

Research Insights

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Middle East prepares for AI acceleration

Exploring AI commitment,
ambitions and strategies



IBM Institute for
Business Value



Talking points

AI is the new space race

While early investment in artificial intelligence (AI) was typically motivated by a desire to get ahead, the emphasis today is increasingly on achieving competitive parity—making sure an organization is not left behind. As a consequence, regional leaders—especially those in Middle East nations—are recognizing AI’s growing significance and are placing AI at the center of national economic strategies, organization, and culture.

AI creates jobs

Despite intense media attention on AI’s possible impact on replacing workers, empirical evidence collected by the IBM Institute for Business Value over several years is dispelling this assumption. Executives globally, including those based in the Middle East, consistently tell us they are not focusing on cost takeouts, but, instead, are concentrating investments on revenue, sales, and experience-related areas.

Trusted AI differentiates

Left unchecked, concerns about the trust, privacy, and transparency of AI can create barriers to adoption. These must be addressed directly if businesses are to maintain customer confidence in AI-enabled functions, processes, and activities.

Connectivity, big data drive AI use

Modern AI has been around since the 1950s. Since that time, there have been several AI false starts known as “AI winters,” in which AI was not considered all that seriously. Now, however, AI is being driven by the proliferation of ubiquitous connectivity, dramatically increased computing capability, unprecedented amounts of data, and ever-more sophisticated systems of engagement. Today’s business leaders understand that AI is an increasingly important tool for future growth and prosperity and are investing accordingly.

Forward-looking countries in the Middle East, such as the United Arab Emirates (UAE), Saudi Arabia, Egypt, and Qatar are taking bold steps—through increased investment across sectors and policy awareness and commitment—to prepare and position for dramatic progress using AI. Smaller countries that develop a significant edge in AI technology will punch above their weight class.

AI investment is clearly on the rise. Indeed, AI success is seen by some as a new space race, hotly contested among major economic powers.¹ Whether measured by AI patents or journal articles, the number of new AI-oriented start-ups, or the quantity of public sector investment and other support, major economies are rapidly accelerating national focus on AI technologies. These nations—China, the United States, Russia, Japan, the UK, and others—are doing so across a wide range of uses—from commercial and educational, all the way through to national security (see Figure 1).²



Executives

from the Middle East are planning to spend 6% of their total IT investments on AI in the next three years, which is almost three times what they are investing on AI now³



73%

of the global respondents agree that AI ethics is important to their organizations at least to a moderate extent⁴

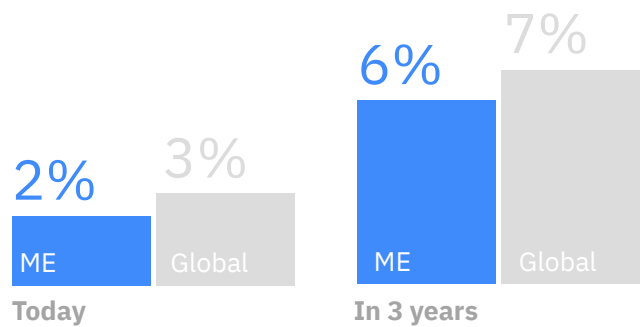


74%

of the executives from the Middle East responded that AI would have at least some impact on skills in the next five years⁵

Figure 1

IT spend on AI



Source: IBM Institute for Business Value global survey of artificial intelligence and cognitive computing, 2018.

Recognizing AI's growing significance, Middle East nations—for example, the Emirates with its UAE Artificial Intelligence Strategy 2031, and Saudi Arabia with its Vision 2030 plan—place AI capabilities at the center of national economic strategies.⁶ Recent estimates of AI contribution to economic growth suggest significant positive impact on Middle East GDP—more than USD 300 billion by 2031.⁷ The UAE, in particular, has prioritized a commitment to “smart,” advocating application and adoption of exponential technologies (such as AI) to transform business, government, and society.⁸

Uniquely, the UAE also appointed the country's first Minister of AI after estimating AI could contribute USD 182 billion to the economy by 2035.⁹ The UAE initiative aims to both improve government performance and create an innovative culture and productive business environment. Embedding AI into the whole fabric of society is one of the foundational cornerstones of the wider UAE Centennial 2071 objectives, which are aimed at setting the stage for the UAE to become one of the best and most innovative countries globally within the next five decades.¹⁰

Executives recognize the need for more responsibility for governance and principles around AI ethics.

Shifting sands

AI impacts not only traditional business processes, but also what is most valuable in workforce skills. Businesses, governments, centers of learning, and citizens alike are growing in this awareness. While hard skills will continue to be important, as machines assume more of the day-to-day and mundane, the emergence of “new-collar” and “digital-collar” jobs is changing the workplace landscape.¹¹

According to new research from the IBM Institute for Business Value (IBV), we estimate that at least 120 million workers across the world’s 12 largest economies will need to be retrained or reskilled by 2021.¹²

Ethics and accountability

IBV research shows that executives around the world recognize the increasing importance of data responsibility, especially as it relates to ethics. Among the set of typical AI ethics issues, data responsibility rose to the top in importance—twice as much as any other.¹³

But despite this awareness and focus on ethics by business leaders, only 38 percent of Chief Human Resource Officers (CHROs) surveyed indicated their organizations had an obligation to retrain or upskill workers impacted by AI.¹⁴

As AI becomes more central, businesses and governments will need to consider how to address and govern the ethical issues these powerful new technologies will inevitably generate. Unchecked, concerns about trust, privacy, and transparency can become legal or reputational issues and create barriers to an organization’s ability to adopt AI.

To address these and associated issues, the UAE government has created a regional ethics council, designed to assess ethical principles, define ethical rules of engagement and set ethical policies required to thrive in the evolving AI world.¹⁵

Saudi Arabia placing big bets on technology

Saudi Arabia, eager to diversify revenues beyond oil, is also making numerous big bets on advanced technologies, including AI. Routing funds from several privatization initiatives into its sovereign Public Investment Fund (PIF), Saudi Arabia is making USD hundreds of billions of investments in tech-related businesses, including the recently floated Slack Technologies (collaboration software), WeWork (shared work facilities), and Uber (mobility). Construction also continues on Noem (or “new future” in Arabic)—Saudi Arabia’s USD 500 billion robot-run, AI-enabled megacity located on the Red Sea coastline.¹⁶

Executives are targeting top-line growth, seeking improved customer satisfaction and retention

Three principles guide successful application of trust and transparency:

- The value in AI lies in human augmentation, not replacement. AI systems will not become conscious or sentient beings; rather, they will be integrated into the world's processes, systems, and interactions. AI cannot, and will not, replace human decision-making, judgment, intuition, or ethical choices.
- Effective transparency and data governance policies will help ensure people understand how an AI system generated a specific conclusion or recommendation. Organizations using AI must be able to explain what went into their algorithms' recommendations.
- Organizations need to understand and anticipate the impact of AI and other associated technologies on workers and their skills. Traditional skills will need to evolve, and organizations should begin the process of preparing their workforces with the needed skills to work effectively in partnership with AI systems.¹⁷

Emerging AI trends in the Middle East

To understand Middle East priorities and plans for AI more deeply, the IBV, in collaboration with Oxford Economics, surveyed 200 executives from across the region (UAE, Saudi Arabia, Egypt, and Qatar) as part of a broader survey of 5,000 executives globally. This survey follows a similar AI survey of 6,050 conducted in 2016, including 300 executives across the Middle East (see Methodology, page 12).

Our analysis reveals that fewer Middle East organizations are sitting on the fence in their commitment to AI. They are more bifurcated, either all in or all out. In 2016, 20 percent of Middle East executives were not even considering AI for their business. Seventeen percent were executing AI strategies in one form or another. The remaining 63 percent of executives were either considering or evaluating.¹⁸

Interestingly, current research shows the percentage of executives expressing disinterest in AI climbed to 27 percent. At the same time, organizations actually executing AI grew to 22 percent. A little more than 50 percent of executives told us they were somewhere in between.¹⁹

