard AI as strategically important. Overall, the Health sector ranked AI importance by far the lowest, with an average score of only 2.5 compared to Retail's 3.5

Discussion rich, funding poor
The generally high prioritization of AI when compared to other digital initiatives is very promising, however the proportionate amount of direct funding that AI is attracting vs other digital initiatives pales in comparison. Many executives highlight that the bulk of the current digital spend is going to foundational activities such as creating an open data architecture for quality data, upgrading and future-proofing the infrastructure, digitizing operations and fostering an agile culture. These create a solid platform for AI technologies to rest upon and will enable sustainable AI solutions to progress from pilots to scaled production, but direct funding will have to increase if the potential benefits from AI are to be realized.

AI is seen as one of many digital priorities - but not the most important
How important is AI relative to your company's other digital priorities??



15 Middle East and African markets

Note: Remaining percent 'Don't know' responses

Digital transformation is no longer a project, but a lifestyle for you and workstyle for your company.

— Teknosa İç ve Dış Ticaret A.Ş.

Push or Pull

How is AI predominantly deployed into the organizations?

There is a tendency for AI initiatives to originate from within IT environments where the technical skills and interest are most prevalent, so it is interesting to hear from the surveyed companies about how they are going about implementing their AI initiatives.

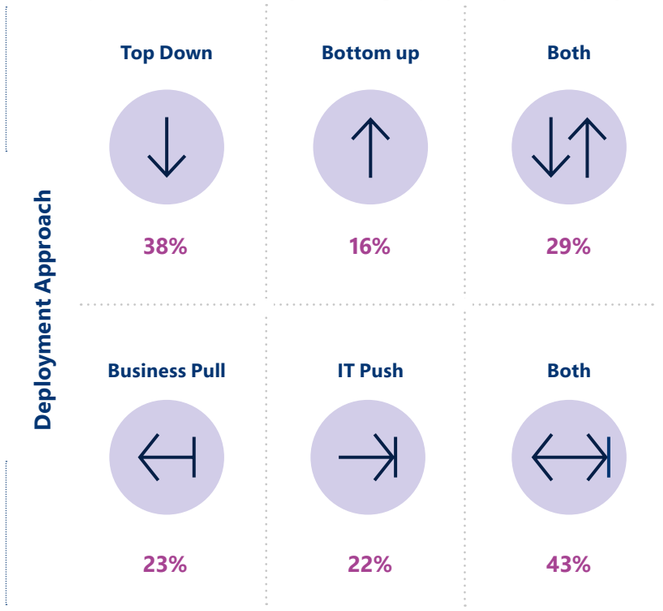
Top down the preferred driver for implementing AI
By far the majority of companies indicate that their AI initiatives are being driven top down, with many also using a combination of top down and bottom up. Only 16% currently favour a bottom up approach, and these are likely to be the less mature organizations where the groundswell of interest lies with younger employees who are eager to experiment and create proofs of concept to illustrate their ideas. Certainly the bulk of the more mature companies have structured themselves to be able to quickly and effectively take advantage of the new technologies to improve their business and gain market share, by means of specialized AI teams or units.

Hybrid of technology push and business pull favoured
It is very clear, as indicated by 43% of companies, that the hybrid approach of technology push and business pull is most favoured for deployment of AI in the surveyed organizations. This entails cross-functional teams of business users with the requirements, and IT specialists with the technical expertise, collaborating to identify and deploy use cases that add value to the business.

We need to teach how AI can be applied, not just the abstract technical skills.

— University of Jordan

AI deployed and managed in a balanced way
How would you characterize the way AI is being managed in your company? How would you characterize the way AI is being deployed in your company?



Middle East and African markets

Note: Remaining percent 'Don't know' responses

Ready, Set...

What is the maturity of AI in different sectors?

The shift to becoming AI enabled is a continuous journey with some organisations further along the path than others. The vast majority of organisations surveyed have not progressed beyond the early pilot stages as they grapple with early adoption issues. However, a few organisations are definite leaders in their respective sectors, being beyond the early formative stages and already accelerating in the released stage of maturity. And then there are those organizations who consider themselves to be advanced, in that they are already applying AI technologies in the running of their business.

Experimenting with technology, but need use cases

The more technically-oriented companies have no shortage of interested staff members who are experimenting with the AI technologies and running pilots. Despite this, almost all the companies in the study indicated that they have difficulty in identifying use cases to support the business and provide a meaningful return on investment to attract more funding. Those companies who are more structured in their approach are taking a strategic view of how AI can give them a competitive advantage, and are directing AI initiatives in these areas with more success.

Some machine learning models in production

ICT&Media and Financial Services are the standout sectors where some companies have gone beyond experimentation, with machine learning models running in a production environment, but these are in narrow channels within the companies and not systemically at scale. Across all sectors the number of machine learning models directly corresponds to those companies with high volumes of well managed data, strong foundational infrastructure and where AI takes its place alongside their other top digital priorities.

Trends across the other sectors

In the Retail and Consumer Products sector, the majority of companies stated they don't have the same ability to leverage data as the information technology orientated sectors, and are still trying to break out of the planning and piloting stage, due to complex legacy IT and a shortage of relevant skills. There is a general intention, with a few exceptions, across the Infrastructure & Transport and Manufacturing & Resources sectors to be behind the bleeding edge of AI and therefore look towards leveraging AI solutions from other sectors as 'tested solutions', or buying them off-the-shelf as they mature. These sectors also have large workforces with the majority in the low to unskilled category, and cite the need to handle change management and worker reluctance towards AI before they invest more heavily. The Health and Professional Services sectors are generally being held back by inadequate data on which to base their AI efforts, and are thus mostly in the planning phase.

Everyone is in the race, but the pace differs

Regardless of sector, there are a few companies that are leading, a handful that are bringing up the rear, and the vast majority that are in the Planning or Piloting stages somewhere in the middle.

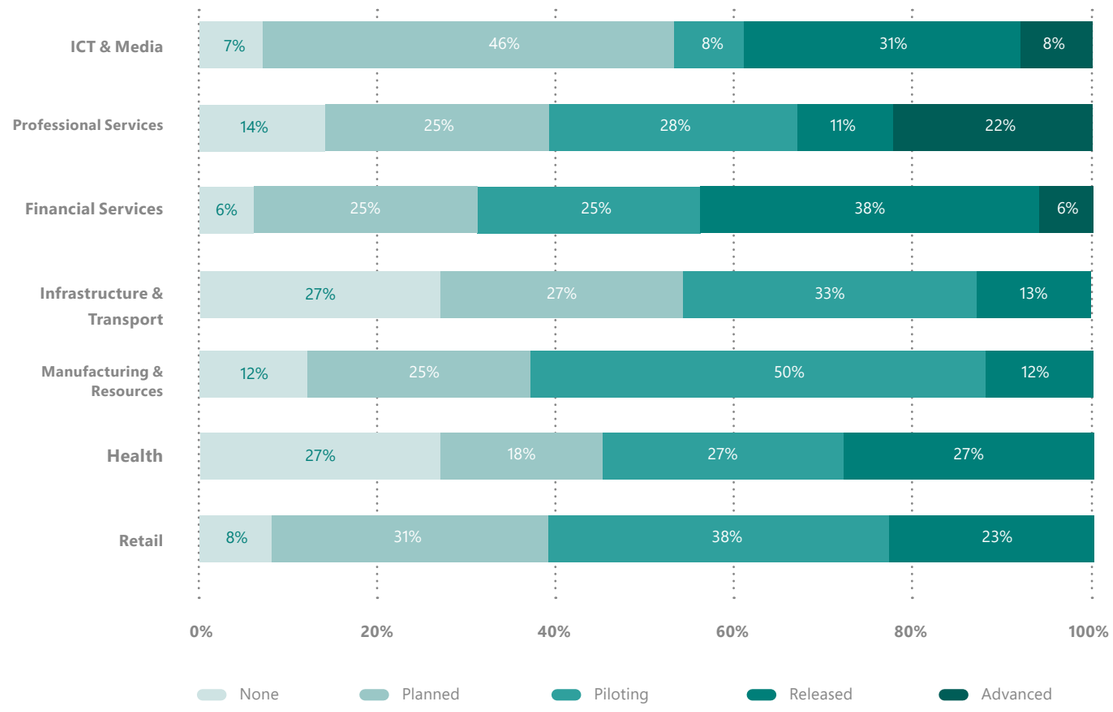
Financial Services have progressed the most as a collective sector with 38% of respondents in the Released stage, and productionized AI use cases in their daily operations. This sector's run to the front has been fueled by fierce market competition, accelerated starts to AI programs and generally stronger foundations in data management and technology adoption.

Historically more conservative sectors such as Retail, Manufacturing & Resourcing as well as Infrastructure & Transport are yet to move to the next level, with the numerous pilots still underway reflecting their slower technology adoption lead times.

Surprisingly, given their data-rich and customer-centric environment, the ICT & Media sector still has 46% of the respondents in the Planned stage and working hard to close the gap on the sector leaders.

Most companies in Middle East and Africa still in Planning or Piloting stage

How would you describe your company's general AI maturity?



Technology tends to go through 'hype cycles', so even if you are a latecomer to AI you have the ability to choose more established and proven solutions and can leapfrog others and fast track your initiatives.

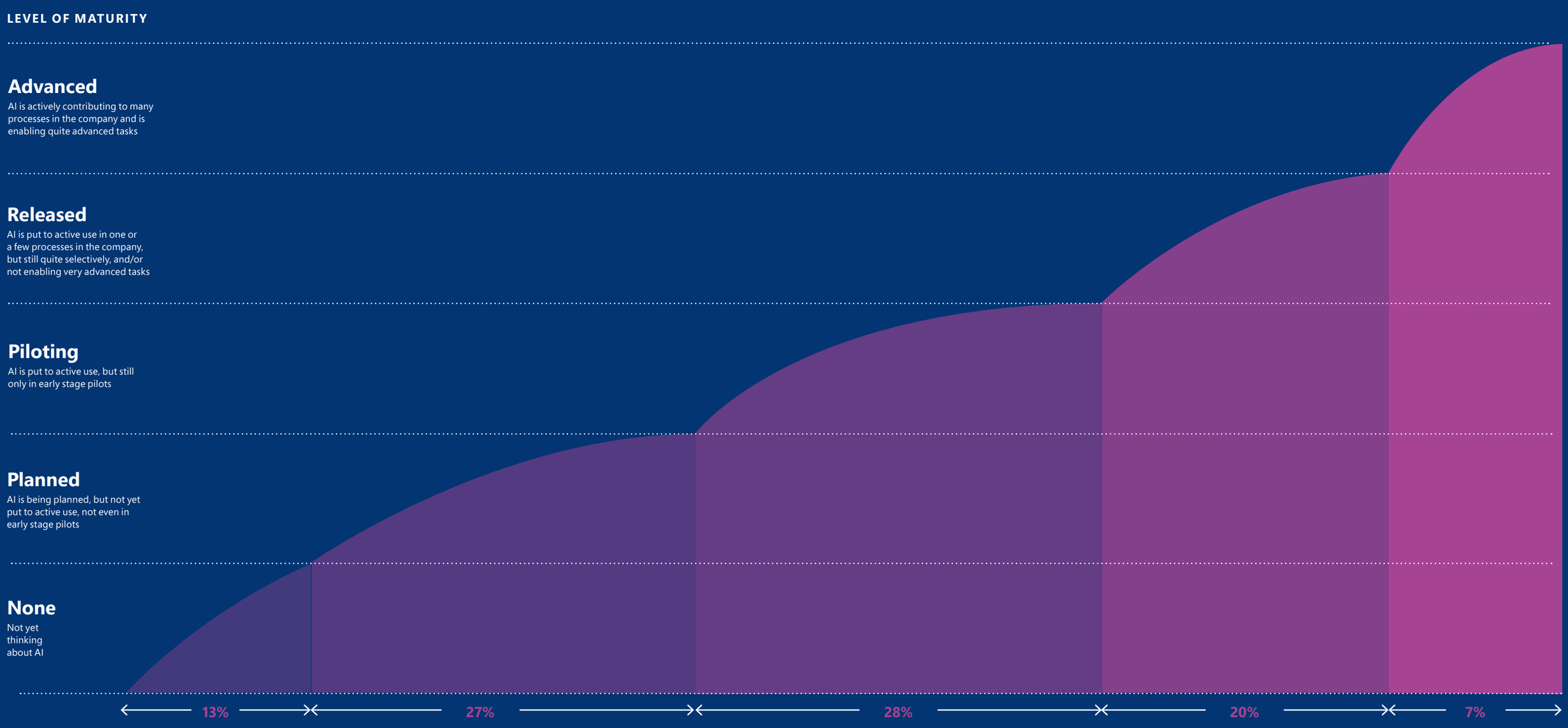
— Multichoice Group

Role of Ai in Middle East and African Business

AI Maturity Curve

Majority of companies are in the ‘Piloting’ or ‘Released’ stage

We asked companies to self-report their current AI maturity level, grading themselves at None, Planned, Piloting, Released, or Advanced - as defined below.



Middle East and African markets

Note: “Did not know” responses are excluded from graphic above

State your Business

Where is AI currently deployed across the companies' value chains?

Across various countries and sectors there was a notable variance in the different levels of AI maturity, however there was a uncanny consistency in the reported business functions where AI is being used.

