



# E V O L U T I O N

THE ARTIFICIAL INTELLIGENCE IMPERATIVE 2018:  
ASIA PACIFIC & JAPAN REPORT

# Data That's Got Your Back: Quality Insights and Global Competitive Advantage with AI and Data Intelligence

Senior leaders know AI-driven data intelligence is crucial to their future success. Amid AI enthusiasm, leaders are also aware that overcoming adoption challenges is key, according to a global survey of more than 2,300 business leaders worldwide.



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The Future is Bright for AI



Organizations are sitting on more data than ever before. Although the quantity is rising by the day, the resources available to translate them into meaningful insights are limited. Market speed is quickening, and customer behaviors and expectations are evolving at a rapid pace. In order to make a meaningful impact on business success, data needs to be collected, analyzed and actioned quickly. When we take into account the vastness of the average organization's data store, this feels close to impossible. Not without a next generation technology like artificial intelligence (AI) to assist.

MIT Technology Review Insights conducted a new survey to explore global attitudes towards current and future data initiatives and the role of AI. The survey, conducted in association with enterprise data flash storage company, Pure Storage, gathered responses from over 2,300 global business and IT leaders.

Within the survey, MIT gathered respondents in seven Asia Pacific markets on their thoughts and expectations about AI. The areas covered were China; Singapore and Indonesia; Hong Kong; Japan; South Korea; Taiwan; Australia and New Zealand. The results in all areas were broadly in line with the Asia Pacific average. The percentage of agreement in surveys in all areas are based on the top two box scores—strongly or slightly agree.

The Asia Pacific region was largely found to consider data a key component in delivering better results for clients and customers. According to 87 percent of respondents, business decision-making and business growth are the two secondary benefits of data initiatives (SEE FIGURE 1). When considering practical data applications for business, 72 percent agreed it was more likely to be used for strategic decision making, 68 percent felt it could be used for marketing improvements and 65 percent would use it to support new business developments.

▼ FIGURE 1  
Data has influence within the business...

87%

say data is the foundation to making business decisions.

↓ Automotive: 42%

...and influencing potential growth

88%

agree that data is key to delivering better results for clients and/or customers.

87%

find that collecting data is important to business growth.

# 79%

agree that ensuring their business is using relevant and quality data sources is a challenge.

# 85%

say AI is important for analytics, to aid greater efficiency and less human error.

# 81%

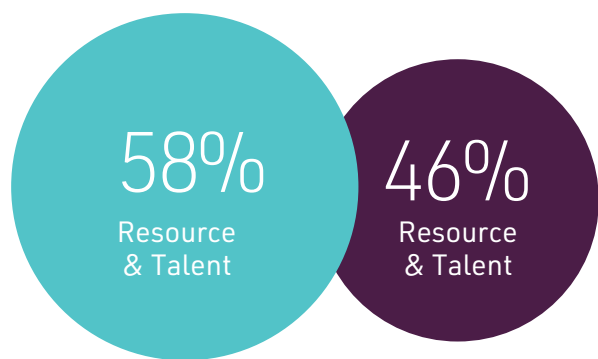
find that human intelligence is required to interpret data and make decisions.

Interestingly enough, positivity regarding future developments in data is divided. Business leaders with full involvement in data strategy are more accepting of its role at the forefront of business growth (84 percent) compared to those with only partial involvement (72 percent). This is likely to be attributed to the practical concerns of implementing the technology, a task typically delegated to individuals with less data strategy involvement.

For business leaders in Asia Pacific, AI provides the potential for higher quality data insights—a main priority for them in comparison to other global regions. When asked, 79 percent of them said it was a challenge to find relevant, high-quality data sources (**SEE FIGURE 2**). They also recognize that the margin for human error may affect how accurately data is interpreted and 85 percent of respondents see next generation technology as a solution to improve both accuracy and speed.

Almost all survey respondents from Asia Pacific (86 percent) agreed that speed is key in the receipt, analysis and interpretation of data. The majority are focused on using and analyzing their data with optimum efficiency, but when you consider the sheer volume that any one organization holds, this is no simple feat.

Irrespective of its obvious appeal, to employ AI purely for data accuracy is to only utilize one aspect of its ability. To take full advantage of the benefits and competitive edge this technology can offer, Asia Pacific organizations will need to look beyond automation and towards a future of other applications and possibilities.