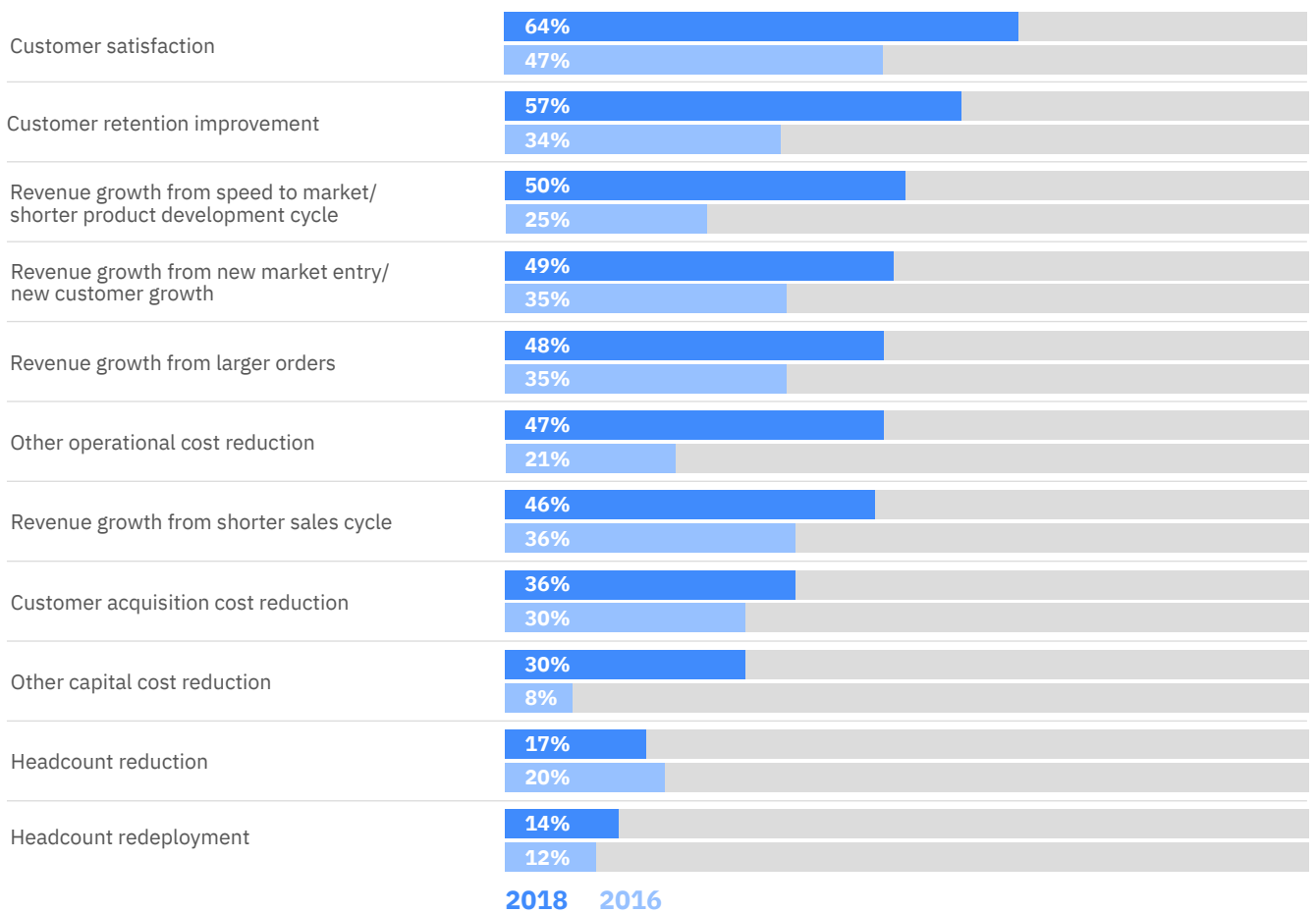
As indicated earlier, rather than cost takeout, executives surveyed both recently and in 2016 are targeting AI toward top-line growth, seeking improved customer satisfaction and retention (see Figure 2).

There has been one significant change in responses since 2016—regulation and other legal issues are now top concerns for the Middle East executives we surveyed, especially with AI. Sixty-one percent of respondents in the AI study cited legal/security/privacy concerns as among the top barriers to implementing AI.²⁰ Recent global IBM research shows that 57 percent of respondents agree that regulatory concerns are among the biggest strategic risks for their nations' economies in the next five years.²¹

Among organizations that we characterized as outperformers—those that say they lead their competitive peers in revenue growth and profitability—55 percent in our latest survey consider themselves in a more mature phases of their AI journey, although not yet actually executing. This is a 40-percent growth over 2016 when just 39 percent considered themselves in a more mature phase (see Figure 3).

Figure 2

Motivation for AI investments across the region



Source: IBM Institute for Business Value global survey of artificial intelligence and cognitive computing, 2018.

Figure 3

Outperformers embrace AI in a major way



Source: IBM Institute for Business Value global survey of artificial intelligence and cognitive computing, 2018.

Accelerating AI adoption across public and private sectors

The UAE's AI Lab aims to accelerate adoption of AI across the private and public sectors. The program is designed to develop local technical talent and build AI prototypes with broad application to different government departments. Several first-of-a-kind projects have been initiated that are expected to have transformative impact on various sectors, including healthcare, government administration, and public safety.²² Interestingly, while cost reduction and efficiency ranked low among almost all Middle East countries, the outlier among countries surveyed was the Kingdom of Saudi Arabia. When asked about its motivation for investing in AI, executives in Saudi Arabia ranked cost and efficiency third and fourth most important. Indeed, as many as 57 percent of Saudi executives selected operational cost reduction as a critical motivation for AI, up almost 150 percent in only two years.²³

UAE leads the region in embracing the power of AI

The UAE government is aggressively pursuing new public-private partnerships to accelerate adoption of AI. UAE's AI strategy focuses on specific priority sectors: education, transport, energy, space, and technology. Healthcare, water, environment, and traffic are also under consideration. UAE is applying four strategic levers across each of the sectors:

- Establishing leadership and governance around AI to build the public trust and confidence in the new technologies
- Increasing AI capacity with renewed focus on talent and skills
- Expanding competition through ecosystems
- Improving AI capabilities and adoption across organizations.

Several recent initiatives reinforce the objectives of UAE's strategy. There has been a strong focus on building physical and digital infrastructure to world standards, supporting strong growth in the Internet of Things (IoT) and blockchain.²⁴ The UAE government has been a leader in e-government and is using the skills and expertise developed in that process for smart, AI-enabled government. UAE has been a strong advocate of open data and data sharing supported with training (Data Champions), platforms (Dubai Pulse) and frameworks (Dubai Data Establishment).²⁵ And the region has also launched several initiatives to help build capabilities in AI and data science (RIT-Smart Dubai Msc Data Analytics, AI Ministry-MBRSG, and more.)²⁶

Another example comes from the Commercial Compliance and Consumer Protection Group in the Dubai Economic Development Department. The group has created a new AI-enabled "Smart Protection" service that engages consumers in direct dialogue around regulatory queries or complaints. Smart Protection furnishes solutions in real time based on precedent, policies, and laws. As a result, efficiency of complaint handling has improved dramatically.²⁷

Regulatory constraints are a top challenge to AI implementation.

Above and beyond

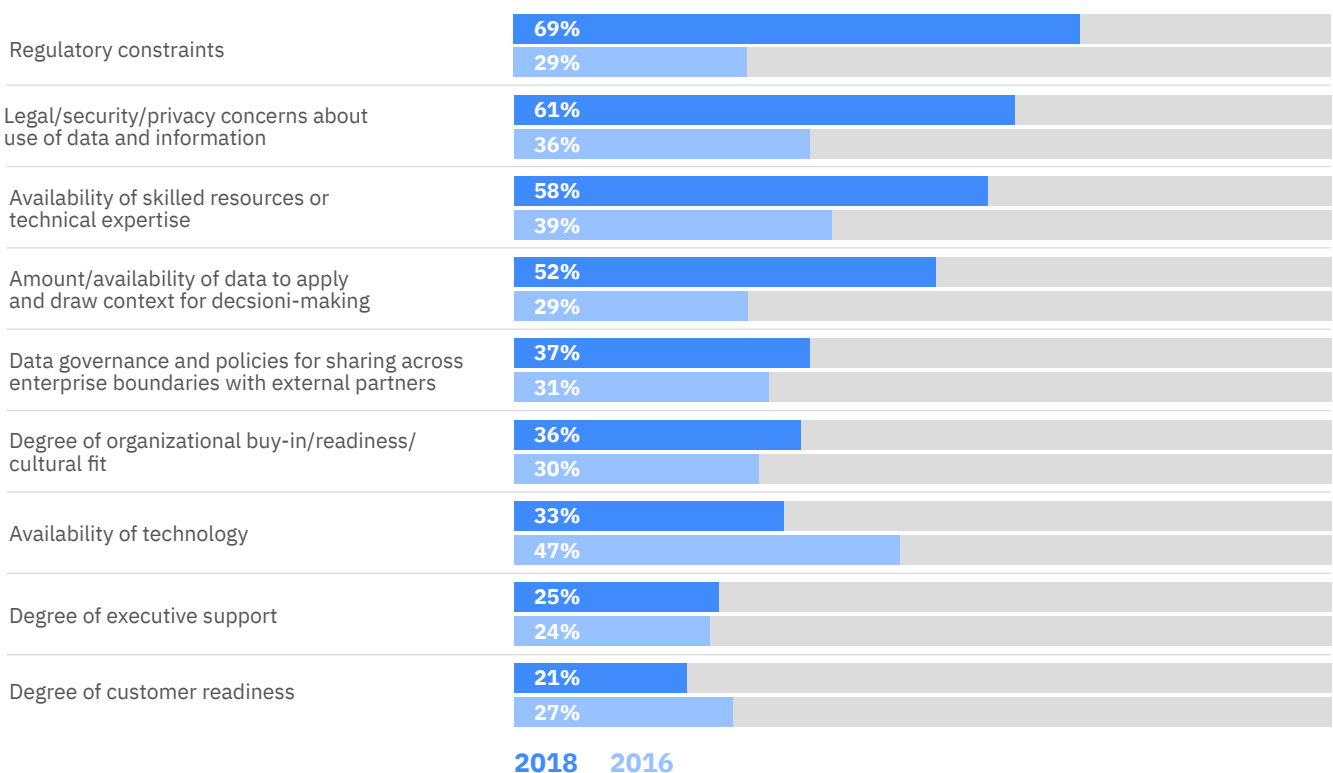
UAE, Saudi Arabia, and Qatar are remarkably consistent in their perspectives on how to implement AI. Regulatory constraints were the most cited challenge for all three nations, up significantly since 2016. As many as 68 percent of Saudi executives now agree that regulation creates a barrier to advancing their AI agendas, an increase of 79 percent in two years.²⁸

The rise in importance of regulation in constraining AI development was even greater in the UAE and Qatar. From being cited as the least important barrier to AI among nine possibilities in both countries in 2016, it is now cited as number one. Sixty-five percent of Qatari executives now identify regulation as a key barrier to AI, up 141 percent in

two years. Similarly, 78 percent of UAE executives cited regulation as a constraint in 2018, up from only 20 percent in 2016—a remarkable 290 percent increase (see Figure 4).