Lots of AI in R&D and IT/Digital functions

IT and Digital functions are by far the most prevalent domain - IT resources are directly in contact with many emerging technologies and organizations naturally expect them to explore and investigate these. Many early pilots are done on IT process itself as part of testing new technologies, but also focusing on core requirements such as Cyber Risk Management. On top of an expected high prevalence of AI within IT departments, AI is also commonly used within R&D functions (or similarly focused functions). This primarily comes down to three factors: employees in R&D are often engineers who tend to have a good understanding and appreciation of AI; the R&D function is often already wired towards taking an experimental, agile approach which is key to AI; and the R&D function often sits on significant amounts of useful data leading to high potential use-cases.

Customer interactions generating front-end data

Customer-facing, commercial functions such as Marketing, Sales and Customer Service are also heavier users of AI, partly driven by their digitization levels. Call-centres attract new technologies such as chatbots and robo-advisors to deal with first line customer requests as well as using smart automation to deal with outcome activities post a client interaction, leaving operators free to engage the next customer. Although AI is generally adopted more slowly in direct customer-facing interactions than in back-end functions, due to heightened caution in avoiding any negative customer experience, the abundance of data from increased use of online channels is expected to make these functions obvious candidates for AI technologies in the future.

Operations the battleground for efficiencies

With many markets trading in tough economic conditions, executives are under pressure to increase productivity and efficiencies in all operational areas - in companies carrying large working capital balances even a small percentage change can yield material monetary rewards. Mining and Manufacturing see AI applications in supply chain optimization, managing equipment and asset environments in a more predictive manner and strengthening the Health and Safety frameworks. In the non-industrial environment, AI is unlocking deeper insights and enhanced decision-making in the back and middle office environments, including early traction in procurement and vendor management. Whilst in financial services, regulatory compliance and risk management are early focus points for machine learning and smart robotics.

Limited use in Group functions

There are several 'Group functions' where AI is hardly in use among the participating companies including strategy, general administration and finance. Furthermore certain 'people-intensive' functions such as HR and Shared Services are also showing limited take-up. This is not due to lack of potentially valuable AI use-cases, which in the case of HR for example includes talent acquisition (avoiding human bias), onboarding (Q&A), performance evaluation (analyzing data), etc. but rather seems to be the result of prioritizing other functions and priorities first.

"With the extremely high internet penetration the region has we need to use AI just to keep up with customer expectations

— Total Marketing Middle East

"We shouldn't just be enabling the existing processes, AI can allow us to re-engineer them.

— Hikma Pharmaceuticals

AI most commonly applied in IT & R&D functions

Which of your company's business functions currently use AI?

Affirmative responses, Middle East and African markets

MTN Group

MTN Group have a keen interest in innovation to extend their relevance in the ICT sector. Innovation should be initiated by business, and implemented by means of technical innovation, like the use of AI technologies. To intercept innovation that is happening throughout the organisation at the right time is difficult, too early and it stifles innovation, too late and it may already have been operationalised.

The organisation believes that AI technology has the potential to augment the way they interact with customers, and are therefore focused on voice recognition technology, chatbots and RPA at this stage, rather than on machine learning. They would like to improve their zero touch activation percentage through the use of RPA technology, and at the same time create an enhanced customer experience. Chatbots and voice-related technology done wrongly can have a very negative impact on customers, so they are treading very carefully in this space. You could become disassociated from your customers by not doing something they expect, or by doing it wrongly.

In a call centre that receives millions of calls per day, even a small percentage improvement through the judicious use of AI technologies can make a huge difference in terms of costs.

MTN in Uganda has initiated a Proof of Concept with voice biometric software to handle PIN resets and reduce call centre costs. The enrolment will entail speaking several sets of digit strings, and the verification phrase will consist of a system generated random number rather than a fixed passphrase, as random numbers are less susceptible to recorded playback attacks compared to fixed passphrases.

MTN Group is committed to inspiring and enabling growth by leading the charge towards a bold, new digital world. Launched in South Africa at the dawn od democracy in 1994, they offer voice, data and digital services (including mobile financial services) to retail customers in the 21 countries, across Africa and the Middle East, in which their operations have telecoms licenses. They also offer enterprise solutions to corporate and public sector customers in a total of 23 countries. The brand is among the most admired and most valuable in Africa.

A personal approach is extremely important to our business. In the next phase we will take our 24/7 customer experience to the next level through the application of AI enabled chatbots to handle our high-volume journeys, whilst still maintaining speed and a personal approach.

What next?

MTN wants to optimise the business use of AI technology to do the right thing at the right time for the organisation. In the discovery and adoption phase they are going to need good business architects to conceptualise how to get value from AI. It will initially be less about the technology itself, but as it becomes more mainstream they will need stronger technical skills in-house. They plan to use start-ups to stay ahead of the game, as with new technologies you can't take the risk internally, even if you are a big company.

It may not be top of mind with customers today, but it will happen, and if you don't have a bot you will become a dinosaur.

Business Benefits and Risks

As a number of industries are beginning to reap the benefits of AI, we investigate what AI is actually doing for businesses today and what is expected in the future. We look at how big an impact executives expect AI will have in terms of driving growth or causing disruption in their industry, and examine AI's basic and more advanced uses - highlighting examples of these functionalities in operational mode.

We also present a strategic approach to understanding AI's four benefit domains from a business perspective, summarizing the value executives expect to generate by using AI, and touching on what business leaders see as the most prevalent business risks.

Another World

What is the expected impact from AI within the next 5 years?

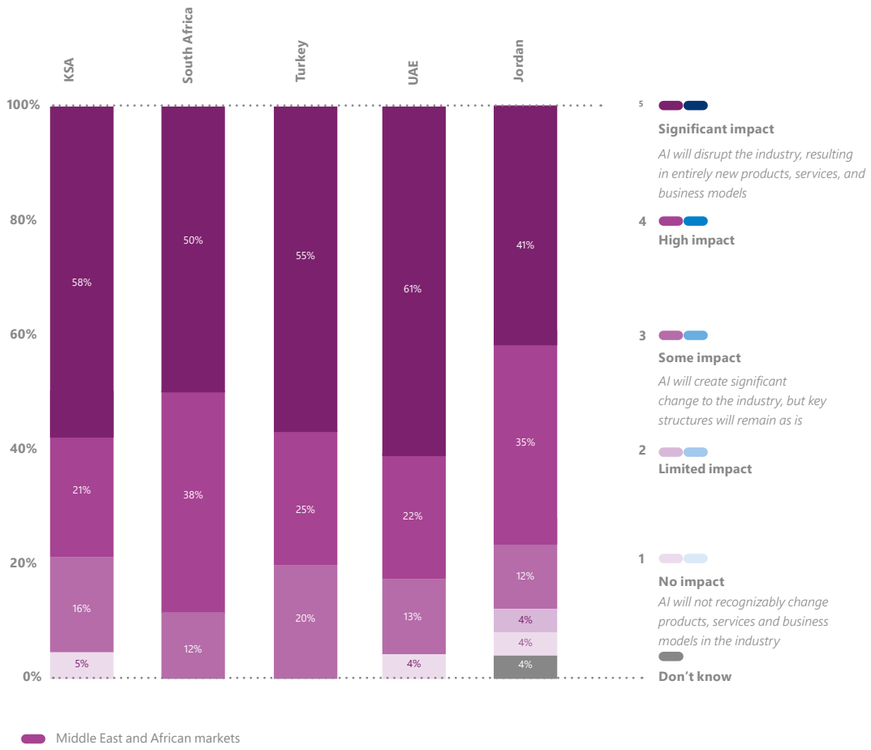
The executives interviewed in the study were all very positive about the strides that will be made by AI within the next 5 years, with the transformational impact being felt from as early as 3 years out. Three quarters of all the respondents are expecting AI to have a significant or high impact on their industry, either through major transformation of existing processes and restructured value chains, or the systemic disruption of the underlying method of doing business altogether and the concomitant shifts in the competitive landscape.

Strongholds and premiums to change as AI gains ground
Many companies expect the competition to intensify due to the winner takes all dynamic often associated with the massive scale that AI and digital can create. Impact on products will be profound, especially in the form of new services, where the speed of developing and taking to market highly customized products will decrease drastically - making current strongholds less certain in the future and challenging companies to be the disruptor without being disrupted themselves.

Disruptive AI in customer-centric sectors
ICT & Media and Financial Services scored the highest (77% and 62% respectively) where they are expecting a change in the fundamentals of how they do business, completely redefining customer interaction models and creating alternative revenue streams. This is also seen as the area where the impact will be felt first, as consumer trends have already started to change and are creating the impetus for a reimagined way of doing business to meet these changing demands.

High expected impact from AI consistently across countries

How much impact do you expect AI will have on your industry within the next 5 years?

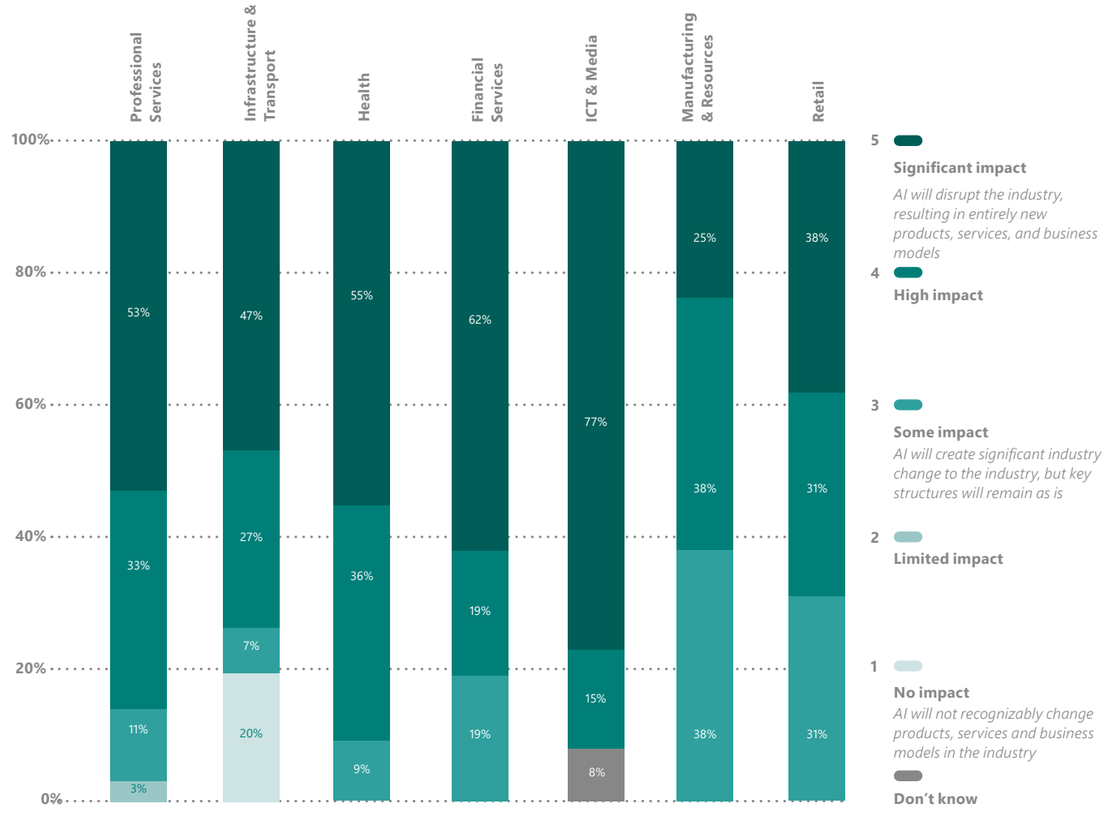


Enhancement of the status quo
In the more process-centric sectors like Retail and Manufacturing & Resources, expectations are for improved efficiencies, increased productivity and enhanced health and safety records. Significant shifts in cost of production, accelerated and refined supply chains and a more enabled and effective workforce will result from AI and digital solutions. This new way of working will create connected macro-level value chains that will necessitate all parties collaborating and integrating, with the added benefit of rolling AI out to organizations who may have needed a stronger 'nudge' to bring them into the 21st century.

> **We would want AI to result in something completely new, a massive paradigm shift rather than an evolution.**
>
> **— Bigen Group**

ICT & Media the sector with the highest expected impact from AI across the region

How much impact do you expect AI will have on your industry within the next 5 years?

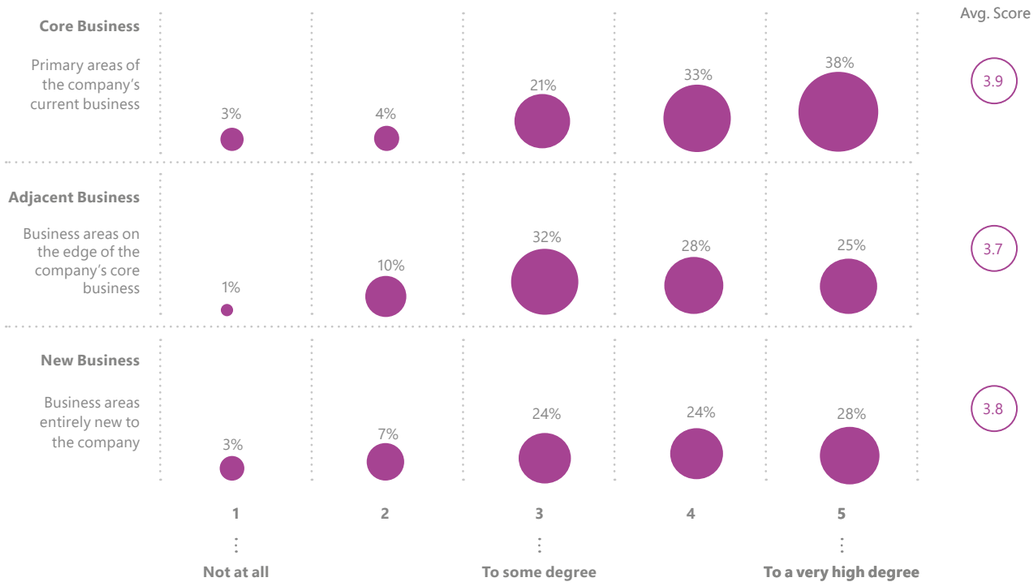


AI Here, There, Everywhere

What is the proximity of AI's future impact to core business?