Barriers to better management of data

Barriers to AI adoption

▲ FIGURE 2

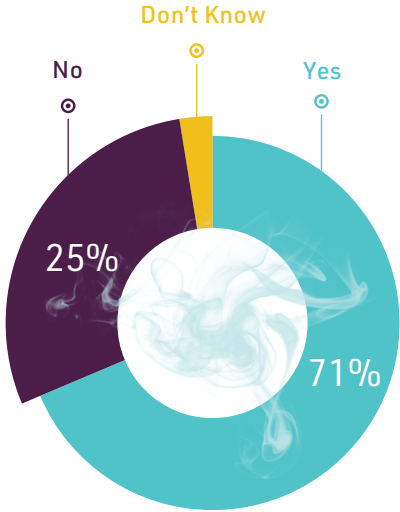


# Exploring the Possibilities of AI Beyond Automation

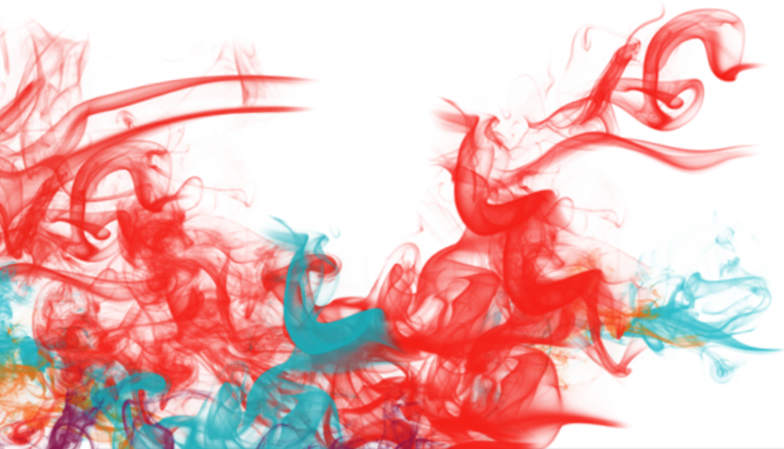
AI technology might still be in its infancy, but it's something many of us can already identify with. Its definition is so broad that 71 percent of Asia Pacific survey respondents believe they are currently using it or have partnered with an AI company to access its capabilities (SEE FIGURE 3).

At present, the term 'AI' is being used to describe technologies as simple as on-site chat bots and as large-scale as automotive robotics. These two use cases are linked by automation—the delegation of repetitive tasks to a technology which emulates human performance. This is the crux of the appeal for most Asia Pacific organizations, who hope to use AI to gain faster, more accurate data insights. The majority of survey respondents (85 percent) said that they felt it was critical to analyze data in large quantities to gain competitive advantage. In truth, it can also provide a competitive edge in various other ways.

▼ FIGURE 3  
Despite being at an early stage of the story, many believe they already use AI in some way



71%  
are currently using AI (in their organization), or partnering with companies to access their AI capabilities.



An approach adopted by some leading organizations showcases the use of data as a means of launching better customer-focus initiatives (SEE FIGURE 4). By using these insights to learn more about their customers, they're able to improve the overall experience and modify their approach to meet individual needs. This is a strategy many customers have come to expect and think nothing of swapping from one company to another to get what they need. In fact, customer expectations often outstrip what businesses are able to offer. Awareness over the use of data by the competition hasn't escaped the attention of Asia Pacific organizations – 89 percent of them said that they believe large/global corporations are increasingly using it in new and innovative ways. Organizations that aren't quick off the mark regarding next generation technology adoption could run the risk of falling below customer expectations.

For Asia Pacific organizations, using data to drive customer focus is not an unknown concept. Most survey respondents (87 percent) said that a wealth of data would allow them to tailor their approach to customers and to improve experiences. They also stated that the ability to deliver better customer results was their first priority for data applications. When the concept of AI was added into the equation, even more became possible. According to 87 percent of Asia Pacific organizations, AI could help them dedicate additional time towards generating more effective customer selling techniques.

▼ FIGURE 4

## Many foresee increased creative and strategic customer-focus for the business

83%

agree they could dedicate more time to thinking creatively about the business challenges they (and their clients) face.

84%

agree they could think about how they can sell more effectively to customers.

↓ Healthcare: 33%

81%

agree they could develop new propositions for their customers.

↓ Automotive: 33%

↑↓ Significantly lower /higher vs global average (95% level)



# 79%

agree that they would be able to work on things they are passionate about.

▲ FIGURE 5

Customers aren't the only individuals having their expectations met through AI-led data intelligence. Employees can also benefit, as human resources are freed from repetitive tasks and channelled into specialized, in-depth work, adding value for both business and employee. Over three quarters of survey respondents said that AI would allow them to work on things they were passionate about (**SEE FIGURE 5**).

Combining AI's fast, logical, analytical abilities with the creative problem-solving skills of a human creates the ultimate recipe for dynamic, well-rounded business growth. In fact, 86 percent of Asia Pacific organizations claimed they'd use AI to dedicate more human resource towards thinking creatively about business challenges. This puts AI technology firmly in-line with the future agendas of Asia Pacific organizations.





# Challenges and Barriers to AI Adoption

Data is growing in quantity every year. Asia Pacific organizations agree that speed is everything when it comes to using data to gain a competitive edge, but with so much to sift through, additional support is needed. Organizations need to begin branching out into next generation technologies, beyond basic analytics.