The UAE, Saudi Arabia, and Qatar are also consistent in citing other AI constraints. Legal, security, and privacy concerns around the use of data, along with the availability of skilled resources and technical expertise for AI technologies, were either second or third most important for each nation, mirroring similar concerns elsewhere in the world. Globally, 63 percent of executives cited the availability of skilled resources as a major constraint to AI progress, reflecting fierce competition for AI talent at a global level and confirming the importance of training and education to fully capitalize on AI.²⁹

Figure 4
Barriers to AI across the region



Source: IBM Institute for Business Value global survey of artificial intelligence and cognitive computing, 2018.

Without data, there is no AI.

Egypt sees amount of data as AI barrier

Egypt also proved to be somewhat of an outlier, with data availability becoming a top challenge. In our most recent study, 78 percent of Egyptian executives identified the amount or availability of data as a significant barrier to progress in AI, 11 percent higher than the second option cited—and 225 percent higher than those identifying data as a barrier in 2016.³⁰

The rise of data driven city

During 2018 and 2019, we have seen an acceleration of Middle East's smart city ambitions and investments in new initiatives, programs, and strategy alignment. This is a key factor in contributing to the acceleration of AI adoption. Early adopters of smart cities are realizing the benefits of their investments in key emerging technologies, such as cloud power, 5G networks to harness speed and latency, edge computing for real-time data capture, IoT for connectivity, and the continued improvement of data skills around augmented intelligence, data science, machine learning, deep learning, and analytics.

According to the 2019 IBM C-suite study, "Build Your Trust Advantage," having a clearly aligned strategy for both AI and data built on a foundation of trust are essential for success. In this study, we identified a unique group we called Torchbearers. This group represented a small percentage of the audience (9 percent) that stood out from the crowd because of their ability to create extraordinary value from data, understand where their data sat within the organization, and how to monetize its value.³¹ The Torchbearers had more than three times as much trusted and actionable data as their peers. They achieved this through fusing their business strategies to their data strategies, aligning it across the C-suite and embedding a unique data culture across everything they do. The consistent outcome was improved time to market and the acceleration of AI and machine learning projects through improved data quality. New business models and improved ROI were the result.

Organizations building these smart cities recognize that when data is shared among organizations, it can grow immensely in value and through greater transparency. This can improve trust in both their partners and the general population. Business platforms, where data circulates freely among multiple parties, can be the core advantage, with organizations learning when and how to share data widely, as well as when it erodes competitive advantage. This may well be the most complex and sophisticated strategic challenge that business leaders face as the data economy grows and deepens. Legislative change is the first step to address the data sharing challenge. We have seen this step taken by some countries in the region. However, more work is needed to realize this in practice to drive real change and help smart cities evolve to data-driven cities.

The value of data can grow immensely when shared with other organizations.

If enterprises within the Middle East are to capitalize on this exponential growth in opportunity, they must strengthen the level of customer trust in their organizations. They will have to shore up the data privacy policies and governance that feed AI projects. This new AI world is all about convergence, either through emerging technology, data, or skills. Enterprises must leverage the power of these exponential technologies, transforming business processes and delivering value at every touch point.

Eighty-three percent of Torchbearer CxOs are pursuing a singular advantage based on trusted data, acknowledging that data helps enterprises create a strategic advantage in strengthening the level of customer trust. Globally, an average of only 52 percent of executives identified data availability as a barrier.³²

Learning from AI innovators

In our earlier global studies “Fast start in cognitive innovation” and “Accelerating enterprise reinvention,” we identified a specific group of business leaders around the world that we termed cognitive (or AI) innovators—those that rate especially high across several specific AI-related metrics. To help better understand how others might replicate the success of these leaders, we analyzed what the AI innovators are doing differently across five specific dimensions—familiarity with AI technologies and concepts, leadership in innovation, recognition of the importance of AI capabilities to their organizations, willingness of their industry to embrace AI, and demonstrable actions advancing their AI journeys.³³

The innovators group within our sample is relatively small—only 18—representing approximately 10 percent of all executives surveyed globally, and only 6 percent of those in the Middle East. AI innovators are especially concerned about the dearth of AI skills available in the economy. But unlike others, they are confident in their abilities to recruit and build them.

Egypt start-up community focuses on AI

Egypt houses a small but burgeoning startup community focusing on AI technologies and applications. MIT Media Lab spinoff, Affectiva, has offices in both Cambridge and Cairo. Affectiva employs AI to identify and measure human emotion through sensing and analyzing facial expressions, which can be used to target and refine content specific to target individuals and demographics.³⁴ In 2018, South Korean giant Samsung acquired Egyptian AI startup, Kngine, to improve its virtual assistant Bixby.³⁵

Ninety-four percent of Middle East innovators reported that employee skills will need to change as a result of advancing AI technologies, compared to 64 percent of executives in the Middle East overall, and 68 percent of global executives. Remarkably, 100 percent of AI innovators in the Middle East indicated they already have the necessary expertise in-house to implement AI within their organizations, compared to fewer than 50 percent of executives in the Middle East generally and 57 percent globally.

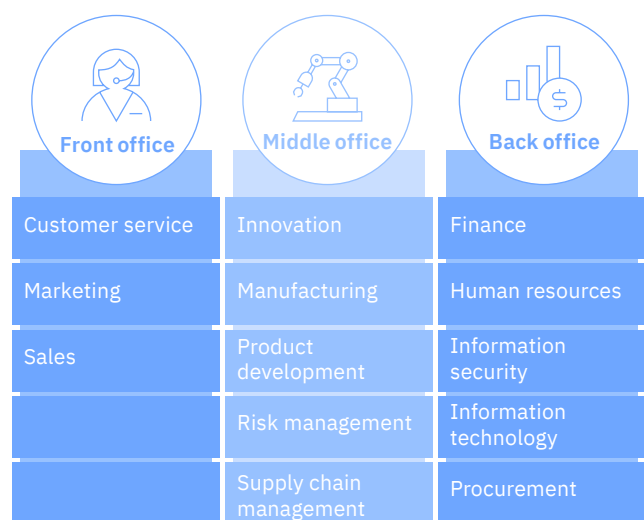
Unsurprisingly, Middle East innovators also see value from their investments tapping into the power of data in its multiple forms. Ninety-four percent of Middle East AI innovators perceive value from structured and unstructured data, compared to 57 percent overall in the Middle East and 63 percent globally.³⁶

To better understand how executives might better roll out AI across their organizations, we also examined AI enterprise impact at a business-function level. Thirteen business functions were considered, from sales and marketing through to finance and IT. We also examined sub-functions within each of the 13 overarching functions, which allowed development of a comprehensive prioritization map of AI investments in businesses and the economy as a whole (see Figure 5).³⁷

Applied to the front office, and consistent with some of the examples outlined earlier in this paper, AI systems can support deeper customer engagement by learning in real time and constantly improving the way it predicts, anticipates, and interacts. By so doing, AI can help improve customer satisfaction and retention by deepening individual customer relationships, freeing employees to focus on higher-value activities.

Figure 5

Application of AI across the enterprise



Source: IBM Institute for Business Value analysis.

In the middle office, AI can enable faster, better, more data- and analysis-informed decision making, reducing human error and expanding the potential for innovation. And in the back office, AI can significantly improve productivity by automating repetitive tasks and improving governance.

Based on analysis of our survey results, Middle East executives see the most value from AI coming from its application in enterprise supply chains, enhancing trust in the type, quantity, and quality of goods purchased, delivered, received, and invoiced, as well as reducing working capital requirements.

Marketing functions came second in anticipated value from AI, helping organizations more accurately identify target audiences and leverage a variety of channels for campaigns. Third most important for Middle East executives was sales functions—increasing efficiency and cross-sell and up-sell opportunities through richer contextual understanding—followed by manufacturing functions and information security.

AI, when applied to information security, can enable more faster, more reliable fraud detection.

Indeed, information security has risen in importance among executives around the world and is now cited as the single most important business challenge among CEOs and other executives in countries as different as the United States and China.³⁸ AI applied to information security can enable faster, more reliable detection of fraud or other activities across structured and unstructured data and potentially save thousands of staff-time hours, freeing personnel to focus on more business-critical initiatives, including threat detection and response (see Figure 6).

Figure 6

AI priorities by function of Middle East executives



Source: IBM Institute for Business Value analysis.

Enabling Middle East AI leadership

To accelerate application of AI to their organizations, business leaders can pursue a three-phase approach.