Companies expect impact across all horizons

To what degree do you expect AI will create impact for your company within each of the following areas?



Note: Remaining percent 'Don't know' responses

Many of the participating companies are expansive, with diversfied business units offering a range of products and services. We questioned where they expect AI to have an impact - in their core, adjacent and/or new businesses.

Certainty about impact on core business

The average rating for a high impact to core business was 4 out of 5, which is one of the most significant indicators resulting from this study. Most companies expect that AI will optimize their operations, result in efficiences and cost savings, and provide a superior customer experience, all of which are central to their current business. Much of this is already being achieved at some scale within the more digitally mature sectors and this is expected to expand substantially across sectors in the next few years.

The "art of the possible" with AI

New and exciting opportunities are being explored as a result of experimenting with the AI technologies and learning from pilot projects, and executives in the study are very optimistic about the possibilities that AI will deliver for them. This is expected to take the form of unlocking completely new revenue streams as new products are spun off their core offerings and they are able to increase profits through taking ownership of a larger part of the sector value chains and redefine them with integrated AI and digital technologies . There is the expectation that the business world as we know it will be unrecognizable in the space of the next few years.

Etihad Airways

Like most airlines, Etihad has been using artificial intelligence of some type for a long time - for example in flight path routing, however there are differences across the business in maturity and deployment.

Etihad is undertaking a significant investment in AI and see it as one of the most important aspects of digital transformation. Their key focus is on on the use case and benefits and they are driving the conversation across all levels of the business.

Most of the initial focus has been on the front office as it is easier ground to start on due to the marketing teams already being relatively mature in their understanding of automated insights and actions and willingness to adopt new technologies.

Most of the initial focus has been on the front office.

The most important requirement for implementing artificial intelligence at the airline has definitely been people, they need to be willing, interested and educated. A major challenge with AI generally across all companies is that while everyone is using the buzz words no one really know what it is or how to apply it to what they do. To solve this Etihad are launching an Artificial Intelligence Academy to deliver grass root training to everyone at the airline. Once employees understand what AI can do, are aware of tangible examples, realise how it can enable their day to day activities and understand that it is not just a scary black box that will replace them, they become much more proactively engaged in the change programme, not only just supporting it but also proactively suggesting use case opportunities to be implemented.

Etihad Airways was established by Royal (Emiri) Decree in July 2003 and is wholly owned by the Government of Abu Dhabi with a mandate to operate safely, commercially and profitably. Etihad's guests are at the heart of everything it does. The airline has a network of over 110 passenger and cargo destinations across six continents, with a young and environmentally friendly fleet of more than 120 aircraft.

What next?

Etihad is continuing to expand the use of artificial intelligence throughout the core business to drive insights, automate processes and enable employees, across customer engagement, operations and business efficiency. The AI Academy employee education programme and the continued drive for better quality data are seen as pivotal to its future success. Artificial intelligence is only going to become a greater business requirement in the future as guest expectations continue to increase, datasets become bigger and more complex and competition increases.

"We need everyone at the airline to be AI literate.

"The machine learning algorithms is often the easy part - implementing it on live systems with the required people, process and system changes is the difficult one.

Use It or Lose It

How is AI put to use in companies today?

AI enables a wide range of uses, broadly split into personalizing, automating, predicting, prescribing and generating insight. We asked companies how relevant each was to their business and found some interesting perspectives in what executives expect to use AI technologies for.

Prediction leads the way

Most companies are already using some form of predictive analysis, whether to predict customer behaviour in the form of churn or spending patterns, or to do pro-active maintenance on their machinery. It is also playing a role in improving health and safety methods in the Manufacturing & Resources and Infrastructure & Transport sectors, where this topic sits high up the operational and strategic agenda of senior management.

Automation gaining ground

Smart automation is a popular starting point for companies who are embarking on the AI journey, given the relative ease of implementation and low investment barriers. Where there is abundant good quality data, like in Finance and Supply Chain environments, automation can remove repetitive tasks and improve employee efficiency. In the customer arena the use of chatbots and robo-advisors to engage with customers is gaining ground, as customer enagagement is being reimagined and cost-to-serve ratios are dropping.

Generating insights for decision-making

Data, algorithms and machine learning go hand-in-hand to produce insights that would not be apparent through the usual channels like Business Intelligence reporting. This use of AI is starting to become more popular, and is providing businesses with deeper insights across a diaspora of datasets to aid in improved and accelerated decision-making.

Personalization the key to customer experience

Particularly in the Retail, Banking and Telecommunications lines of business, improved customer experience is the desired outcome from the application of AI technologies. Through the use of chatbots/personal assistants in call centres, and tailoring content for individual interactions as they drive mass personalization, these businesses are hoping to gain insights into the mind and heart of the customer, so that they can offer tailored products and services.

Prescription still on the horizon

Although not currently in use by many companies, prescription to aid decision-making through the use of suggestion engines and decision recommenders, as well as guiding employees to salient insight points that are key to determining an optimal outcome, will have huge benefits in the future. Those companies who are experimenting with this form of AI are doing so in a cautious manner, and are carefully reviewing any outputs from the algorithms, and then using them as partial inputs to a decision. This form of AI requires the most trust to be placed in the technology, and is therefore going to have the slowest uptake.

Prediction and automation relevant to most companies

What are the relevant uses of AI in your company?

We estimate that artificial intelligence will be introduced as persona-based analytical models known as digital twins that offer pro-active recommendations to customers.

— Yapı Kredi

Predict

Anticipate events and outcomes

We have been using AI mainly for automation to maximize efficiency and increase accuracy, and currently are working to use AI for predicting demand and consumers' buying behaviour.

— Nader Group

Automate

Handle tasks without human intervention

Efficiency gains from automation will give us a way to compete with the low cost manufacturers and imports on price.

— Nampak

Insights

Identify and understand patterns and trends

AI is a fundamental requirement to enable and deliver SMART services.

— Hashemite University

Personalize

Tailor content and user-experience

If you do a deployment of a bot across the customer base, a segment will hate it, a segment will say how did I live without it, and a segment will say why did it take so long?

— MTN

Prescribe

Suggest solutions to defined problems

We'll always need the human interface to provide checks and balances.

— dnata

Making AI Simple

What is a good framework to map the potential benefits from AI?

The contributing companies generally expect to benefit in all four key domains as outlined in Microsoft's Digital Transformation framework: optimizing operations; engaging customers; transforming products and services; and enabling employees. Each domain draws on underlying AI functionalities – 'reasoning' through learning and forming conclusions with imperfect data; 'understanding' through interpreting the meaning of data including text, voice, and images; and 'interacting' with employees, customers and other stakeholders in natural ways.

Applying AI to these domains can be transformational to a business, ultimately changing the landscape of the business itself and the industries and eco-systems in which it operates.

Let's look in more detail at what that entails.

Artificial Intelligence impacts business in four benefit domains

Companies must consider how they approach the benefit domains in their AI strategy formulation

Engage your customers
E.g., provide customers advice, shorten conversion cycles, and reduce time to resolution

Transform your products & services
E.g., speed up product innovation cycles, enable new value add services, and provide real time support

Enable employees
E.g., increase employee efficiency through predictions, enabled support, and automation of repetitive tasks

Optimize your operations
E.g., improve planning and reduce costs through intelligent prediction, operational efficiency, and deep insights, predictive maintenance

Improved production and efficiency through optimized operations
While digital transformation in general is based on customer engagement, optimizing operations is what companies first look to when putting AI to use. It draws on multiple levers such as:
* intelligent prediction, e.g., identifying chronic diseases, anticipating non-performing products, or adaptive modelling to flag corrective actions;
* operational efficiency, e.g., optimizing forecasting and order-to-fulfilment flows across the value chain, or processing huge sets of documents in a fraction of the time;
* deep insights, e.g., detecting anomalies to surface irregularities such as fraud, or identifying new pockets of opportunity before competitors do.

Engaging customers more effectively through AI
After optimized operations, companies look to customer engagement as the domain in which to seek most business benefits. Early examples of AI applications in the customer engagement space involve levers such as: conversational agents, e.g., bots providing personal recommendations and transactional advice; personal assistants, e.g., guiding decision-making, shortening conversion cycles; self-service, e.g., options to help customers reduce time to resolution.

Staying ahead of the competition by transforming products and services
Transforming products and services, and enabling employees, came out on the same level, slightly below the two other domains when it comes to where companies expect to generate future business benefits. Transforming products and services, ultimately giving rise to entirely new business models, is mostly favored in R&D-heavy sectors where companies consider AI and advanced analytics as levers to speed up the product innovation and discovery process. In B2C-oriented sectors, AI enables provision of new services via multilingual cognitive tools, geo-location suites, sentiment analysis, cognitive robotic advisory capabilities, personalized service agents and more, to transcend the sectors to a new level of value-add -with significantly increased scale and reach in real time.

Enabling employees to be more efficient and capable
Across sectors, numerous AI use-cases focus on increasing employee productivity or serve to enhance the human ingenuity and the ability to fulfil a given function. AI helps employees in B2C companies expand organizational knowledge by analyzing vast customer behavior datasets in order to adapt online and offline store layouts, driving conversion and sales. Customer personalization is used at scale, powered by AI solutions that reveal real-time customer insights, identifying the best next actions for up-sell and cross-sell opportunities, as well as predictive models that obtain a 360-degree view of the customer by integrating customer data and sentiment to generate targeted offers.

"Our duty as a tourism agency is to reduce the time spent by the consumer for vacation organization and to develop a suggested plan.

— Setur

"AI will enable us to change business models – it makes no sense to just digitize the paper processes.

— WSP

Where Value Hides

What benefits do business leaders particularly expect from AI?

Respondents were asked to assess the potential for AI across the four benefit domains.

Optimizing operations is quickest time to value
89% of the regional respondents identified optimization of operations as the top area where they expect AI to deliver financial benefits in the near term, as the time-to-value is generally faster in this domain and AI's impact is more directly on measurable metrics. This drive for value realisation is underpinned by the need to show return on AI investments very quickly, to create momentum and justify further investment whilst maintaining operational performance. Core operations have the most to gain with extensive use of smart robotics and machine learning to drive supply chain optimization, lean manufacturing and waste reduction, predictive maintenance and regulatory compliance, to name but a few.

Changing markets need changing products
As consumer trends and demands change rapidly, companies face challenges in being able to create or transform products and services that are tailored to current needs in this winner-takes-all game. Executives see significant value in using complex algorithms and unsupervised machine learning to assist in analysing the diverse data sets to create high margin services for product portfolios, as well as smart robotics and advanced analytics that expedite new product development.

Customers are gold
As companies compete for customers and their share of wallet, various AI technologies are enabling a differentiated manner of engaging with customers and enhancing the experience. The ability to tailor content dynamically to the consumer, anticipating needs, accelerating response times, increasing velocity of customer fulfilment and delivering highly digitised experiences through virtual and augmented reality techniques are raising the top line of the early pioneers.

Incremental gains in empowering employees
Although there are notable benefits to be gained through enabling employees to increase personal productivity, support decision making and increase the effectiveness of the workforce, executives believe these gains would be more incremental in nature and will grow organically over time.

> **We must not lose "boots on the ground", AI should support not replace them.**
>
> **— Amman Municipality**

Most companies expect to generate benefit from optimizing operations
What business benefit do you expect AI to generate?

Bridgestone

Bridgestone has just completed a business turnaround, and the priority is shifting to reducing cost and improving efficiency across the value chains. AI will play a key role, focusing initially on extracting internal efficiencies to remain competitive in a market under continued pressure from inbound competitors. This will require them to be flexible and nimble in reacting to shifts in consumer demand and to look creatively at driving process efficiencies without detracting from quality and process integrity.

Expanding the workforce or mass system upgrades is not the preferred approach, but rather a focus on identifying key points in the value chain where differential value can be unlocked through the selective and creative use of digital technologies (including AI).

> **The competitive advantage is in the sales and marketing space, starting with the customer, and AI will flow back into the manufacturing area, where it is much easier to apply.**

On the production front the driving force is flexibility and responsiveness, and they are applying AI techniques as applicable to increase process velocity in a cost-effective manner. In the back office the use of low-risk tools like heuristic modelling for sales order processing, sales forecasting and demand forecasting has shown notable improvements in accuracy during initial beta programs and these will be expanded over time.

The customer remains at the heart of Bridgestone's executive agenda and by blending the experience from on-the-ground interactions of the sales force with AI-enabled tracking of consumer sentiment through social media forums, they can focus on developing products and services that are dynamically tailored to consumer needs. The customers they want to attract expect responsiveness, quality, service and a great experience—it's all about enabling convenient fitment and peace of mind.

BRIDGESTONE

Bridgestone SA is a unit of the world's No.1 tyre manufacturer. Today, Bridgestone develops, manufactures and markets tyres for passenger, light truck, truck, bus, earthmoving, agricultural, motorcycle and aircraft applications. Leading the way in this new millennium, Bridgestone develops technology to keep them at the top of their industry, providing customers with innovative quality products.