The task of pushing an organization into the next phase of development often uncovers many challenges and concerns. When asked about their main barriers on the road to new technology adoption, Asia Pacific regions stated they had two: cost of technology and sourcing appropriate talent.

Of all the global regions surveyed, Asia Pacific organizations were the most concerned about cost. Globally it is one of the most prominent challenges faced by organizations who are looking into new technologies for business development. There were some survey respondents who thought that the complexity of AI machinery would make maintenance and repair very expensive. Although cost has been raised across all global regions as a concern, more respondents felt AI would lead to savings in the long term (**SEE FIGURE 6**). Respondents within the manufacturing industry stated it would help them save time and money. They also believed it would help them increase revenue and customer value by helping them develop new markets. These sentiments were echoed by respondents in the technology sector, who predicted they'd save through minimizing extra salaries.

## ▼ FIGURE 6

AI seen as a way to increase efficiency while maintaining quality, that will lead to savings



“Artificial intelligence can reduce the need for humans to do drudge analysis, freeing them up to consider implications for decision-making.”

AUSTRALIA, GOVERNMENT

“Less reliant on humans, resulting in lesser possibility of error. Analysis can be done at a greater speed, with no fatigue and can be done 24/7.”

SINGAPORE, MANUFACTURING

“The data that is presented seems more accurate... It is easier and can minimise the cost of extra salary.”

INDONESIA, TECHNOLOGY HARDWARE/SOFTWARE

Resource and talent is a significant barrier for Asia Pacific organizations. Business leaders claim that it challenges initiatives for better data management (58 percent) and for the adoption of AI specifically (46 percent). In order to successfully implement and run the new technology, data and AI specialists may be needed – no simple feat when you consider the ongoing talent deficit within the current global hiring market.

Despite concerns, employee upskilling and training is imperative to business evolution and growth. It has also been proven to improve job satisfaction and increase tenure. Hiring new employees could be a good way to support this. When asked how they thought data could be used to help business direction, over half (55 percent) of survey respondents said it would focus internal resources, showing that the long-term effects make technology adoption far more beneficial. Not only this, but 85 percent of business leaders with full involvement in data strategy believed they would make new hires for data-related roles in the future and 82 percent said they were already doing this.

Survey responses show that Asia Pacific organizations do recognise the importance of data and the necessity of business technology evolution. Breaking through commonly held misconceptions about AI, its uses, and the cost versus the benefits, could help APAC businesses gain the advantage they are actively seeking.



## The Future is Bright for AI

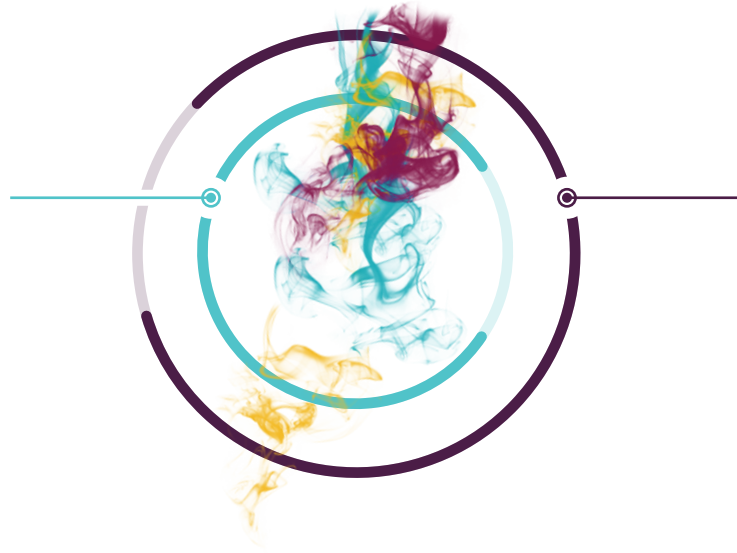
It's still early days for AI technology, but the future looks bright. Almost all Asia Pacific organizations (80 percent) revealed that they believe it will have a positive impact on their industry in the future and 84 percent believe it will be a game-changer in the way data is processed.

AI has the potential to level the playing field for smaller businesses and will give them a way to compete with larger organizations. This is a belief held by 78 percent of respondents. Many have gone on to say that creative data analytics could help small-scale businesses keep up with the extreme pace of change within the global marketplace and would ease the pressure they feel.

# 80%

agree that AI will be of most use to businesses that replicate tasks and rely on routine processes.

▲ FIGURE 7 ▲



# 81%

agree that there are legal and ethical implications of AI that still need to be clarified.

▲ FIGURE 8

It's also not surprising that businesses who typically engage in routine processes and replicated tasks could also make huge leaps in efficiency with the implementation of AI (SEE FIGURE 7). According to 80 percent of survey respondents, the technology would be of most use to these particular businesses.