Phase 1: Envision

- Build an 18-to-24-month AI strategy with a clear set of initiatives that pave the way for smaller, more exploratory investments in AI. However, a long-term AI vision must be considered to realize ROI
- Apply a targeted operating model and governance that support the AI strategy defining your enterprise or business unit reinvention case, key performance indicators, and targets
- Identify regional capabilities in which to leverage for your AI initiatives and incorporate new ways of working based on cross-functional teams, skill sets, and complementary partner ecosystems. Prepare your organizational culture to adapt to a “fail fast” mentality

Phase 2: Ideate

- Conduct thorough, periodic assessments of the AI market, target users, needs, and more. Apply this user-centric approach to educate the rest of the enterprise on new AI capabilities
- Create common AI use cases and applications, design basic standards and architectural considerations tailored to your organization, and align individual AI initiative business cases with the broader reinvention case
- Define future experiences, end-to-end processes, and enabling capabilities that AI can use to facilitate and design your future business and technical architecture—based on the impact of AI capabilities

Phase 3: Execute

- Design and execute AI pilots with agility and with limited risk to existing customers and operations to address specific business challenges and demonstrate value by measuring performance indicators
- Use a lean governance model to periodically review progress and value, and an iterative approach to prototyping, building, testing, and launching new AI capabilities
- Monitor AI business case value realization, provide ongoing feedback on market receptivity, and use that input to make decisions to either terminate or scale AI initiatives

Capitalizing on AI

AI represents an opportunity to not only transform private and public sectors, but promises benefits to citizens that could be profound in realizing individual ambitions affordably and at scale. But AI is nothing without data, which has become one of the most valuable assets an organization can hold.

One of the biggest challenges today is that very few organizations possess a complete understanding of what data they have, how they might use it, and how to realize its true value in an AI-enabled economy. For AI to be truly successful, organizations must recognize the symbiotic relationship between AI and data. Moreover, economies will operate best when governments and enterprises share a common vision of AI's potential, with ownership, accountability, and governance clearly defined, underpinned robust ethics—and the trust that will grow because of it.

By critically assessing where the most value might be derived quickly and readily from its AI investments, Middle East businesses and governments have the opportunity to position themselves firmly at the center of a dramatically expanding AI opportunity.

Research methodology

2018

The IBM Institute for Business Value, in cooperation with Oxford Economics, surveyed 5,001 executives globally across 18 industries, including leaders of government departments and educational institutions. Roles of responding executives included C-suite members—CEOs, CMOs, CFOs, COOs, CIOs and CHROs—as well as heads of customer service, information security, procurement, product development, sales functions, and others.

These executives were from more than 40 countries including nearly 4 percent (n=200) from Middle East (UAE, Saudi Arabia, Egypt, and Qatar).

2016

The IBM Institute for Business Value, in cooperation with Oxford Economics, surveyed 6,050 executives globally across 18 industries, including leaders of government departments and educational institutions. Roles of responding executives included C-suite members—CEOs, CMOs, CFOs, COOs, CIOs and CHROs—as well as heads of customer service, information security, procurement, product development, sales functions, and others.

These executives were from more than 40 countries including nearly 5 percent (n=300) from Middle East (UAE, Saudi Arabia, Egypt, Kuwait, and Qatar).

About the authors



Ian Fletcher

[linkedin.com/in/ian-fletcher-b242403](https://www.linkedin.com/in/ian-fletcher-b242403)
twitter.com/IanMFletcher04
fletcher@ae.ibm.com

Ian Fletcher is a Research Lead for IBM Institute for Business Value MEA involved in leading thought leadership research and C-suite program across MEA. More recently, Ian has recently completed his substantial research on the impact of change in the Fourth Industrial Revolution looking at the convergence of our physical, digital and biological worlds and its effect on society and business.



Anthony Marshall

bit.ly/AnthonyMarshall
twitter.com/aejmarshall
anthony2@us.ibm.com

Anthony Marshall is Senior Research Director for the IBM Institute for Business Value. Anthony is responsible for directing thought-leadership research on a variety of issues related to the public and private sectors.



Brian Goehring

goehring@us.ibm.com
[linkedin.com/in/brian-c-goehring-9b5a453](https://www.linkedin.com/in/brian-c-goehring-9b5a453)

Brian Goehring is an Associate Partner and the AI Lead for the IBM Institute for Business Value, where he brings over 20 years' experience in strategy consulting with senior-level clients across most industries and business functions. He received an A.B. in Philosophy from Princeton University with certificates in Cognitive Studies and German.



Tarek Saeed

[linkedin.com/in/tarek-saeed-a17a506](https://www.linkedin.com/in/tarek-saeed-a17a506)
tarek.saeed@ae.ibm.com

Mr. Saeed is the Chief Artificial Intelligence Officer of IBM Middle East and responsible for spearheading AI technologies across all aspects of the business. Mr. Saeed is a thought leader in the field of AI and distinguished data scientist and is a senior advisor to the government sector on artificial intelligence programs and strategic initiatives.

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- 38 IBM Institute for Business Value analysis based on unpublished information.

Appendix

Numerous initiatives have been already launched as a result these strategic pillars, (see details below):

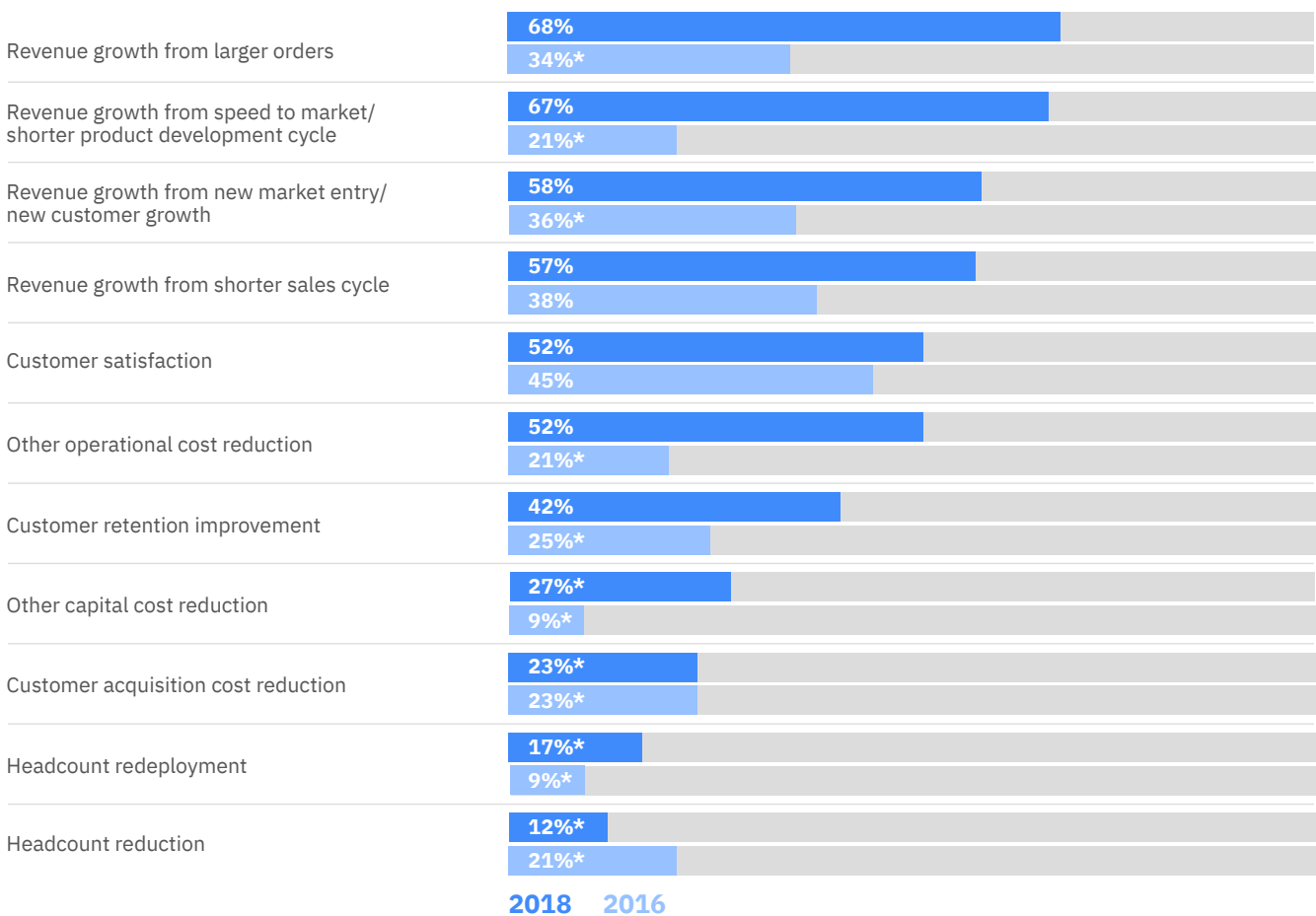
Topics	Initiatives	Sponsor	Details
Governance	AI Minister	UAE Government	https://uaecabinet.ae/en/details/cabinet-members/his-excellency-omar-bin-sultan-al-olama
Competition	AI & ROBOTICS AWARD FOR GOOD	DFF	https://www.dubaifuture.gov.ae/our-initiatives/ai-robotics-award-for-good
Building capabilities	UAE AI Camp	UAE AI Minister	https://www.aicamp.ae
Building capabilities	AI Course British University of Dubai	ICT Fund	https://www.thenational.ae/uae/the-degree-of-the-future-uae-s-first-artificial-intelligence-course-is-launched-1.751738
Strategic plan	UAE National AI Program Brain: Building a Responsive Artificial Intelligence Nation.	UAE Government	https://ai.gov.ae
Strategic plan	UAE AI Strategy 2031	UAE Government	http://www.uaesai.ae/en
Strategic plan	Dubai's Autonomous Transportation Strategy	DFF	https://www.dubaifuture.gov.ae/our-initiatives/dubais-autonomous-transportation-strategy
Strategic plan	THINK AI INITIATIVE	UAE AI Minister	https://www.mocaf.gov.ae/en/media/news/uae-government-launches-%27think-ai%27-initiative
Building capabilities	IBM AI Lab	Smart Dubai	http://www.itp.net/618241-smart-dubai-and-ibm-to-establish-data-science-lab
Strategic plan	UAE INDIA AI BRIDGE	UAE AI Minister	https://www.thenational.ae/uae/uae-india-artificial-intelligence-bridge-formed-1.754872
Governance	UAE AI COUNCIL	UAE AI Minister	https://www.khaleejtimes.com/news/general/uae-council-for-ai-holds-its-first-meeting-in-dubai
Governance	UAI	UAE AI Minister	A four-criteria evaluation mechanism for AI applications in the UAE (No source other than this mention https://ai.gov.ae/uae-ai-initiatives)
Governance	Global Ai Governance Forum	UAE AI Minister	https://www.worldgovernmentsummit.org/api/publications/document?id=ff6c88c5-e97c-6578-b2f8-ff0000a7ddb6
Building capabilities	UAE AI and Robotics Course	Ministry of Education	https://www.edarabia.com/uae-students-will-join-artificial-intelligence-robotics-contents
Building capabilities	The Artificial Intelligence Program for UAE Government Employee	UAE AI Minister	A 1 year AI training program designed for government employees (No source other than this mention https://ai.gov.ae/uae-ai-initiatives)
Building capabilities	HCT cooperate with Oracle for national capacity building and student training in Artificial Intelligence	Ministry of Education -Higher College of Technology	https://ai.gov.ae/graduating-75-male-and-female-students-who-completed-a-specialized-ai-training-program-from-hct-developed-with-oracle
Building capabilities	Minister of State for Artificial Intelligence, MBRSG sign MoU to empower future leaders	UAE AI Minister	https://ai.gov.ae/minister-of-state-for-artificial-intelligence-mbrsg-sign-mou-to-empower-future-leaders
Building capabilities	RIT Dubai and Smart Dubai Partnership on the MSc Data Analytics	Smart Dubai / IBM	https://www.rit.edu/dubai/node/3707