What next?

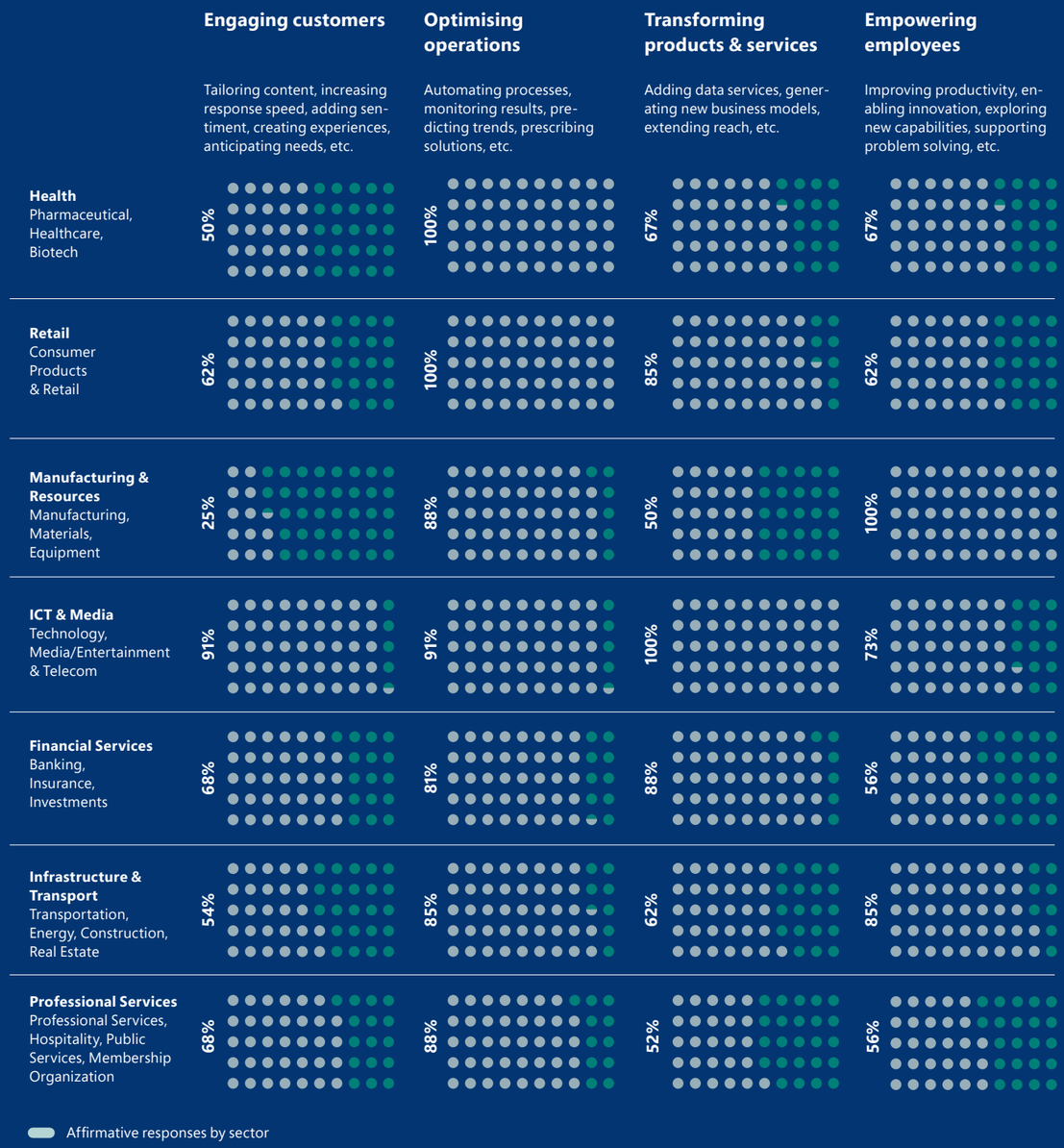
Bridgestone is a customer service company, and they want to use AI as an enabler to add peripheral services to support fleets. There is a huge investment into infrastructure, with a digital backbone and a move into the cloud. They are using consultants to facilitate the change that is required in the business and introducing thought leadership to educate Senior Executives about AI and digital opportunities. Some work is starting with key partners and alliances in the AI value chain, in order to identify and capitalise quickly on immediate opportunities as they present themselves, which is a new way of thinking for the business.

> **Trying to own too much of the value chain in this space carries too much risk, so we are taking small bets on lots of things, rather than big bets on fewer things, and we are doing this with partnerships.**

> **Signs of social upheaval of the workforce is everywhere and 55-60-year-olds are going to be blindsided, unless we get them to realise that they are already using AI if they use a smartphone or the internet.**

Sector Benefits Landscape

We asked companies across sectors in the region what business benefit they expect AI to generate across Engaging customers, Optimising operations, Empowering employees, and Transforming products & services



Front to Back

What are the expected benefits by regional sector?

Executives surveyed and interviewed in the various sectors recognize the distinct benefits of AI, speaking about the myriad of ways they see AI transforming their businesses and industries. Although there are clearly discernable patterns, executives from different sectors often speak to different benefit areas that they particularly hope to capitalize on.

ICT & Media companies have the widest range of benefits

ICT & Media companies see significant benefits across the spectrum, where the application of AI ranges from changing customer engagement models to attracting new clients and reducing churn, whilst creating new products that meet consumer needs based on AI enabled customer analysis. In addition, the ability to use AI to reduce the cost to serve in a highly competitive market, and to empower employees to drive up per capita productivity and support better client service are big opportunity areas.

Professional Services companies focus on Optimizing Operations

Despite ranking lowest in overall benefits, executives in this sector all oversee significant human capital pools and intellectual property/knowledge bases. Notable value can be extracted through effective integration and efficient deployment of both assets using AI solutions. As their clients become more technology orientated, Professional Services companies will change their mechanisms of customer enagagement to align.

Efficient operations key in the Health sector

With much of the Health R&D occuring in regions such as Europe, most companies surveyed in this sector see the biggest benefit being more effectve within operations. Using AI to better optimise their workforce and leverage the expensive machinery to generate greater ROI, would be imperative. Despite very advanced technology the sector is still plagued by inefficient analogue processes that hamper operations.

Engaging customers in new ways in the Retail sector

The Retail companies we spoke to rank second highest overall in expecting benefits from AI, buoyed by 100% of them expecting benefits in optimising operations. The ability to develop and deliver targeted, tailored offerings to customers was also very high creating flexibility and nimbleness in product development, manufacturing and highly dynamic supply chains was seen as the key.

Manufacturing & Resources and Infrastructure & Transport look to empower employees

Companies from Manufacturing & Resources with 100%, and from Infrastructure & Transport with 77%, are high in terms of expecting benefit gains through AI empowered employees. Very complex operational environments, managed and operated by highly experienced engineers and operators, are constrained by the availability of specialists, so using AI to assist and enhance the output of specialists would yield significant benefits. In companies with large workforces such as in Mining, micro improvements to employee productivity can yield massive gains.

AI to revolutionize Financial Services firms

Finance companies reported some of the highest expectations for AI benefits across the four domains, which would explain the sector being one of the current frontrunners when it comes to AI maturity. Using machine learning to detect fraud, automation to streamline KYC efforts in the back office, and reducing compliance and regulatory costs via technologies that digest vast quantities of legal documents, financial institutions are looking to provide higher quality service at faster speeds and lower costs. Investment decisions can be guided by robo-traders to transform products and engage customers in the front office.

> **AI represents an opportunity to leapfrog some of the issues we experience in our business. In a traditional business like ours we are using AI to avoid building sophisticated and expensive planning modules on our ERP platform.**
>
> **— Bridgestone**

We need the capability to set up a digital ecosystem platform with AI startups, to manage integration of their products and set up governance structures and security. In that way we can utilize the specialist skills of passionate individuals who would not be comfortable working in a corporate environment.

— Discovery Group

There is risk with all new technology, it is about how we manage it.

— Quantum Global Solutions

Risky Business?

What do business leaders need to pay attention to when implementing AI?

Along with the obvious excitement about the benefits that AI can bring, organizations are reflecting on the risks that are linked to disruptive technologies. Executives intuitively sense the value of AI, but are conscious that being caught up in the hype might blind them to the dangers of investing in solutions that are only starting to demonstrate their commercial value.

Common thread is the risk of regulatory requirements

Almost half of the respondents articulated concern about adhering to existing regulatory requirements, as well as navigating the nascent, often ill-defined regulatory landscape for AI. Compliance with regulations such as POPI and GDPR through to cyber exposure means that solutions must be considered not just on commercial viability but also potential non-compliance to regulations. The lack of clarity around possible new AI legislation can slow down scaled deployments, as leaders worry about investing in areas where the rulebook is still being written. In some countries, executives feel the need for forward thinking legislation that accelerates adoption of AI technologies by shaping the frameworks and social contexts in which companies can function, giving leaders confidence to initiate far bigger programs without fear of inadvertent transgression of regulations that aren't yet written.

Where is the human in the loop?

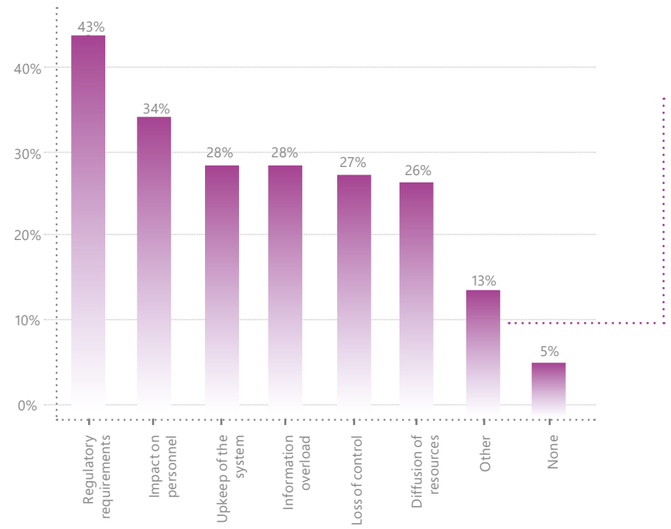
It is unsurprising that the second most common risk mentioned is the impact that AI could have on staff members. Automation anxiety is a very real concern against the backdrop of high unemployment figures. It will be imperative for companies to consider the organizational change management aspects and ensure employees are reskilled to become part of the journey, motivated and engaged in restructured work activities enabled by AI.

Thirsty for information, drowning in data

AI will consume a significantly greater quantum of data and will also accelerate the velocity and volume of information moving around an organization. AI can manage and make sense of big data, but using it effectively requires careful consumption of outputs to know what is useful and what is just noise. AI is also only as good as the data that feeds it, and organizations do not have sufficient infrastructure and data management protocols in place. How do you build a data platform for something where you aren't exactly clear what the final outcome will be? A significant amount of spend may still be needed to manage the dynamic and flexible data feeds that AI requires before value is extracted.

Regulatory requirements are considered the biggest business risk

What do you see as business risks with regard to AI?



Some interesting risks expressed by participants:

What if investment on AI doesn't deliver the expected returns? What if it's all just hype?

What are the ethics that will govern AI, how will we protect against manipulation of data?

Learn from the Leaders

The promise of AI lies in creating business value.

We have identified the eight most recognized capabilities needed to successfully create value from AI, and assessed how competent the companies are within each capability.

Perhaps more importantly, the executives we spoke with highlighted the importance of these 8 competencies as those needed to successfully create value from AI.

Capabilities. How?

What competencies are required to get AI right?

This section explores the eight capabilities necessary to develop AI maturity, realize tangible business benefits, and minimize risk. As exhibited in the chart on the following page, we asked the companies to rank the importance of these capabilities in terms of incorporating AI into their business, as well as to self-assess how competent their companies are with regard to each AI enabling capability.

The human element and technology

Some of the eight capabilities center around human elements: AI Leadership; Open Culture; Agile Development; Emotional Intelligence. Others are more technology oriented: Advanced Analytics; Data Management; Emerging Tech; External Alliances.

Ranking of key capabilities for realizing AI potential

Data Managment comes out on top as the most important AI enabling capability among the companies surveyed and Advanced Analytics is second. AI Leadership is regarded as the third most important capability. Open Culture refers to collaboration and the ability to embrace change and uncertainty, and is ranked fourth.

Fifth is Agile Development, where self-organized and multi-disciplined teams are characterized by shorter project cycles and the ability to work with constantly evolving technology, leading to wider buy-in and scaling, followed by understanding how to deploy the right Emerging Technologies in a future proven way.

Entering into External Partnerships ranks second to last in terms of importance, perhaps because it's the area that resonates most with existing capabilities and where business leaders perceive themselves most in control. As the majority of companies we spoke to are looking to enhance their skills by leveraging an ecosystem of internal and external sources and close ties with academia, given the shortage of skills in all surveyed countries, it is not due to a general lack of relevance.

Bringing behavioral science into play via Emotional Intelligence to build solutions that understand and mimic human behavior, and make it easier for humans to interact with the technology, is seen as the relatively least important AI enabling capability. An explanation for this could be that the technical skills are still so relatively complex for companies to grasp and establish, that more advanced human cognitive skills become less of a priority at this stage.

Noticeable sector deviation

As exhibited in the following chart, where business leaders are asked how competent their company is in relation to the most important AI enabling capabilities, there were notable variations across sectors with certain sectors generally showing a stronger competence across most of the capabilities.