That being said, the removal of repetitive tasks also raises some interesting ethical and legal arguments for 81 percent of Asia Pacific organizations (SEE FIGURE 8). They said that they believed AI would render repetitive or manual roles less relevant in the future. The counter argument is that automation can help enrich job roles. It has the potential to allow employees more time to focus on business innovation, according to 85 percent of survey respondents. APAC business leaders with full involvement in data strategy said they felt there were clear opportunities for higher skilled jobs and that they believed data would support people in their current roles. Just under three quarters of respondents (71 percent) felt that there would be a

limit to how much data could accomplish without human intervention, a view supported by 81 percent of respondents, who still felt human intelligence would be necessary for interpretation and decision-making. This opens up a new debate: employing AI technology within business infrastructure could allow humans to be more human.

Overall, it appears that the Asia Pacific region is most keen to keep up with trends and competition through the routine exploration of new technologies (such as AI). The survey showed that 82 percent of Asia Pacific organizations were doing this compared to 80 percent of organizations within the Americas and 73 percent of EMEA organizations. When asked about AI in particular, the general outlook is positive – among those not currently adopting AI solutions, 66 percent said they felt positively about AI's impact on the future of business. Could AI implementation sit on the business agendas of most Asia Pacific organizations in the near future? It looks very possible indeed.

# Market Perspectives

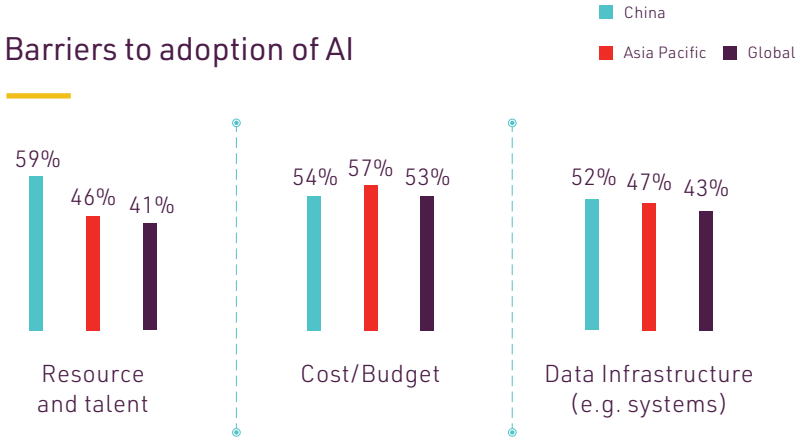
## China

In China, 100 respondents were surveyed. The top 3 barriers to adopting AI for companies or industries are resource and talent (59 percent), cost and budget (54 percent), and data infrastructure (e.g. systems) (52 percent).

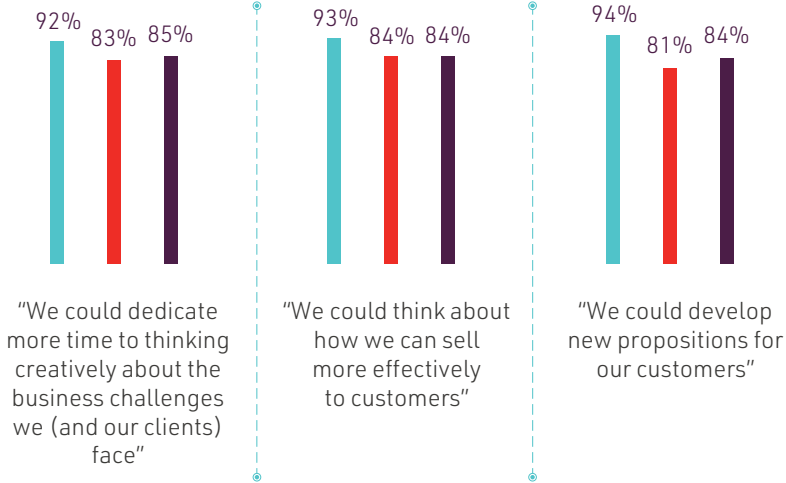
Ninety-two percent of Chinese leaders agreed that AI would give more time to think creatively about business challenges (9 percentage points higher than the Asia Pacific average). Ninety-four percent also agreed that they could develop new propositions for their customers (13 percentage points higher than the Asia Pacific average), and 93 percent agreed that they could sell more effectively to customers (9 percentage points higher than the Asia Pacific average).

One respondent, from China’s financial services industry, listed the benefits: “Can reduce labour costs, provide the most sensible data analysis, reduce errors and quickly and accurately analyse data, and increase business speed”. Another respondent, from the education industry, saw benefits in efficiency: “Analysis and storage of data is faster and more efficient, which leads to making the right decisions”.