Country perspectives

Egypt

Figure 1

Motivation for AI investments across the region



Egypt

Figure 2

Barriers to AI investment

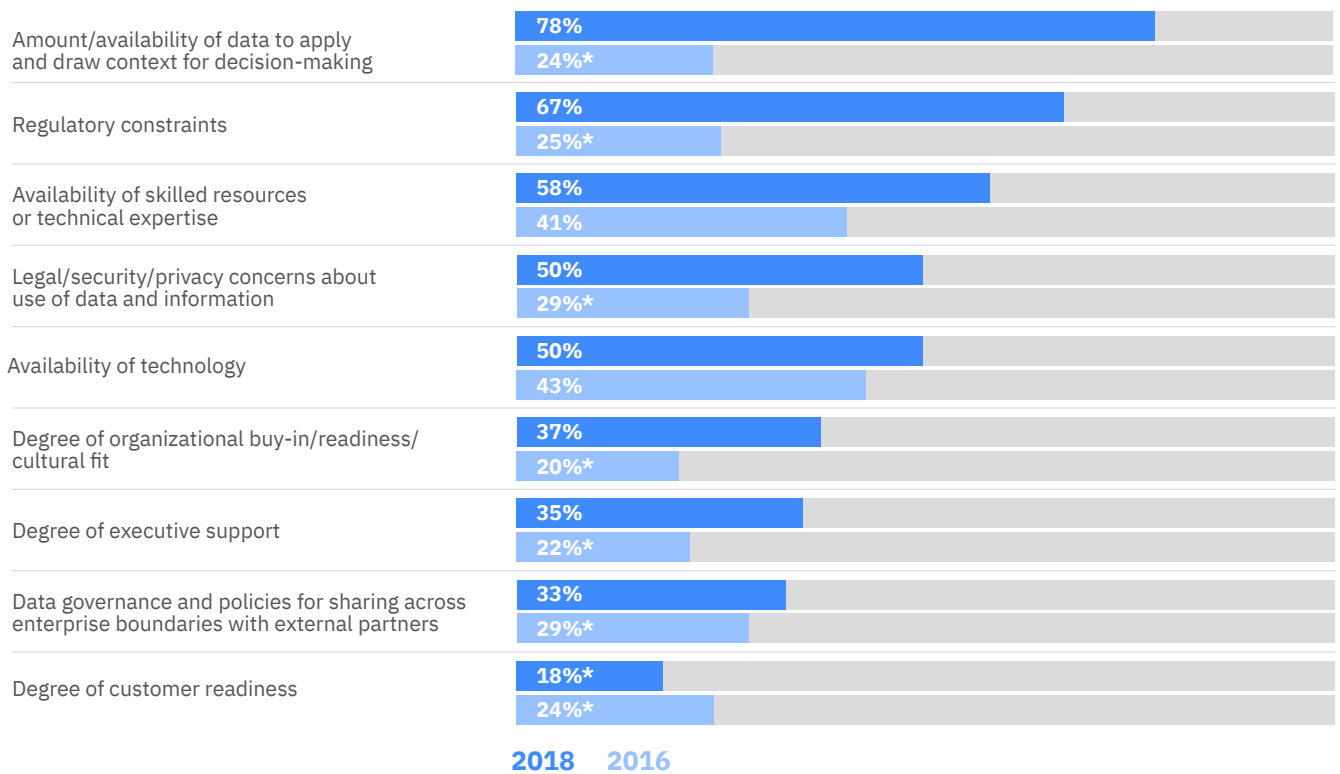
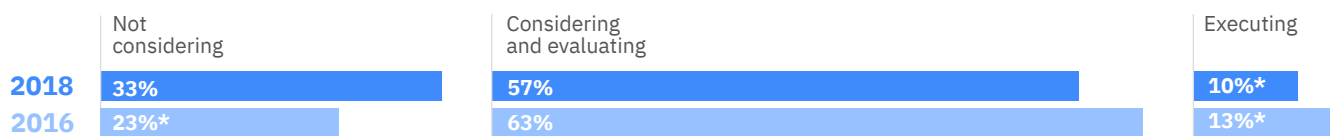


Figure 3

Extent of AI commitment

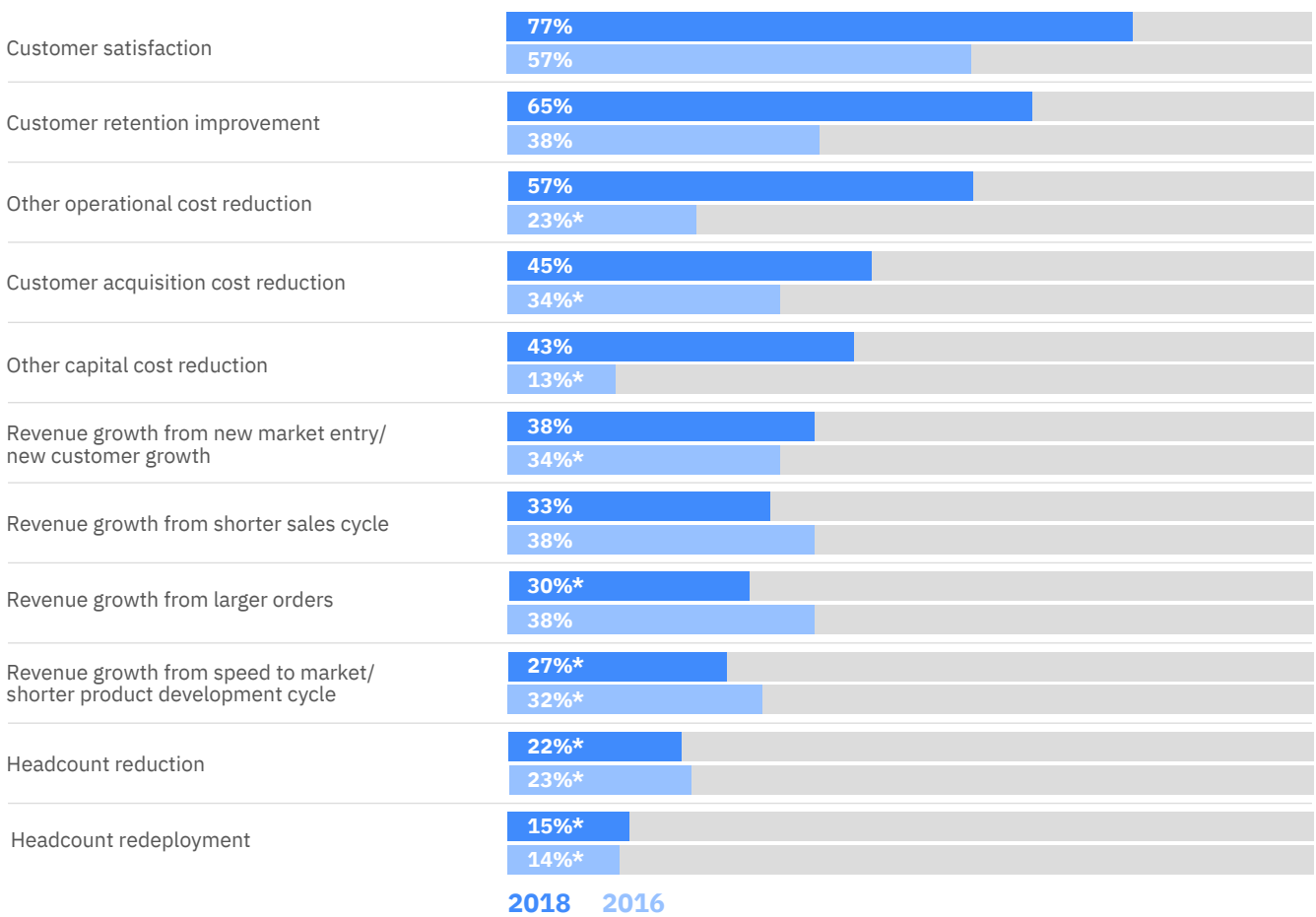


Source: IBM Institute for Business Value global survey of artificial intelligence, 2018.
* Count is less than 20.