Sectors that are more mature in using AI are those that report higher competency in Advanced Analytics - particularly Finance (including Banking, Investment and Insurance), as well as Services (including Services, Professional Services and Hospitality). Life Sciences (including Healthcare and Pharma) was lower than other sectors across the board, due largely to the fact that a lot of the pharmaceutical industry R&D and AI innovation is based in Europe and cascades down to the countries we interviewed. So although they utilise AI technologies extensively, they do not directly create AI solutions to the same degree.

8 capabilities

1. Advanced Analytics
Obtaining and deploying specialized data science skills to work with AI by attracting talent and working with external parties

2. Data Management
Capturing, storing, structuring, labeling, accessing and understanding data to build the foundation and infrastructure to work with AI technologies

3. AI Leadership
The ability to lead a transformation that leverages AI technology to set defined goals, capture business value and achieve broadly based internal and external buy-in by the organization

4. Open Culture
Creating an open culture in which people embrace change, work to break down silos, and collaborate across the organization and with external parties

5. Emerging Tech
The organizational-wide capability to continuously discover, explore and materialize value from new solutions, applications, and data platforms

6. Agile Development
An experimental approach in which collaborative, cross-functional teams work in short project cycles and iterative processes to effectively advance AI solutions

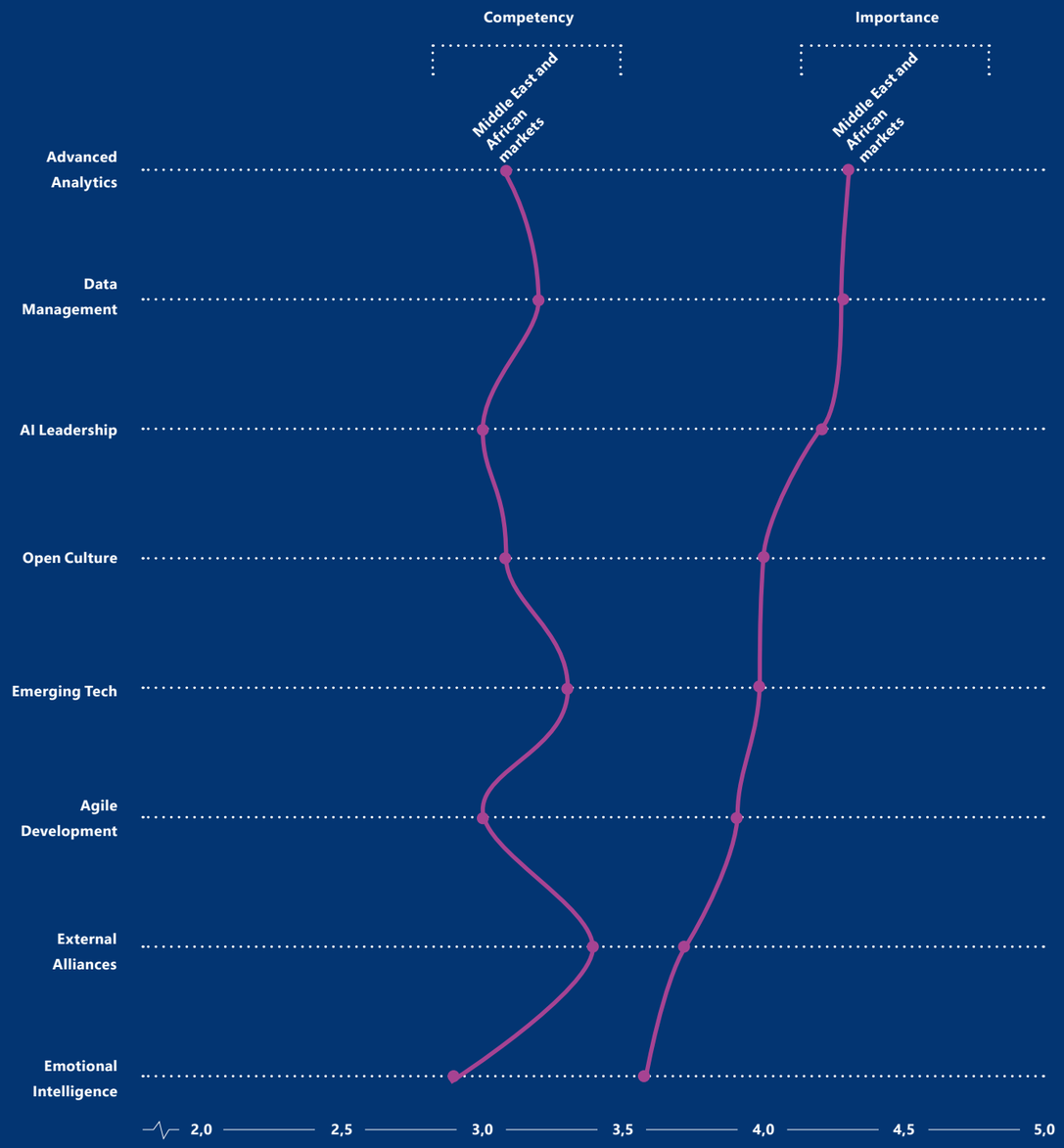
7. External Alliances
Entering into partnerships and alliances with third party solution providers, technical specialists, and business advisors to access technical capabilities, best practices - and talent

8. Emotional Intelligence
Applying behavioral science capabilities to understand and mimic human behavior, address human needs, and enable ways to interact with technology and develop more human-like applications

AI Competency Model

Advanced Analytics and Data management considered most important AI capability

How competent is your company within these organizational capabilities?
How important is each of the organizational capabilities for your success with AI?



Note: 'Don't know' answers not included in average score.
Average competency and importance for South Africa and Middle East and African markets (1: lowest – 5: highest).
Capabilities ranked according to highest importance in Middle East and African markets.

Financial Services leads the other sectors in AI competency

How competent is your company within these organizational capabilities?

Note: 'Don't know' answers not included in average score.
Average competency by sector (1: lowest – 5: highest).

1. Advanced Analytics

Obtaining and deploying specialized data science, data engineering, data architecture and data visualization skills by training employees, attracting talent and co-creating with external partners

Within the new working habits of the sector, productivity and simplicity strategies can be reached via analyzing the data with advanced analytics & artificial intelligence.

— Allianz Turkey

The backbone of AI is made up of skilled, intelligent minds who are capable of understanding business problems at the granular level, and deploying AI to effectively solve or support others in solving these problems. This requires technical data science and mathematical engineering skills, but also hybrid profiles with sufficient business acumen to decode problems and ability to tackle them using quantitative methods.

A self-fulfilling talent prophecy

It is evident from the study that there is a major lack of technical data skills to meet the drastically rising demand for AI. As a result, the hunt for AI experts has become extremely competitive, and it is far from uncommon that functional AI experts are paid higher salaries than their superiors and this will necessitate new HR remuneration models. Several business leaders state that the lack of AI talent is the greatest barrier to implementation within business operations. Interestingly, companies that have chosen an early adopter strategy for AI have been successful in attracting senior professionals who again have been able to build out strong AI teams in their companies – based on the premise that talent seeks talent – making AI recruitment a self-fulfilling prophecy for these pioneering companies.

In other words, the longer you wait, the harder it can be to get the right people. Consequently, a 'wait-and-see' strategy can be risky for companies that are AI followers due to the scarcity of talent, which may prove impossible to attract once the company is ready to make a more ambitious move into AI. While many companies struggle with acquiring AI talent, we also experienced companies with significant AI teams of highly qualified and experienced data scientists. Most often, these companies have been first movers on AI and attracted senior practitioners tasked with building out sizeable AI communities to work on the most strategic business agendas.

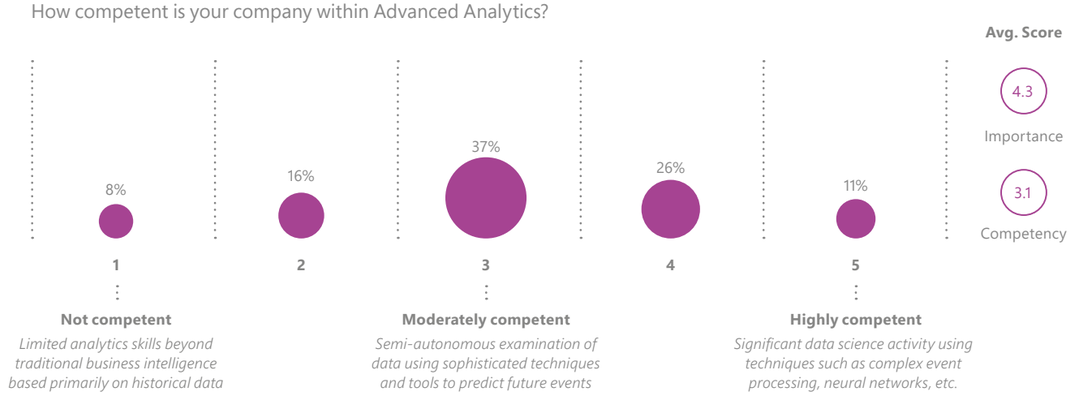
Hybrid profiles becoming the hardest currency

One of the most consistent inputs from the executives was the need for people with deep domain knowledge combined with strong technology proficiency. This hybrid profile is essential to identify relevant use-cases in the business with possible AI solutions.

As opposed to data scientists, software engineers, and even data architects that can be recruited externally, the hybrid profile is often nurtured by training existing employees from the line of business and adding AI skills. To succeed, however, a fundamental appreciation for technology is required.

Companies consider themselves moderately competent within Advanced Analytics

How competent is your company within Advanced Analytics?



Note: Remaining percent are 'Don't know' responses

Co-creating to compensate for blind spots - while avoiding the black box

The scarcity of available talent has led companies to increasingly co-create solutions with external partners who bring with them specialized know-how. However, executives very clearly point to the need for internal AI capabilities in the receiving end to understand the real problems and evaluate the performance of external partners. Companies find that AI solutions implemented by external parties become black boxes unless the organization is capable of contributing and taking over the solutions after delivery. Avoiding black boxes is a general concern amongst executives. Consequently, internal data scientists must be able to decode and dissect AI applications to explain the underlying rationales. Such rationales are important in making AI driven solutions credible, and greatly reduce the risk that an AI application draws wrong conclusions based on false assumptions.

Even during an economic downturn investing in data makes sense as AI can provide significant cost advantages and efficiencies.

— Emaar

What to learn from AI leaders:

1. **Providing interesting problems, good data, and a freedom to thrive in a non-corporate environment is key to attracting talent.**
2. **A wait-and-see follower strategy can prove risky and put companies in a talent scarcity trap.**
3. **Training existing staff with deep business intrinsics is key to make AI work - and effective when access to talent is challenged.**

2. Data Management

Capturing, storing, structuring, labeling, accessing and governing data to build the foundation and infrastructure to work with AI technologies

Companies tend to focus their AI efforts in areas where they aleady have relevant data. We found that the amount of data available for immediate consumption varies significantly by sector but regardless, a significant proportion of the time companies dedicate to AI is spent on data management related tasks.

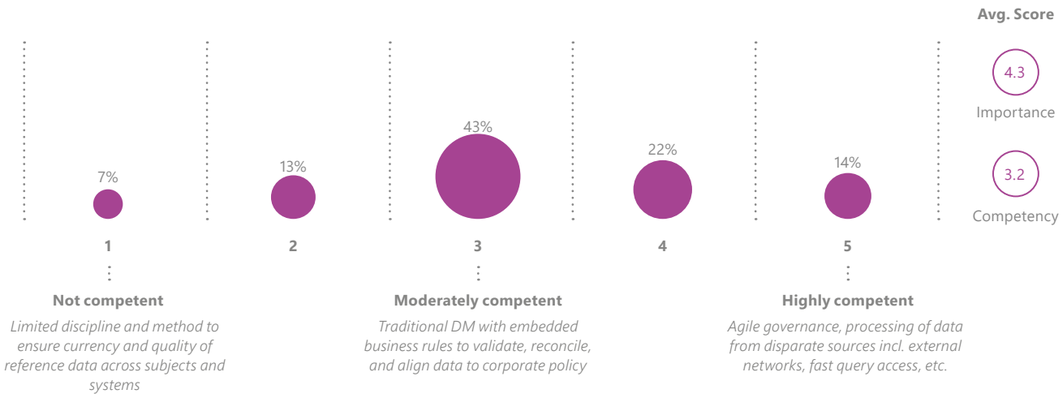
Data governance is no trivial task
One of the major hurdles companies face regarding data is governance, particularly who 'owns' it, how data is stored, how to access it, and who may access it, are all essential questions when working with AI. Questions that used to be about efficiency suddenly become highly strategic and complex to respond to without rethinking governance structures and policy. Governance aside, the most common obstacles to using data are organizational silos or legacy systems built for specific purposes, resulting in decentralized storage that limits access.

Companies reported that they typically spend 2-3 years building the appropriate data infrastructure for AI, and many respondents with the most ambitious AI visions are still spending the bulk of their time fine-tuning their infrastructure.

Data privacy regulations
Data infrastructure is not only a prerequisite for effectively working with AI, but is increasingly needed to comply with data privacy regulations, which respondents see as a key risk. The recent implementation of GDPR in the EU, as well as local country legislation, has highlighted the need to govern data usage. AI-specific regulation is still very immature, and AI leaders find that a lack of clear guidelines can limit their progress as they cannot factor legisation requirements into their long term planning.