## Barriers to adoption of AI



## Creative & strategic customer-focus



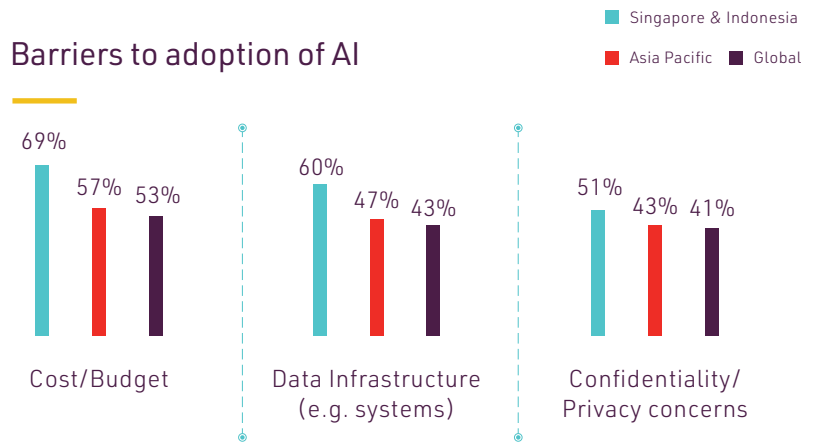
## Singapore + Indonesia

In Singapore and Indonesia, 150 respondents were surveyed in total. Here, the top 3 barriers to adopting AI in companies or industries are cost and budget (69 percent, which is 12 percentage points higher than the Asia Pacific average), data infrastructure (60 percent, and 13 percentage points higher than the Asia Pacific average), and confidentiality and privacy concerns (51 percent).

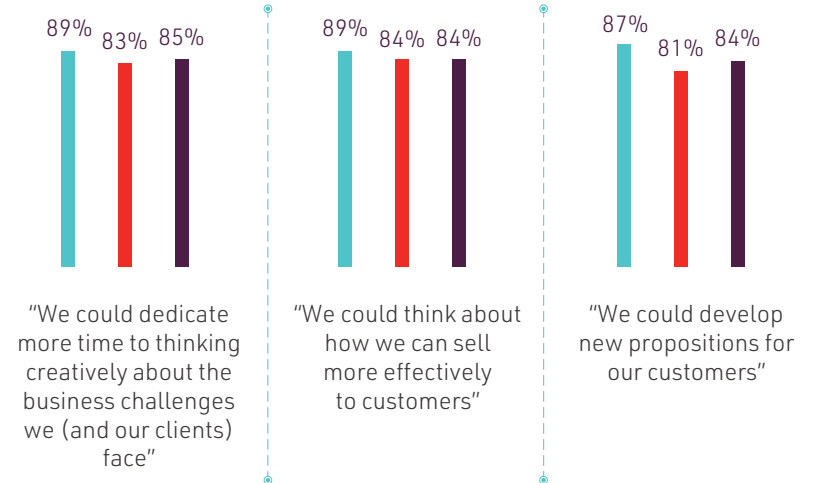
However, 89 percent of leaders agree that AI would give more time to think creatively about business challenges. Eighty-seven percent also agreed that they could develop new propositions for their customers, and 89 percent agreed that they could sell more effectively to customers.

Enthusiasm was presented through some of the comments. One respondent, from Indonesia's technology hardware/software industry explained that: "By using AI assistance, the data that is presented seems more accurate although it is being monitored. It is easier and can minimise the cost of extra salary". Another respondent from Singapore's Oil/Gas/Energy industry commented on the use of AI within human resources: "With the use of AI, human resources are freed to do more urgent and critical functions within the organization that would further enhance its competitive and productive edge, and to be highly relevant in the industry".

## Barriers to adoption of AI



## Creative & strategic customer-focus





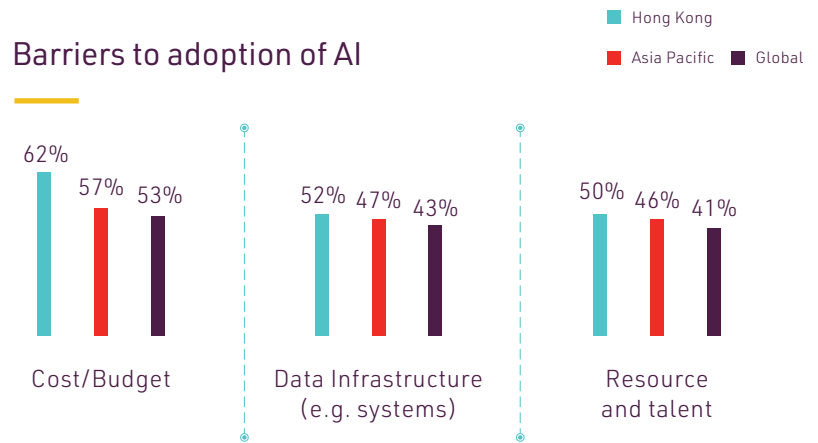
## Hong Kong

MIT Technology Review surveyed 50 respondents in Hong Kong. The top 3 barriers to adopting AI in Hong Kong companies or industries are cost and budget (62 percent), data infrastructure (52 percent), and resource and talent (50 percent). (One caveat: The respondent base sizes here were fairly low.)