Kingdom of Saudi Arabia

Figure 1

Motivation for AI investments across the region



Kingdom of Saudi Arabia

Figure 2

Barriers to AI investment

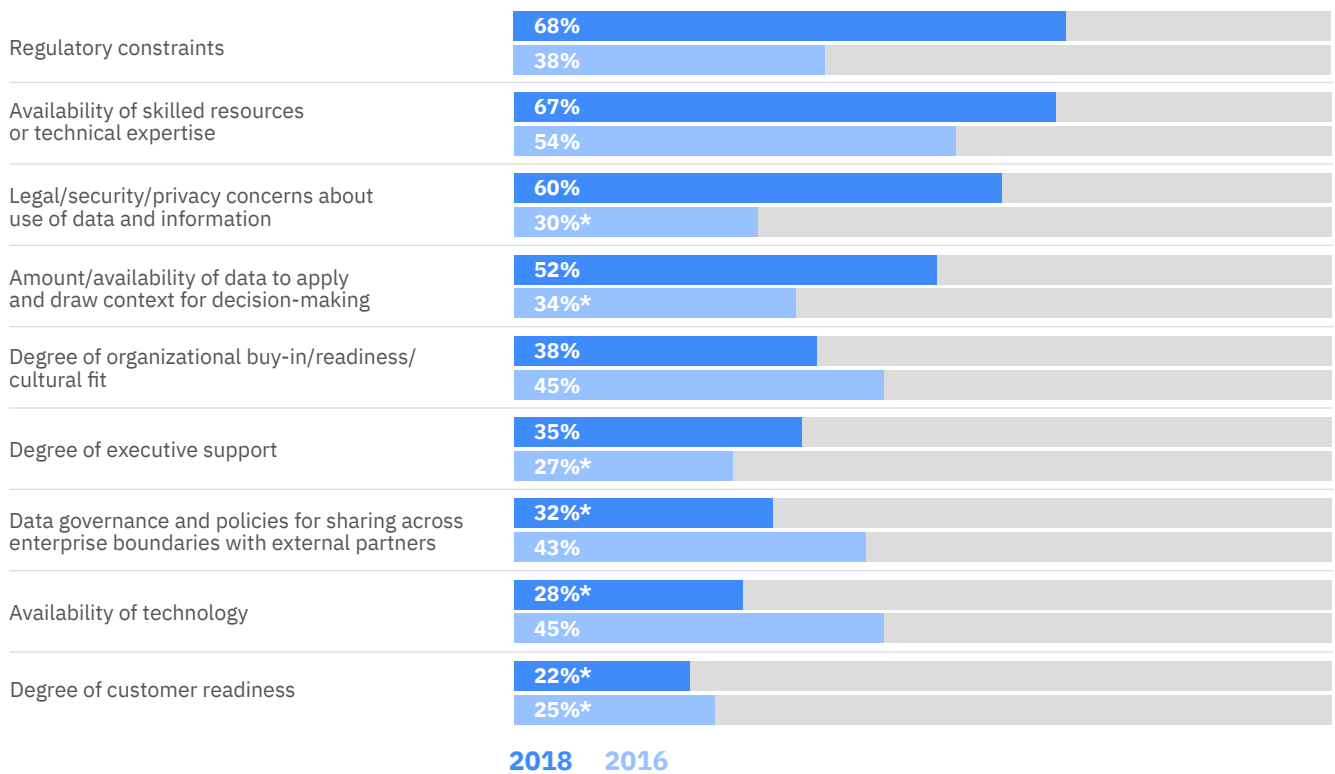
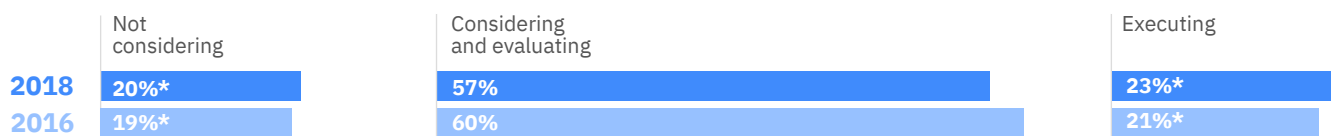


Figure 3

Extent of AI commitment



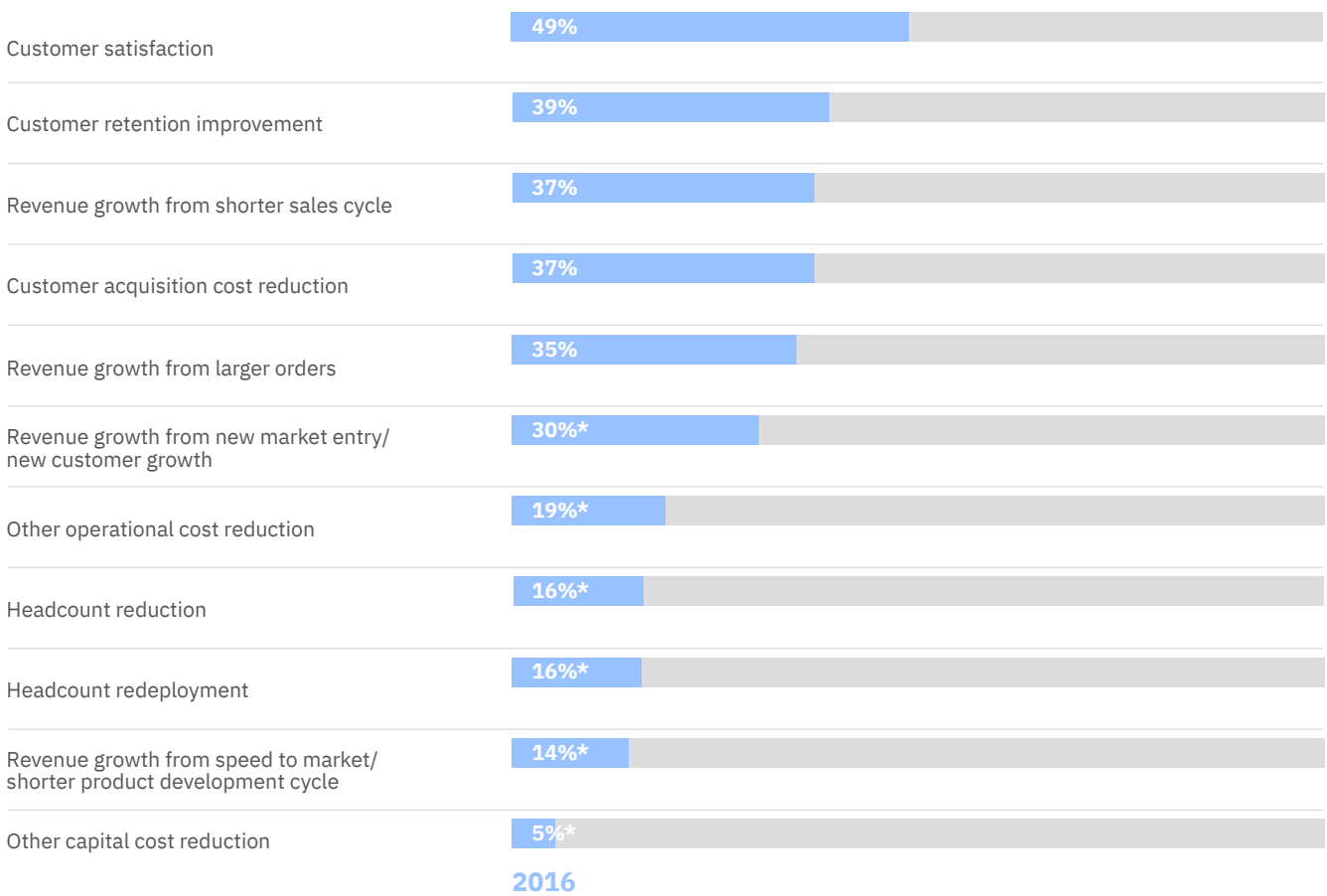
Source: IBM Institute for Business Value global survey of artificial intelligence, 2018.
* Count is less than 20.