Advanced companies (also) appreciate external and unstructured data
To build precise and useful AI solutions, companies not only need a lot of data, but also accurate data that is appropriately structured and labeled. Data is often reported to be in an unusable state, as it could lead to undesirable or unreliable outcomes. A significant number of clients are investing significantly in the 'foundational' activities, specifically around data, in order to create the platform for AI solutions in the future, including creating completely new data structures. Interestingly, we found that while companies that are less mature in AI tend to use mostly structured data from internal data sources, 53% of the more advanced companies use both structured and unstructured data, and a significant 54% use data from both internal and external sources. Similarly, 36% of these self-rated most advanced companies report use of hybrid architectures with on-premise and cloud based storage, while the less advanced predominantly rely on on-premise platforms.

A significant share of companies consider themselves moderately to highly competent within Data Management
How competent is your company within Data Management?



Note: Remaining percent are 'Don't know' responses

What to learn from AI leaders:

1. Make sure that the value of data is understood and prioritized throughout the organization.
2. Engage the C-suite in defining data governance and strategy - it is key to getting AI right.
3. Build your data structure to embrace unstructured data, also from external sources - advanced companies indicate that you may soon need it.

> **Quality data is essential to unleash the real power of AI.**
>
> **— Smart Dubai**

> **Collecting data in a clean manner is now everyone's challenge.**
>
> **— Careem**

3. AI Leadership

The ability to lead an AI transformation from top to bottom - by articulating a vision, setting goals and securing broad buy-in across the organization

A difficult question to answer is that who will be accountable of wrong decisions made by AI.

— Jolly Tur

As with any corporate transformation, the foundation for successful deployment of AI is executive leadership buy-in and sponsorship. The C-suite must be aligned in what they want to achieve, and AI must be placed on the strategic agenda to ensure that AI efforts are an integrated part of the company's overall strategic goals, that capital is allocated, and employee time is dedicated.

AI Leadership among the lowest competency of all capabilities

Given the relative importance of AI Leadership (avg. 4.2 across all sectors), it is interesting to see that business leaders self-assess their level of competency as among the lowest of all eight AI enabling capabilities, with an avg. competency of only 3.0, and 64% of respondents state that their companies have moderate, little or no AI Leadership competency. Many executives are realizing that business acumen is not in itself sufficient for comprehension of how AI is impacting the business. As AI technologies become increasingly complex, leaders must be able to launch, support and, where necessary, challenge relevant AI initiatives against strategic business imperatives. The disruptive potential that companies believe AI will have also means that leaders should anticipate and prepare for a broader change management exercise aimed at embracing the change from AI on multiple levels.

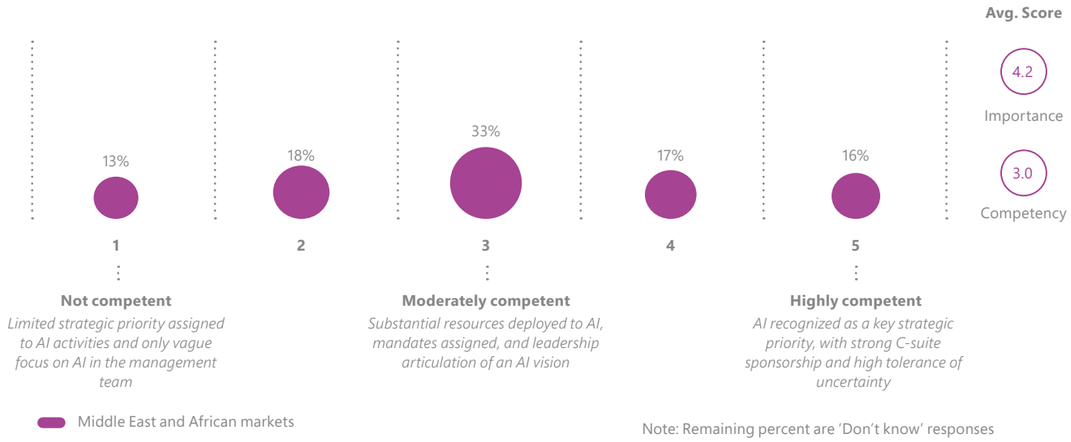
Significant variation in AI conversations from top to bottom

Interestingly, data reveals that AI is considered an 'important topic' on the C-suite level amongst 80% of the companies surveyed. However, less so on the Board of Director level, where it is only considered an important topic in 37% of companies, and even less so on the operational employee level, at 26%.

We observed in the interviews that companies very rarely have AI capable leaders across the Board of Directors, Executive Management, and Functional Management layers. Senior AI leaders may sometimes be found on one of these levels, but rarely with

A large proportion of companies consider themselves to have limited or no AI Leadership competency

How competent is your company within AI Leadership?



Note: Remaining percent are 'Don't know' responses

any speaking leadership colleagues to challenge their ideas. This leadership vacuum was often pointed to as an issue from lower level AI experts.

Accepting loss of control

As new technological opportunities foster innovative, dynamic business models, organizations will need to tear down silos to become more agile and collaborative. To achieve this change, it is paramount for leaders to create and convincingly articulate a vision, so stakeholders understand the bigger picture.

A general characteristic of this challenge is that leadership needs to accept that it will lose some control. Projects will increasingly be explorative, bottom-up and have less certain outcomes, requiring leaders to be ready to adjust the overall direction of the company more frequently. Increasingly, AI projects will rely on open source code and off-site cloud solutions, building on collaborative capabilities outside the company.

What to learn from AI leaders:

1. **The organizational transformation driven by AI will be continuous - this requires seeing AI as a process, not a project.**
2. **Leadership must be accustomed to AI technologies to understand how it will affect the company.**
3. **Articulating a clear AI vision is key to achieving buy-in and motivating exploration of use-cases with uncertain outcomes.**

There is a growing interest in AI in teaching and research. This is considered a big advantage for our university and this should be utilized to build capacity in this field and to increase the awareness about the benefits of AI.

—Jordan University of Science and Technology

4. Open Culture

Creating an open culture in which people embrace change from AI, navigate confidently in uncertainty and ambiguity, work to break down silos, and collaborate seamlessly across the organization

New technologies have often disrupted how work is conducted. AI is no different. Establishing an open, collaborative culture to minimize resistance and enable human performance can prove efficient to prepare the organization for transition. However, this may be difficult, as the magnitude of impact driven by AI can imply a fear of uncertainty, ambiguity, and a general resistance to change.

Risk to employees less of a concern among most advanced companies

Companies reported that employees generally are still uncertain about their attitude towards AI. Although they may have a generally positive attitude towards the principles of AI, the open and supportive attitude wavers, and in many cases reverses, once new technologies start impacting the way work is done.

To achieve buy-in, business leaders must make the changes due to AI tangible to reduce organizational uncertainty. However, companies expect a significant impact from AI which will drive a fundamental transformation and increasingly assist in tasks previously performed by humans.

Regardless of whether companies rated themselves as advanced or not, 30% still raised culture as a major concern, implying that even as companies mature in AI, fostering and growing an open culture will remain a long term agenda item for executives.

Competency gap still noticeable

There remains an appreciable gap between importance (avg. 4.0) and competency (avg. 3.1), as creating an Open Culture is one of the capabilities where business leaders feel much work needs to be done, specifically in regions where a culture of 'knowledge is power' exists and therefore knowledge isn't always freely shared.

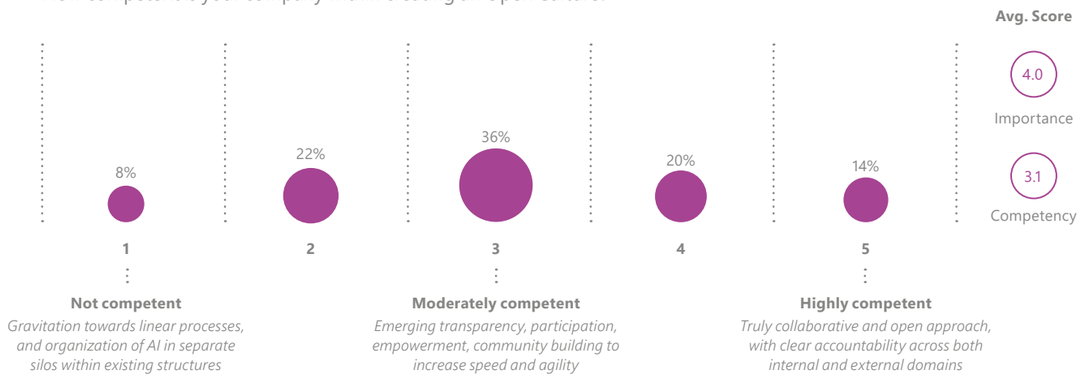
An obstacle mentioned by many respondents is the ability to work collaboratively across the organization despite AI most often being put to use in quite narrow use-cases. With benefit areas being limited to specific domains or functions, it is often not seen as relevant to involve the organization in a broad and collaborative approach on AI.

Our biggest challenge is the fear of negatively impacting employment.

— Jordan Ministry of Labor

Most companies rate themselves moderately competent in Open Culture

How competent is your company within creating an Open Culture?



Middle East and African markets

Note: Remaining percent are 'Don't know' responses

Furthermore, many companies have had difficulty in carrying out effective AI programs, which are closely modelled on the lean processes of startups. The primary purpose of such programs is to enable brief, agile projects to gauge the applicability of the AI use-cases, which requires a substantial change to company culture. Silos between departments in the company have to be broken down in order to promote a culture where AI teams work in conjunction with the rest of the company to create value, circumventing needless complexity and time-consuming processes.

Another issue relates to the concept of sharing data openly, when the value of the data remains largely unknown until it has been treated, processed or combined with other datasets.

Cooperation across the organization

Many of the most advanced companies that have been able to produce several AI projects have also managed to establish links and cooperation across the organization. These cases indicate that the benefits of an open work culture far exceed the difficulties and associated risks.

An obvious obstacle to an open culture is the fear of job losses with the introduction of AI. According to respondents, the fear of workforce redundancy has some merit, but the concern should not overshadow the significant benefit potential of AI. A pivotal task for company leaders is to proactively articulate a tangible vision for AI initiatives. This will make it easier for employees to understand the AI opportunities on a personal level, and thereby embrace the change ahead.

What to learn from AI leaders:

1. **Establish cross-organizational projects to foster collaboration and learning across functions.**
2. **Ensure employee buy-in by being open and clear about on-going projects and desired outcomes.**
3. **Ensure that governance structures support collaboration through projects co-owned by AI experts and business leaders.**

AI isn't only about new technology, it's a new way of thinking.

— First Abu Dhabi Bank

5. Emerging Technology

The organization-wide ability to continuously discover, deploy, and create value from intelligent solutions, applications, and data platforms

Evidence of the rapid pace of technological change is plentiful in today's digital world. What we have seen is that there is a definite correlation between being ahead of the pack with AI and having a wider technological adoption. That AI benefits from being able to identify and implement emerging technology may seem intuitive and obvious, yet finding the right formula is no trivial exercise.

How strong is your tech radar?
With an average score of 3.3, the ability to explore and implement emerging technology is an area where business leaders perceive their companies to be relatively competent, second only to External Alliances.

One factor in working with emerging and rapidly developing technology to build a stack that is fit for AI is a well-calibrated 'radar' by which companies pick up on the trends outside of their own walls. Many companies mention that being unable to quickly integrate innovative trends and cutting edge technology due to the burden of legacy systems, siloed business units, and complex governance processes is proving a real challenge for their AI adoption.

While there is some truth behind such stereotypes, we also heard from several executives who have been able to build radars that pick up on what's happening in technology domains and applications. This continuous explorative process is serving them well to get an overview of workable AI solutions that could prove successful in production.

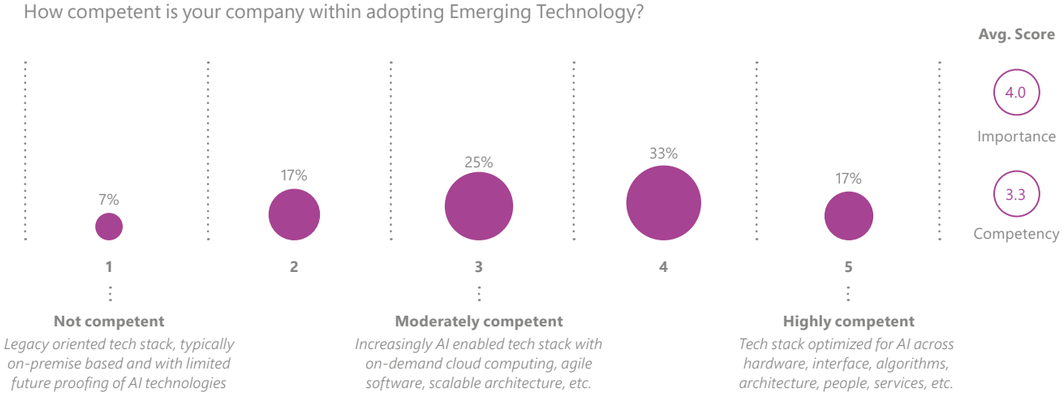
Do you enable or hinder innovation?
Once companies are able to selectively source new solutions from the outside world, the challenge is then how to enable them. This may be a case of actively encouraging enablement, or at the very least not hindering it. Many companies treat AI as a crucial piece of a wider digital puzzle, where dots need to be connected across technologies. This means that success with established technologies, from cloud and SaaS platforms to getting the basics right with analytics, is key to building on what is already there.