Eighty-four percent of leaders agree that AI would give them more time to think creatively about business challenges. In addition, 78 percent also agree that they could develop new propositions for their customers, while 84 percent agreed that they could sell more effectively to customers.

One respondent from Hong Kong’s manufacturing industry listed the benefits of AI: “Can help analyse large amounts of data and information, reduce the time for making decisions and plans, can make appropriate plans for production and product development, the production and operating costs can also be accurately calculated”. Another respondent, from Hong Kong’s financial services industry added: “Able to analyse larger volumes of data with greater depth and provide more meaningful analysis”.

## Barriers to adoption of AI



## Creative & strategic customer-focus



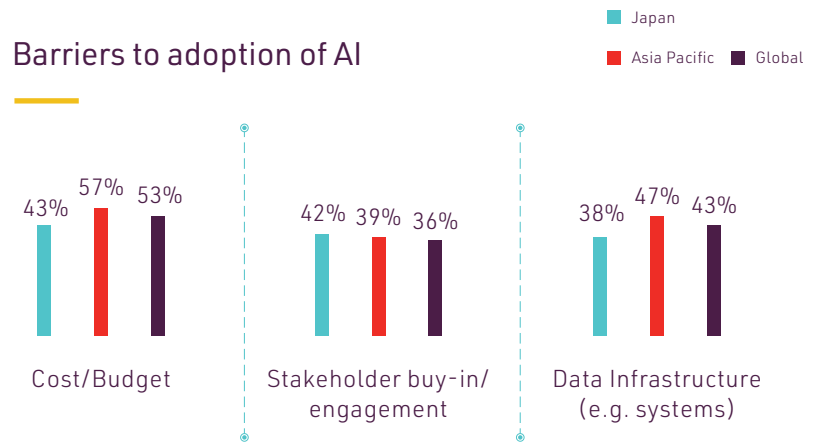
## Japan

In Japan, 120 respondents were surveyed. The top 3 barriers to adopting AI in companies or industries are cost and budget (43 percent), stakeholder buy-in or engagement (42 percent), and data infrastructure (38 percent). It is notable here that the cost and budget barrier is 14 percentage points lower than the Asia Pacific average.

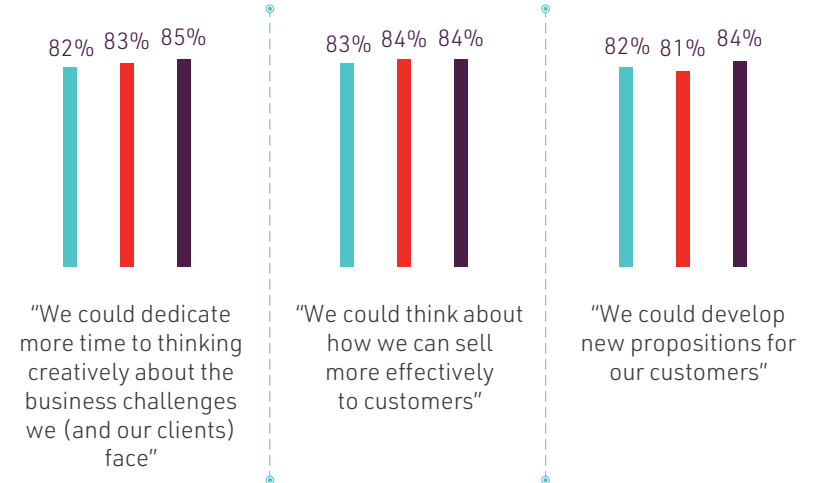
Overall, 82 percent of leaders agree that AI would give more time to think creatively about business challenges. Eighty-two percent also agree that they could develop new propositions for their customers, in addition to 82 percent agreeing that they could sell more effectively to customers.

One respondent from Japan's financial services industry stated that: "It is possible to make preparations to provide innovative business solutions for constant revenue growth". Additionally, a respondent from the technology industry commented on the productivity of AI: "Produces highly productive results, and profits can be obtained by upgrading processes and using innovative agricultural machinery. This is changing industrial machinery in recent history".