Kuwait

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Figure 1

Motivation for AI investments across the region



Kuwait

Figure 2

Barriers to AI investment

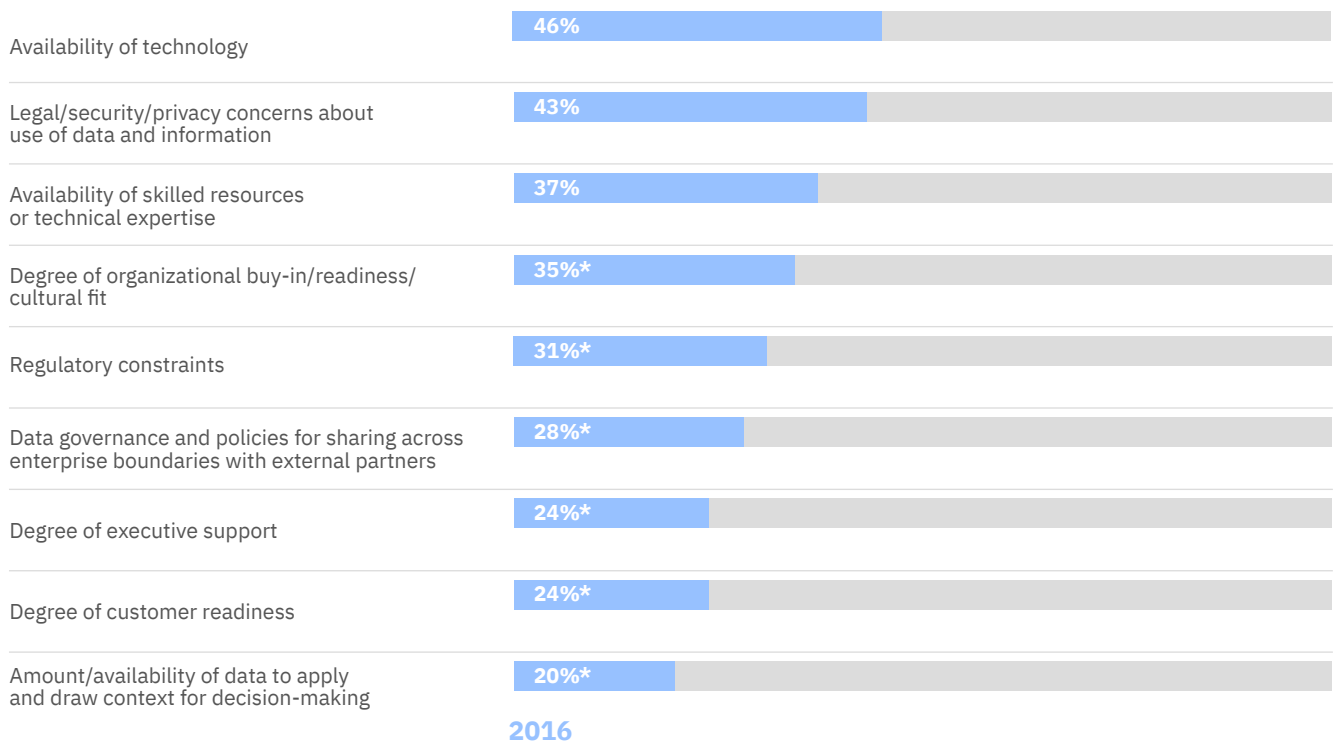
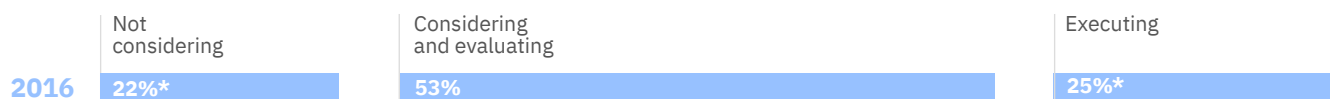


Figure 3

Extent of AI commitment

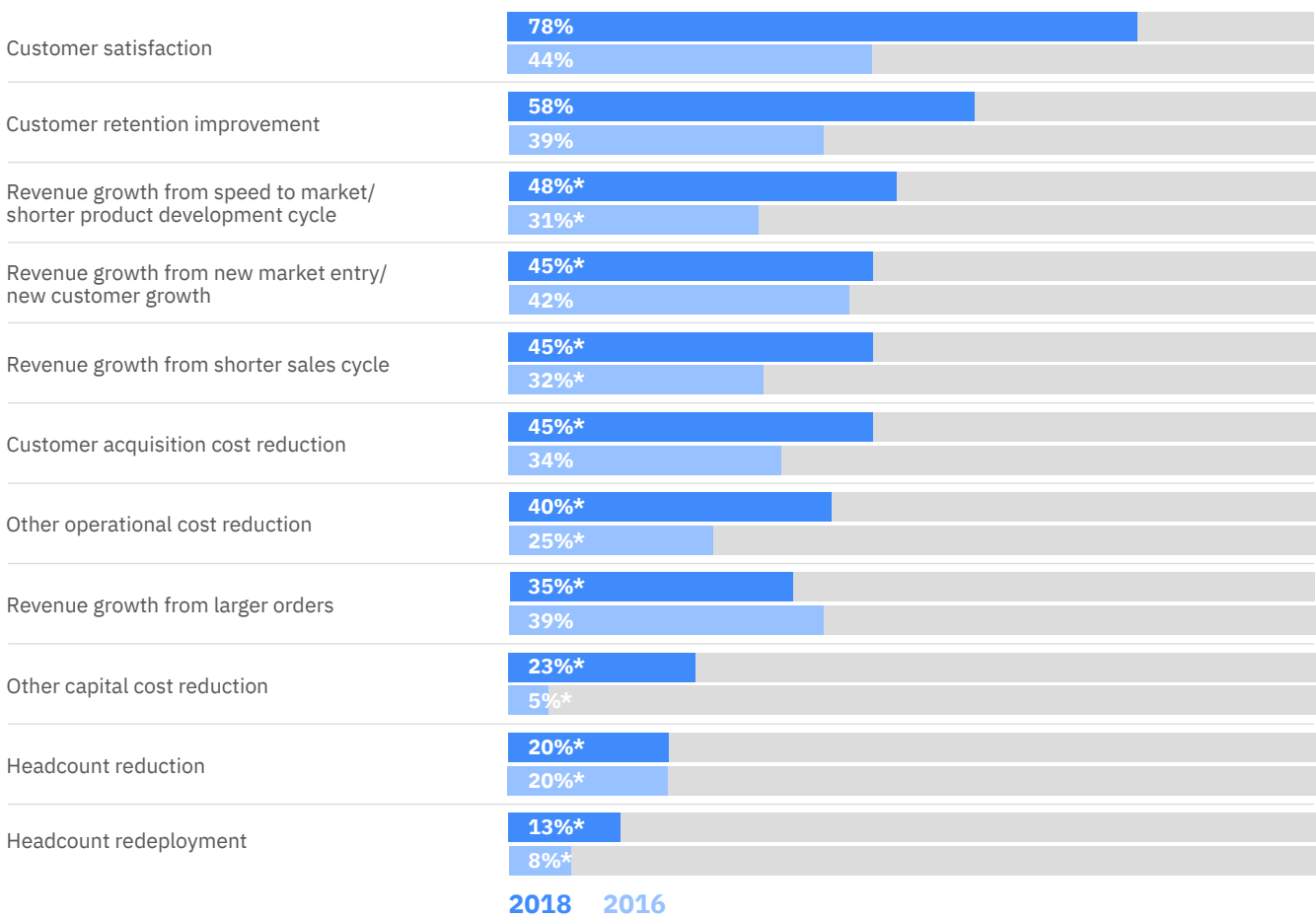


Source: IBM Institute for Business Value global survey of artificial intelligence, 2018.
* Count is less than 20.

Qatar

Figure 1

Motivation for AI investments across the region



Qatar

Figure 2

Barriers to AI investment

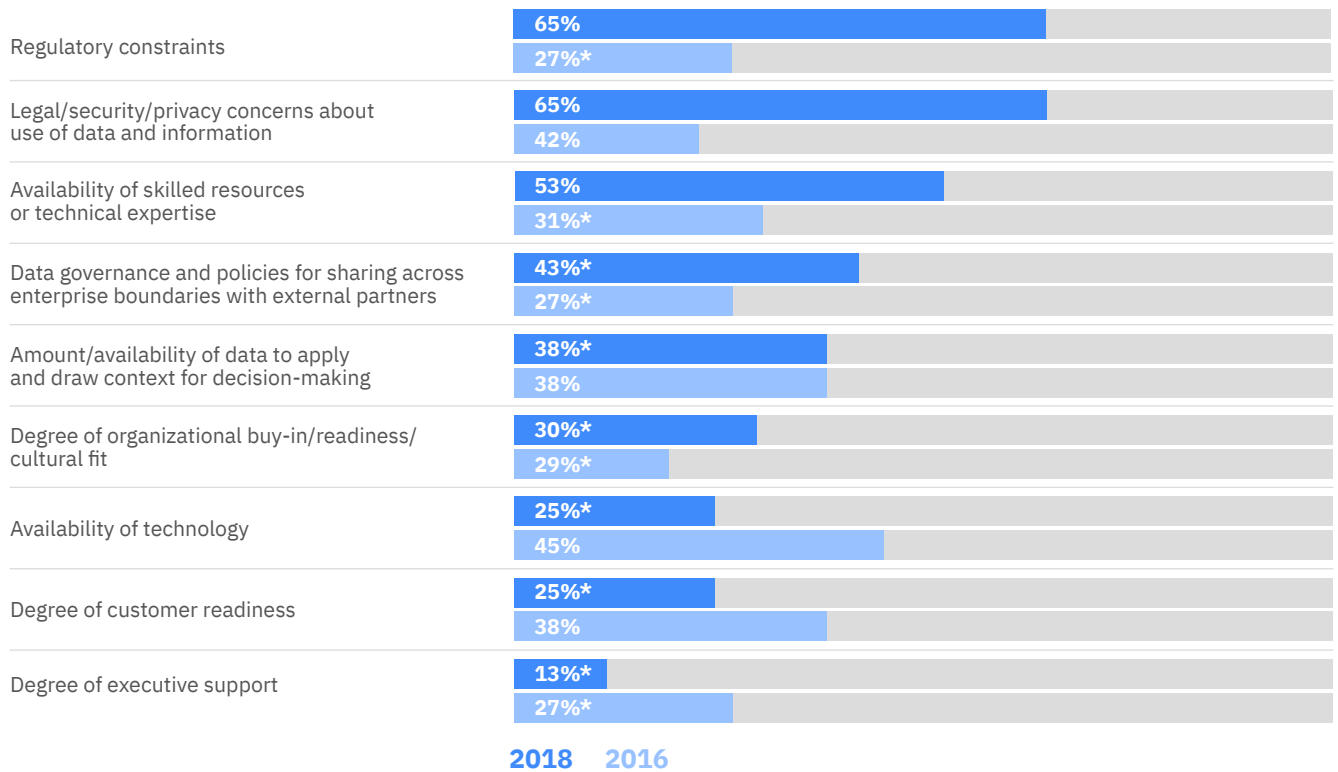
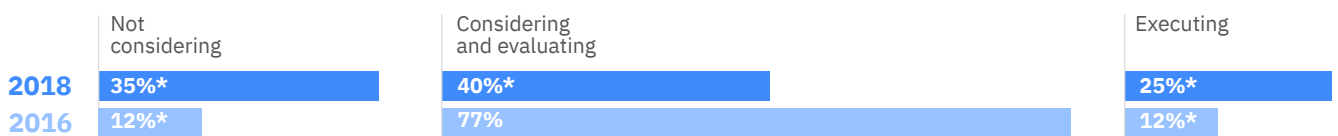