Working with emerging technology also relates to agile development and the ability to trial, test and experiment in iterative, short cycles. This kind of agile culture allows companies to work with less stable, untested technology. Enabling innovation requires an outlook from the very top of the organization that accommodates longer investment horizons and at times uncertain financial returns. This is particularly key when working with AI technology that, according to the executives, is often not as mature as the digital solutions deployed for other purposes.

Not all that glitters is gold
Despite the need to explore and navigate a tech sea characterized by uncertainty, a recurring theme when interviewing executives is the importance of balancing the excitement of new technology and commitment to an innovative mindset, with one foot that is planted firmly on the ground.

> **The supply chain market is very cut-throat, everyone has trucks and warehouses, it is about the technology sitting on top of supply chain that makes the difference.**
>
> **— Super Group**

Emerging Technology is the AI-enabling capability with second highest competence ranking
How competent is your company within adopting Emerging Technology?



Middle East and African markets

Note: Remaining percent are 'Don't know' responses

Seeing past the hype, remembering the business model, and not wasting finite resources on every shiny object is also important. In other words, remembering as a leader that while experimentation is crucial, all that glitters is not gold.

The importance of execution
Finally, this capability is also about effective execution. Many companies we surveyed across the region had developed strong business cases supported by robust concepts and AI applications - on paper. But technical limitations tend to get in the way of implementation. Employees with limited technical ability often need upskilling to work with new technology. IT and business may need to work closely together and speak each other's language to reach common goals. In addition, organizations need to learn to move more quickly and nimbly in this space - whether to complete an acquisition of new tech, to ensure compliance with IT standards, or simply to pair new tech with legacy systems. This ability is often also about speed, not far from the development pace that characterizes the emerging tech itself.

What to learn from AI leaders:

1. **Build a radar to pick up on merging tech trends and connect them to market opportunities.**
2. **Look past the technology hype and remember the business model - it may likely need to change in the not so distant future.**
3. **Cloud solutions can be helpful to engage with multiple datasets across sources - increasingly a priority to capture value from new pockets.**

> **There are many forms of AI, we've been using it for years, just not calling or associating it as AI.**
>
> **— Etihad Airways**

6. Agile Development

An experimental approach in which collaborative, cross-functional teams work in short, iterative project cycles to effectively progress AI solutions

Considering that many AI technologies are still in their infancy, working with them is far from plug-and-play. To overcome this, many of the companies that are successfully working with AI tend to take an agile, iterative approach to projects. With this approach these companies greatly increase their ability to explore AI potential, owing to a drastically reduced project cycle time and dynamic risk reduction. Short project cycles allow project teams to receive constant feedback on what works and what does not, to continuously steer the direction of the project. This creates a process centered on learning and experimentation, helping to build internal knowledge and capabilities.

Most advanced companies deploy top down or via a hybrid model

With an average competence level of 3.0, Agile Development is an area where companies are self-reported to be reasonably skilled. Quickly establishing proof of concept is key to organizational buy-in, and many companies report that an agile, iterative approach helps them build evidence and proof in a fraction of the time it takes for a more traditional project.

This has great significance, as they find a tangible proof of concept is instrumental in achieving buy-in and understanding from the wider organization. Efforts to develop proof via agile development processes are often orchestrated by a central unit that collaborates with business units to identify use cases. Of the most advanced companies, 82% deploy AI into the organization via top down only, or a via hybrid approach of top down and bottom up. Whether these central units take a leading role in pushing the agenda, or instead focus on gathering knowledge and experience from already existing efforts that are decentralized in the organization, varies from company to company.

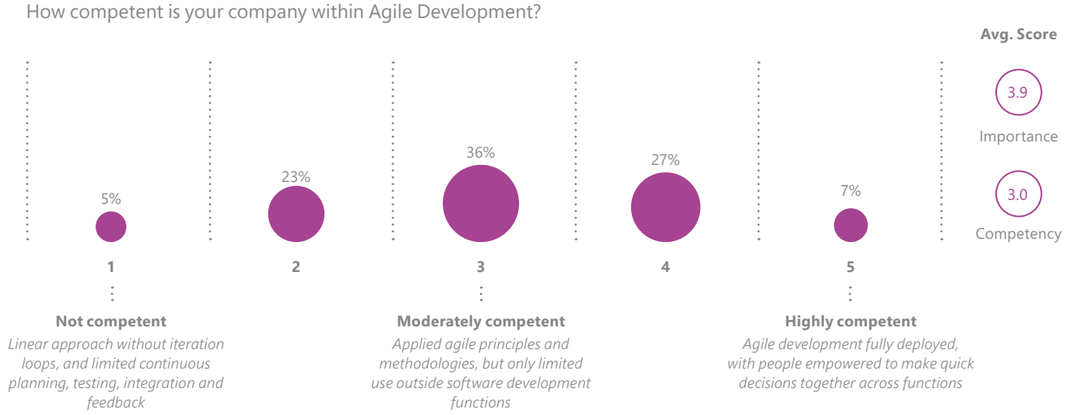
Agility provides the opportunity for informed changes of direction

Taking an iterative approach can also help mitigate risks. Frequent feedback loops allow the project team to better identify, understand, and correct undesired outcomes before the AI application is put into production, potentially doing harm. This flexibility does not only apply to risks - agile projects can generally use ongoing knowledge and experience to make informed changes of direction and avoid the 'black box' syndrome.

> **We need to develop the ability to look at an opportunity, invest the right amount of money, time and effort to see if it will work, then to roll out or discard quickly. It is very hard to get it right**
>
> **— Bridgestone**

Companies seem relatively competent within Agile Development

How competent is your company within Agile Development?



Note: Remaining percent are 'Don't know' responses

In contrast to agile projects, 'big bang' projects are more destined to fail, as they skip the learning process and lack the important feedback loop pivotal to developing good AI solutions. The world of AI is simply too complex for humans to foresee potential issues, and therefore an agile approach is infinitely better.

Agile development new to many business departments

Most companies fully understand the need for agile development, but few reckon that they have the necessary capabilities for it. Working in an agile manner is very different from what most organizations are accustomed to. While a department running an AI project might be familiar with an agile approach, the vast majority of project teams consist of people from other parts of the business. Several IT and AI departments indicate that this collaboration can be difficult, but still see it as pivotal to drive value from the projects. Getting the business accustomed to working in an agile manner is not easy, as it requires acceptance of new ways to govern and evaluate projects.

The outcome of agile projects is typically less predictable than for traditional projects, and for stakeholders to fully embrace an agile approach, they have to accept this randomness and recognize the value of learning.

What to learn from AI leaders:

1. **Agile development is effective in engaging people across functions, fostering collaboration, and bridging tech and business.**
2. **Iterative processes promotes quick internal learning due to their frequent feedback loops.**
3. **Fast experimentation with pilot projects and use-case testing can quickly show how to create value through AI.**

> **We need the right 'dataset', 'skillset' and 'mindset' to realise the value of AI.**
>
> **— Majid Al Futtaim**

7. External Alliances

Entering into partnerships and alliances with academia, solution providers, and AI specialists to access technical capabilities, best practices and talent

AI leaders are increasingly opening up to create collaborative alliances with external partners, enabling them to tap into a significantly larger pool of capabilities and talent, and to reduce the time it takes to develop or deploy working solutions.

This trend seems to be the new modus operandi, unfolding across markets and sectors. It is also the capability with the smallest gap between perceived importance and competence level among the participating companies.

Technology, data, and service delivery partnerships

Development of AI and delivery of related projects are most often done with a mix of internal and external stakeholders. The rationale is multifaceted – some companies are simply struggling to obtain the needed talent, whereas others see a partnership approach to be a faster, more flexible solution. These external alliances typically come in two forms: being focused on technology and technical AI know-how, or focused on strategy and business development.
To address one of the biggest prerequisites of working with AI, access to large amounts of data, companies state that they are increasingly looking to entering into data partnerships where they either buy or exchange data with other parties. This is a way for companies to get hold of data that they are unable to capture themselves, or simply a way of quickly increasing the size of their datasets.

Others report that they look to use pre-developed, out-the-box algorithms, in order to increase the speed of bringing quality solutions into production.

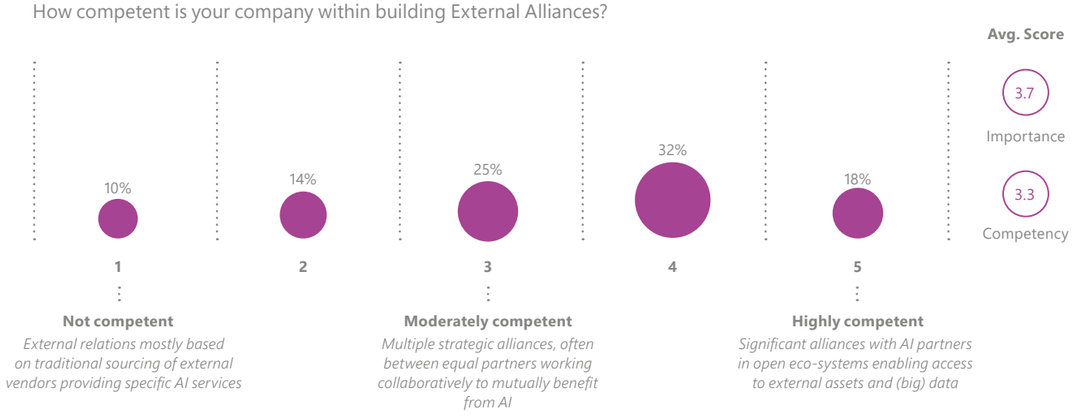
Academia playing a more noticeable role in collaborating with companies

It is becoming increasingly common for companies to enter into partnerships with universities in order to position themselves within AI and get access to crucial knowledge. Companies also see this as a way of establishing a pipeline of AI talent already familiar with their business and the problems they face. Some of the more ambitious companies have a strategy of positioning themselves within AI, comprised of active conference participation and multiple university partnerships in which they actively participate in developing courses and programs.

> **Solution offerings in the market must be very mature before companies invest in it, there is a lot of Powerpoint and not enough working solutions with proven examples.**
>
> **— Arab Potash Company**

Companies generally consider themselves moderately to highly competent forging External Alliances

How competent is your company within building External Alliances?



Note: Remaining percent are 'Don't know' responses

Documentation of code is proving a challenge - also to externals

The lack of code documentation for self-learning algorithms was often mentioned as a very practical issue with AI in general. This led some companies to prefer internal teams and individuals in order to ensure that despite poor documentation, the knowledge about the code at least stays in-house.

What to learn from AI leaders:

1. Make sure to have internal people in the receiving end before widely engaging with external partners.
2. Academic partnerships are an increasingly sought after way to access innovative eco-systems, gain new insights, and explore emerging AI opportunities.
3. Partnerships can pose a challenge to many business processes; consider involving key functions early, like legal and procurement, to ensure a productive partnership structure and effective collaboration model.

> **We don't know what some of the capabilities look like until we have seen them in action, so we are working with partners on a knowledge transfer basis.**
>
> **— Discovery Group**

8. Emotional Intelligence

Applying behavioral science to understand and mimic human behavior, address needs, improve human-machine interactions, and ultimately create more human near applications

AI has for long focused on cognitive capabilities and skills within mathematics, statistics and logical reasoning. Adding human emotion and intelligence, these capabilities move to a new, more complex level: the understanding of human behavior, and the ability to interact accordingly with technology.

Changing the way people interact with technology

One of the limits of traditional AI has been the inability to understand human traits such as emotional state, for instance exhibited in writing, physical condition, or tone of voice. With AI's cognitive intelligence capacities within reach, machines are increasingly able to sense, recognize, and decode human traits. This holds the potential to fundamentally change the way people interact with machines, making technology capable of handling more complex tasks and ultimately augmenting humans to an extent previously unachievable.

Emotional Intelligence in its infancy

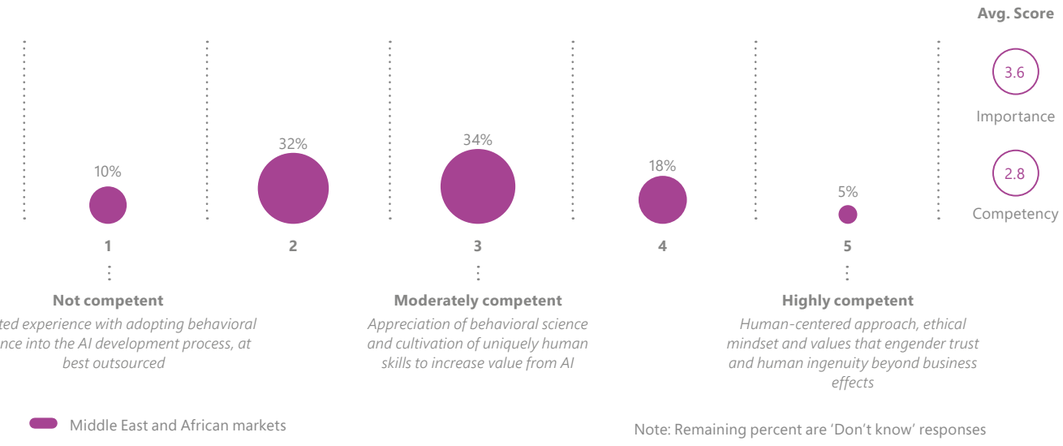
Except for advanced companies, survey results indicate that companies view the adoption of emotional intelligence in AI processes as the least important capability, and the one where they have the lowest competency. When asked to address why this is, companies across sectors and markets note that they are still at a relatively low maturity stage where more immediate requirements such as Advanced Analytics, Data Management and AI Leadership are more relevant and prevalent. However, when taking a deeper look at the companies that have assessed themselves to be 'Advanced' in terms of general AI maturity - meaning that AI is actively contributing to many processes and enabling quite advanced tasks in the company - it is interesting to see that they perceive the Emotional Intelligence capability as more important with a score that is noticeable higher than the average score for all companies.