## Barriers to adoption of AI



## Creative & strategic customer-focus



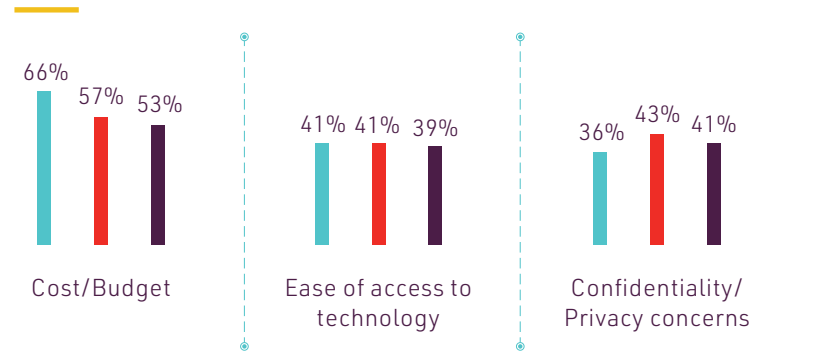
## South Korea

In South Korea, 102 respondents were surveyed. The top 3 barriers to adopting AI in South Korean companies or industries are cost and budget (66 percent), ease of access to technology (41 percent), and confidentiality or privacy concerns (36 percent).

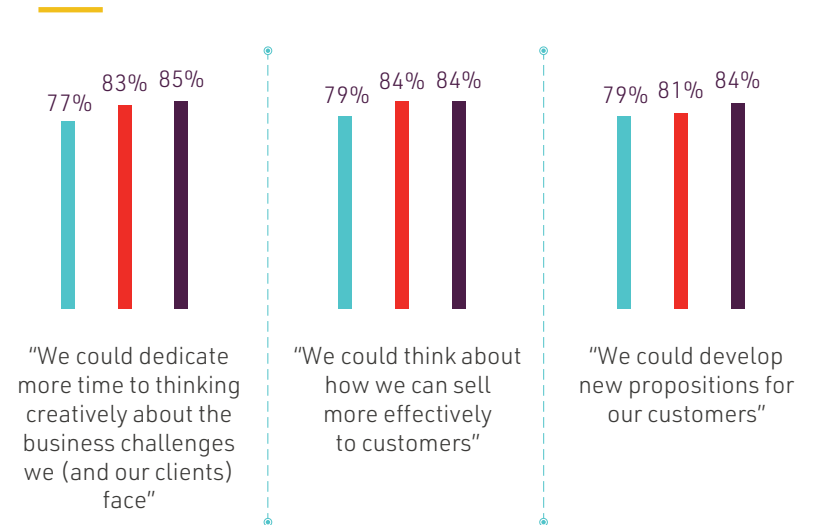
Seventy-seven percent of leaders agree that AI would give more time to think creatively about business challenges. Seventy-nine percent also agree that they could develop new propositions for their customers, while 79 percent also agree that they could sell more effectively to customers.

One respondent, from South Korea’s manufacturing industry, made the following comment: “Increases capacity for re-investment because the manpower and budgets necessary for data analysis can be reduced”. Another respondent from the healthcare industry commented on the efficiency AI brings to the workplace: “It can reduce human work by processing a vast amount of data quickly and suggesting the right directions for the solution, which allows humans to concentrate more on creative thinking and tasks”. While another respondent in the manufacturing industry also noted the strategic benefits of AI: “Contributes to strategy establishment through the analysis of numerous data”.

## Barriers to adoption of AI



## Creative & strategic customer-focus



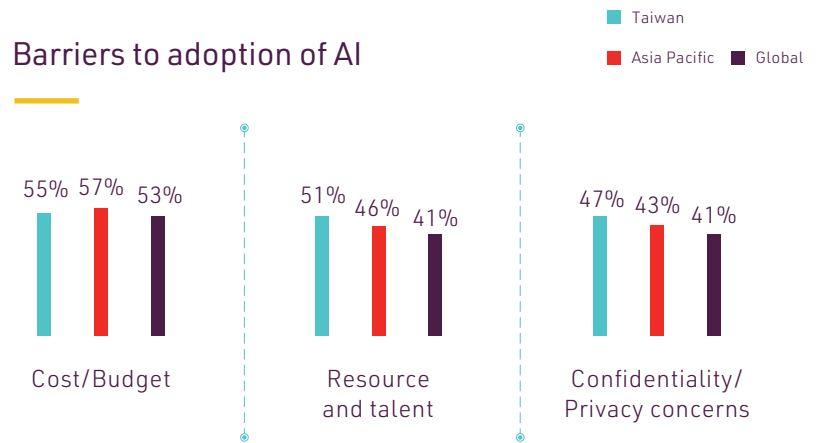
## Taiwan

Fifty-one respondents were surveyed in Taiwan. The top 3 barriers to adopting AI are cost and budget (55 percent), resource and talent (51 percent), and confidentiality or privacy concerns (47 percent). (One caveat: The respondent base sizes here were fairly low.)