Figure 3

Extent of AI commitment

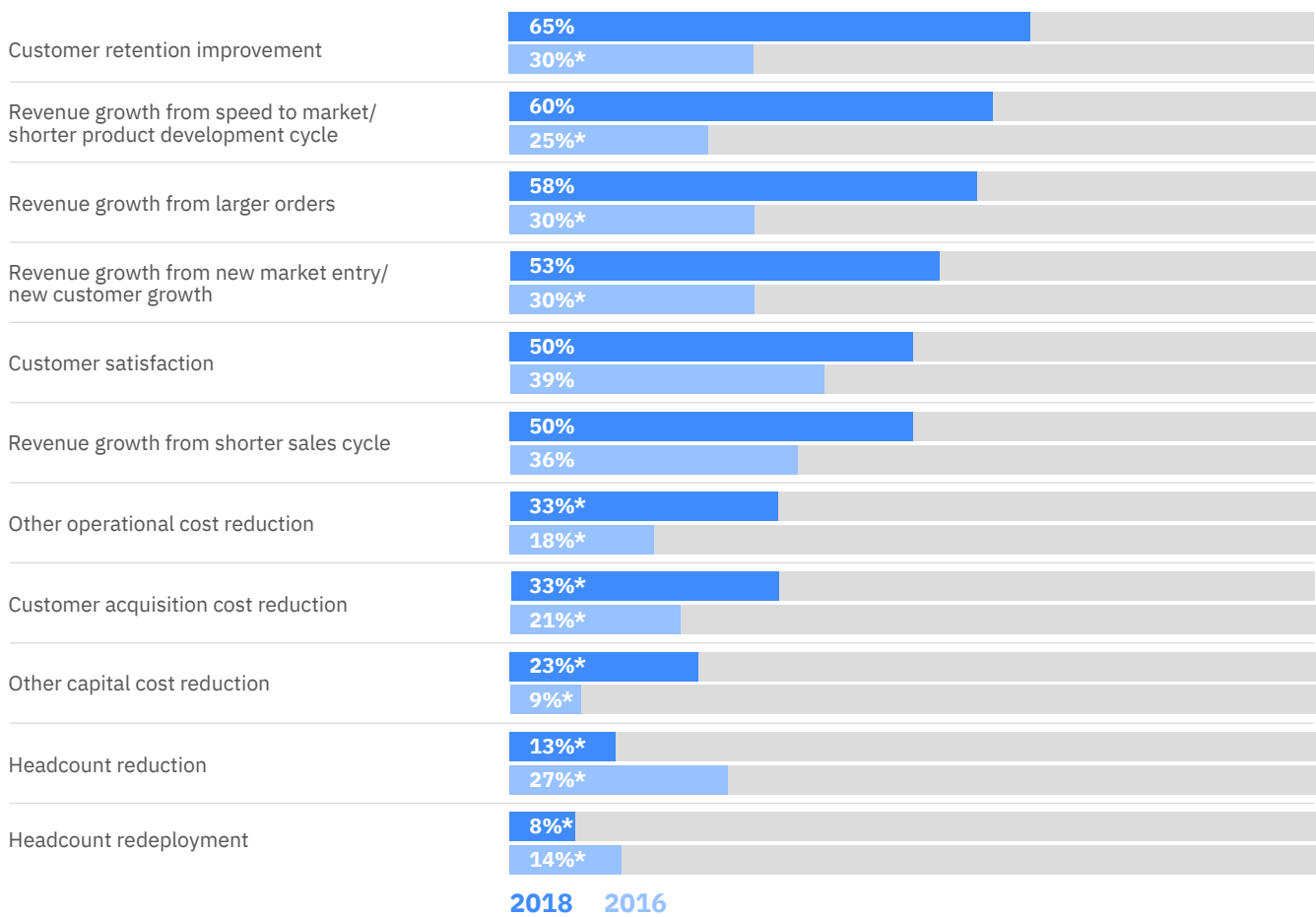


Source: IBM Institute for Business Value global survey of artificial intelligence, 2018.
* Count is less than 20.

UAE

Figure 1

Motivation for AI investments across the region



UAE

Figure 2

Barriers to AI investment

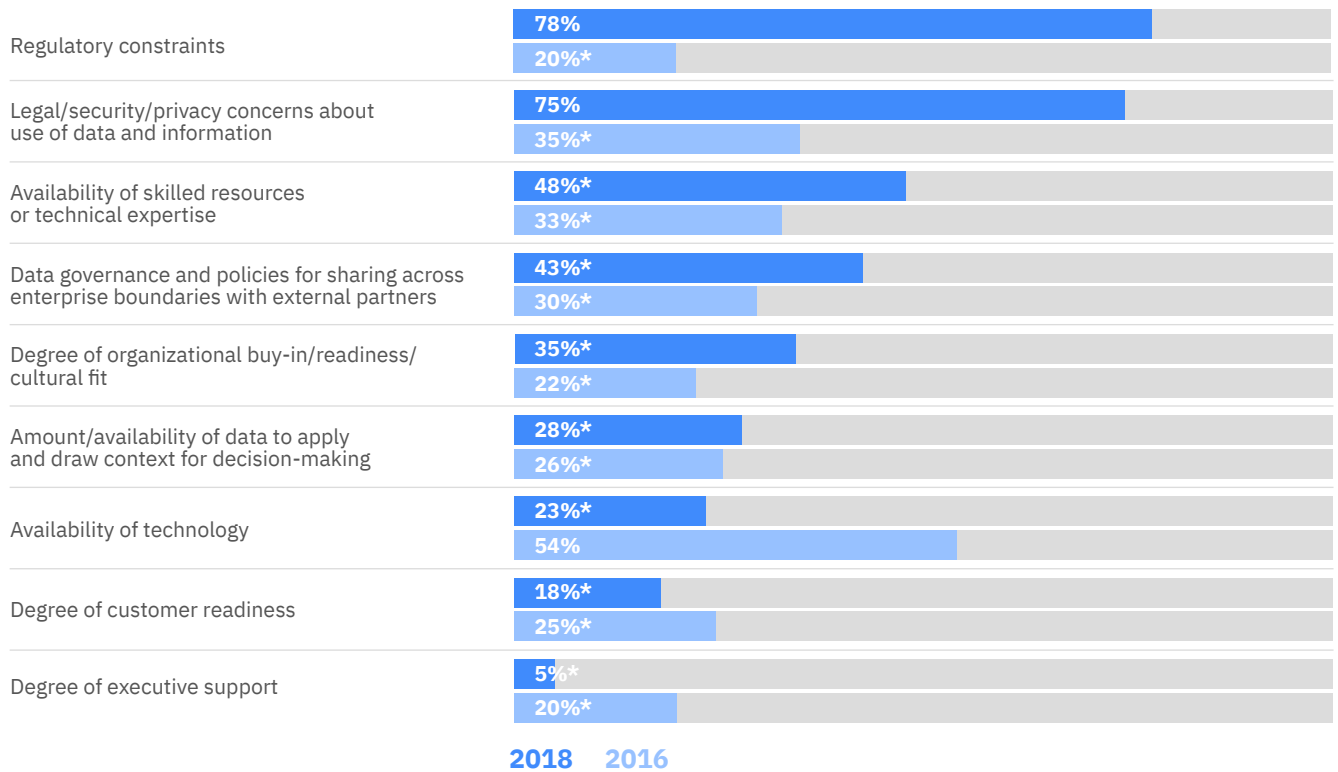
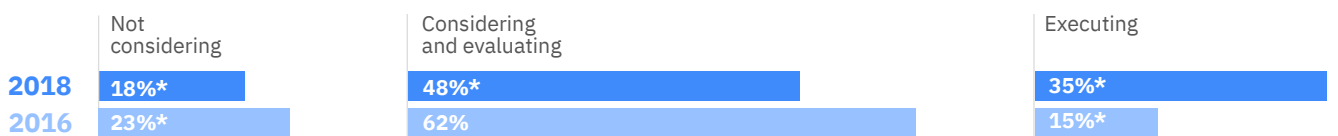


Figure 3

Extent of AI commitment



Source: IBM Institute for Business Value global survey of artificial intelligence, 2018.
* Count is less than 20.

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