Many advanced companies perceive this to be either 'very' or 'highly' important. Notably, these companies come from five different markets and a wide variety of industries, including Health, Financial Services, ICT & Media, Retail, and Services & Hospitality.

> **We have to show the benefits first and build trust.**
>
> **— Jordan Ministry of Labor**

Companies consider themselves least capable within Emotional Intelligence

How competent is your company within applying Emotional Intelligence?



Note: Remaining percent are 'Don't know' responses

Value in customer-facing applications

The need for behavioral science to understand human needs is expected to increase with the integration of AI in smart devices, and in customer facing applications such as chatbots, robo-advisors, customer enquiry processing, etc. The most advanced companies' AI technologies are beginning to decode human emotions from text, such as irony, anger, and frustration. This will obviously become more valuable as it is increasingly applied in customer-facing solutions with the ability to learn and improve.

Human centrism requires strong leadership

While emotional intelligence holds great potential that could lead to early adopters gaining a competitive advantage, long-term success is dependent on not only technological development, but also leadership. Leaders must drive the transformation that will make humans comfortable with intelligent technology, as a prerequisite for harvesting its potential benefits. What the most advanced companies have shown is that this transformation must augment human ingenuity to become truly effective.

> **The biggest business risk is that people will stop thinking for themselves, and leave it all to AI. It may get to a point where we trust the outcome of AI without questioning it.**
>
> **— Aveng**

What to learn from AI leaders:

1. **The most advanced companies are putting emotional intelligence to use within their AI applications, despite its relatively infant stage.**
2. **Companies must develop their behavioral science capabilities to mimick human behavior and translate it to technology.**
3. **Many have virtual assistants, chat bots, and NLP as a powerful way to get started with building emotional intelligence into AI solutions.**

There will be a confluence of emerging technologies like cloud, blockchain, quantum computing and AI that have a natural interplay and will advance each other in ways that we can't predict right now, and that's going to be the biggest challenge, and opportunity.

— Standard Bank

With AI, we understand our customer's behaviour, needs and preferences better and offer customized marketing campaigns.

— Opet Petrolcülük A.Ş.

Majid Al Futtaim

In 2016, Majid Al Futtaim embarked on a digital transformation journey with the ambition to become as prominent digitally as it is physically, and identified data, analytics and technology as key enablers of its success. Today, the company has one of the region's most mature data and analytics capabilities with a central team of more than 60 people, including a team focused on developing Artificial Intelligence (AI) solutions. The success of Majid Al Futtaim's AI ambition relies on four critical pillars; access to rich data and modern technologies, the right mindset internally to drive innovation and adoption, the appropriate skills to implement the new technologies, and the right internal governance framework to drive the transformation.

The team is already applying AI across the business, including robotic process automation within human capital, finance and supply chain, on cyber security, attack pattern recognition, and zero day attack prevention, and on social media listening and sentiment analysis. The team has also developed and implemented multiple solutions to improve Majid Al Futtaim's operations and its understanding of its customers. These initiatives include customer segmentation and churn prediction models, assortment and promotion optimisation solutions, and a product recommendation engine developed in-house which is already in use in its Carrefour and VOX Cinemas brands to provide personalised, relevant product offers to online customers.

Majid Al Futtaim is harnessing strategic partnerships to further enhance its AI capabilities, working closely with the Wharton Customer Analytics Initiative, Hyperledger, and Smart Dubai. The company will also introduce Omega, the AI-powered voice assistant, to its customers in 2019. The I.AM+ Omega platform will engage consumers in localised conversational and contextual style interactions, available in English and Arabic, delivering deep cross-domain integration for a seamless customer experience.

The development of talent is another key component of the digital transformation and the company has launched the Majid Al Futtaim School of Analytics and Technology to drive understanding and build capabilities across all levels of the business. There is a full curriculum in place with 40 courses covering data, analytics and technology, with AI forming a core element of the programme, More than 1,500 employees were trained in 2018.

ماجد الفطيم
MAJID AL FUTTAIM

Founded in 1992, Majid Al Futtaim is the leading shopping mall, communities, retail and leisure pioneer across the Middle East, Africa and Asia. A remarkable business success story, Majid Al Futtaim started from one man's vision to create 'great moments for everyone, every day'. It has since grown into one of the region's most respected and successful businesses spanning 15 international markets, employing more than 43,000 people.

What next?

Artificial intelligence provides a significant competitive advantage in an already highly competitive market, and companies need to embrace it just to keep up, let alone succeed. In the future, AI will continue to bring significant value to Majid Al Futtaim's core business through providing customer insights that deliver personalised experiences, automation of certain operations, as well as supporting identification and the enablement of platform extensions. Throughout 2019, the company will embed Omega, the AI powered voice assistant, within some of its core businesses including VOX Cinemas and Carrefour, as well as investigate further opportunities to utilise the technology within the group.

In today's world, a wealth of data can be collected via AI solutions that can be used to create experiences that delight customers. Companies that are leaders in utilising AI will gain a disproportionate share of customer loyalty and spend.

The risks of AI are twofold; ignoring it and being left behind, and implementing it but thinking the technology will do everything.

Fast Forward

How to get started and take AI to the next level?

1. Choose a step-by-step approach in getting familiar with AI

Given the wide scope of AI and variations in use cases, it is key to start out by identifying what problems to solve and what opportunities to pursue. High level prioritizing between engaging customers, optimizing operations, empowering employees and/or transforming products and services adds clarity, is helpful to structure the discussion on a strategic level, and ensures a step-change approach to taking the company to the next AI level. Identify the problems you aim for AI to solve, prioritize the value with business owners, and acknowledge the capability gaps to get there. You need to get on the AI train, but do not jump on the AI wagon blindly. AI should serve your business plan, not vice versa.

Read more in the blog on Linkedin about "AI readiness in 2019 and beyond" Samer Abu-Ltaif, Microsoft President, MEA

2. Display executive leadership and approach AI from a position of strength

Leadership comes from the top, also in the case of AI. For this to happen, executives must understand AI essentials and strategic perspectives, and they must communicate a clear AI ambition to the organization. AI leaders must actively sponsor and mobilize AI adoption on all levels, from the Board and Executive levels, through Management and the operational employees. Staying ahead in the accelerating AI race requires executives to make nimble, informed decisions about where and how to employ AI in their business. When doing so, look to strongholds before bringing in the AI 'twist'. Amplifying existing company strengths is an excellent way to catalyze motivation and internal support.

Read more customer stories to see how others are using AI to transform their business, and learn from Microsoft Research on how AI is solving the most pressing challenges

3. Hire new skills ahead of the curve – or focus relentlessly on training existing talent

A key challenge for putting AI to productive use and accelerate intended outcomes is the war for skills and talent. This not only relates to data scientists and software engineers, but also to skill sets and experience within human and behavioral science. Opting for a follower strategy and being late to the game can prove risky, as talent seeks to go where talent is already. If aggressive poaching for insourcing talent is difficult to embrace, then work bottom-up by training the engineers you already have on the new AI paradigm and collaboratively ride on the backs of the others. Regardless of strategy, focusing relentlessly on building required skills and talent is key to staying ahead and progressing along the learning curve.

Learn more: Train your teams through Cloud Society, a free online learning platform with a range of interactive modules on Cloud and AI technologies.

4. Build a data strategy and technology stack purposefully fit-for-AI

Training your AI products essentially requires significant data. Useful data. Valid data. Establishing a solid data strategy and practice in your organization to proficiently acquire data, identify data, clean data, measure data, and manage data will ultimately make your organization flourish with AI. Build your AI resources around data engineers who organize the data, data scientists that investigates the data, software engineers who develop algorithms and implement applications. Make sure that your structure and governance harness the power of data, and that your technology stack across products, solutions, and applications nimbly enables your AI priorities. When doing so, remember that your business model is likely to change.

Read more about how to build a flexible platform and portfolio of AI tools and next generation smart applications where your data lives - whether in the intelligent cloud or on-premise
Four ways to take your apps further with cloud, data, and AI solutions from Microsoft

5. Beyond all, engender trust and enable human ingenuity

When designed with people at the center, AI can extend companies' capabilities, free up creative and strategic endeavors, and help achieve more. Humans are the real heroes of AI – design experiences that augment and unlock human potential. Opt for a "people first, technology second" approach. This entails designing AI for where and how people work, play and live, bridging emotional and cognitive intelligence, tailoring experiences to how people use technology, respecting differences, and celebrating the diversity of how people engage, Thereby putting people first, reflects human values and promotes trust in AI solutions.

Learn more in the Microsoft Trust Center and the book 'The Future Computed' by Brad Smith and Harry Shum from Microsoft on artificial intelligence and its role in society

Designing for people

At Microsoft we believe that, when designed with people at the center, AI can extend your capabilities, free you up for more creative and strategic endeavors, and help you or your organization achieve more.

The following principles guide the way we design and develop our products:

- Humans are the heroes. People first, technology second. Design experiences that augment and unlock human potential.
- Know the context. Context defines meaning. Design for where and how people work, play, and live.
- Balance EQ and IQ. Design experiences that bridge emotional and cognitive intelligence.
- Evolve over time. Design for adaptation. Tailor experiences for how people use technology.
- Honor societal values. Design to respect differences and celebrate a diversity of experiences.

Innovation is what creates tomorrow.

Learn about our AI platform to innovate and accelerate with powerful tools and services that bring AI to every developer.

Explore Intelligent applications where you can experience the intelligence built into Microsoft products and services you use every day.

Learn about AI for business. Use AI to drive digital transformation with accelerators, solutions, and practices that empower your organization.

Who to Contact

from Microsoft

The team in MEA HQ that can empower your company to achieve more with AI

Jaime Galviz
COO/CMO
Microsoft Middle East and Africa

Jaime took on the role as Chief Operating Officer and Chief Marketing Officer for Microsoft Middle East & Africa in February 2017. Prior this, he was heading the company's Gulf region as Director of Business, Marketing & Operations. During his tenure in both roles, Jaime has brought the power of the Microsoft cloud to organizations across the region, developing a potent ecosystem of people, skills, partners and solutions, to deliver digital transformation and economic growth in communities across the region. Jaime's skill-building aptitude emerged early in his Microsoft career when he created and piloted the MVA (Microsoft Virtual Academy). Nurturing the concept through rigorous testing in his native Colombia, he developed it into the global learning tool it become with more than 10M members.

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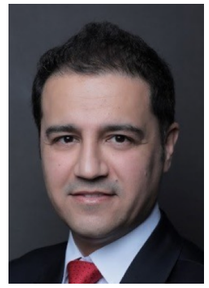

Ken Hobson
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Ken Habson is the Director of Microsoft's Data and Artificial Intelligence Business Unit for MEA. Ken has over 20 years of experience with enterprise solutions for managing, analyzing and acting on data. His approach with emphasis on a "startup"method for managing and growing businesses has helped leading global organizations become data driven businesses and AI ready. He also leads a community of data thought leaders, organizing regular C-level roundtable discussions and meetups to share current global trends in the data space and address challenges organizations face as they expand their analytics capabilities on the journey to being AI infused organizations. Ken mentors senior Data and AI leaders across MEA to address both internal and external challenges they face in building an AI strategy within their organizations. Ken has an Engineering degree, MBA and Advanced Management training from global tier 1 universities.

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Stasa Podgorsek
Data & AI Business Lead
Microsoft Middle East and Africa

Stasa Podgorsek is the Data & AI Business Lead at Microsoft Middle East and Africa. In her current role, she orchestrates sales, marketing and partner related Data and Analytics activities across the region. Prior to Microsoft, she spent several years at IBM working with large enterprise clients from different industries, advising them on their data and analytics strategy and establishing their respective data transformation roadmaps. Her focus areas span from landing digital transformation through modernization of data estates to innovative projects around advanced analytics and artificial intelligence. Stasa is passionate about following new trends around analytics, learning new developments and applying these in action to help clients accelerate their path to digital transformation.

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EY-Box is focused on digital strategy, growth ventures, innovation architecture and tech-led transactions. Thomas works with leading companies to uncover plausible futures, launch new businesses, and rewire their core through data and digital in the search for new profit pools and business models. He serves on the board for several entrepreneurial growth-stage businesses.

Thomas was responsible for the methodology development of the AI study and led a similar study across 15 countries in Western Europe.

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James is a Partner leading the Enterprise Intelligence practice in EY Africa. He is a member of the South African Institute of Chartered Accountants CA (SA). He has over 20 years experience in IT and data management fields across various industries including Financial Services, Telecoms, Parastatal, Mining&Metals, Manufacturing and Fast Moving Consumer Goods. James is responsible for this study in the Middle East and Africa, and also conducted the research in South Africa.

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Ellen holds a PhD in technology, policy, and management from MIT. She holds masters degrees in engineering man-agement and system design from MIT and in applied statistics from the University of Oxford. Ellen advised this study on research design, methodology, and analysis.

Ellen is engaged in the EY EMEIA Center of Excellence on innovation, analytics, and digital. She has worked with global organizations and start-ups, having recently served as the head of R&D for a precision Ag startup that uses AI to assist farmers.

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