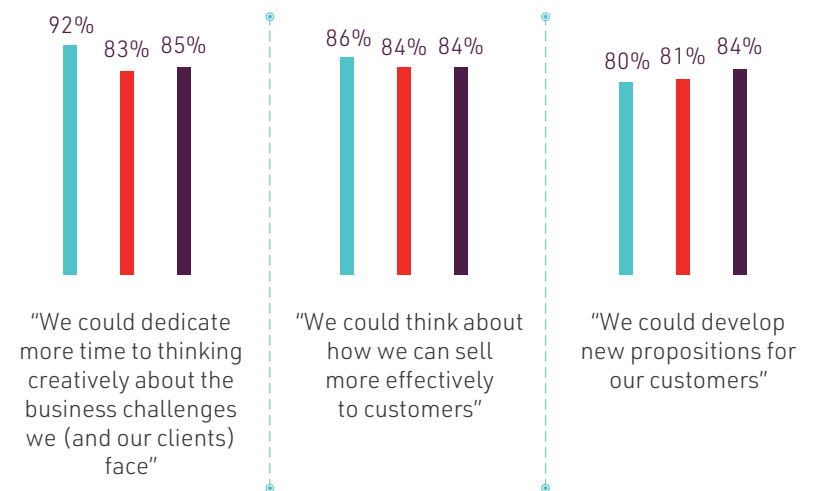
However, 92 percent of leaders agree that AI would give more time to think creatively about business challenges. Eighty percent also agree that they could develop new propositions for their customers, while a further 86 percent agree that they could sell more effectively to customers.

“AI influences future modes of transaction, AI can provide decision-makers different levels of research results in order to make the best decisions” wrote one respondent from Taiwan’s technology industry. A respondent from the manufacturing industry commented on AI’s ease of use: “Can simplify the assisting personnel’s learning curve, and can maintain the integrity of a large amount of data”. Another respondent from the manufacturing industry also commented that AI can: “Compensate for manpower shortage; can also make more accurate and objective judgement, to assist decision makers in making new decisions”.

## Barriers to adoption of AI



## Creative & strategic customer-focus



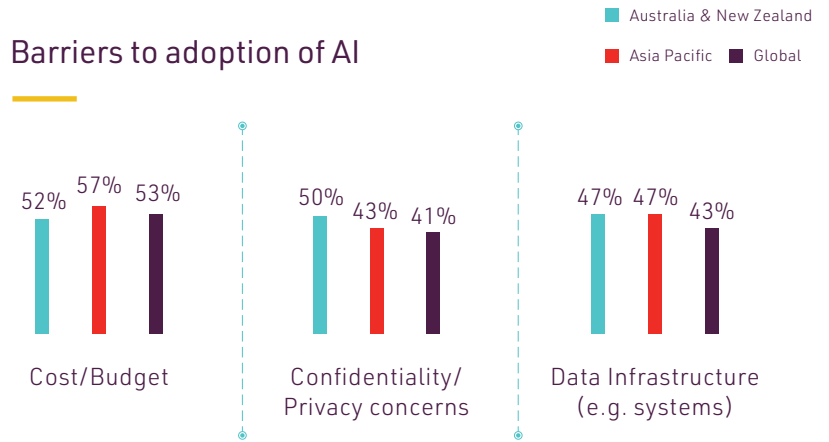
## Australia + New Zealand

In total, 111 respondents were surveyed in Australia and New Zealand. The top 3 barriers to adopting AI in respondents' companies or industries are cost and budget (52 percent), confidentiality or privacy concerns (50 percent), and data infrastructure (47 percent).

Overall, 66 percent of leaders agree that AI would give more time to think creatively about business challenges. This agreement score is 17 percentage points lower than the Asia Pacific average. A further 66 percent also agree that they could develop new propositions for their customers (15 percentage points lower than the Asia Pacific average), as well as 74 percent agreeing that they could sell more effectively to customers (10 percentage points lower than the Asia Pacific average).

"It will allow companies to be technologically advanced and get ahead of their competitors, by allowing them to receive data and analyse results" said one respondent from Australia's manufacturing industry. Moreover, another respondent from New Zealand's healthcare industry described the ways in which AI can benefit the healthcare industry: "Virtual Health Assistants can proactively help patients in a number of ways in our industry, also AI has been utilized to improve medical diagnosis. For example, AI aided medical image diagnosis from Beijing-based artificial intelligence high-tech company, Infervision, is being used to improve reading CT scans and x-rays".

## Barriers to adoption of AI



## Creative & strategic customer-focus





# Research Methodology

The research was conducted online by MIT Technology Review Insights between February 20, 2018, and March 29, 2018. The survey targeted senior executives who are fully or partially responsible for sourcing or using data, or managing those who source or use data in their organization. Respondent industries included Automotive (10%), Manufacturing (19%), Healthcare (8%), Financial Services (20%), Government / Education (11%), Communications/ Media (5%), Oil/ Gas/ Energy (8%), Technology Hardware /Software (19%).

## Regions covered were as follows:

- Americas (Argentina, Brazil, Canada, Colombia, Mexico, U.S.)
- Europe, Middle East, and Africa (EMEA) (Benelux, including Belgium, Netherlands, Luxembourg; France, Germany, Italy, Spain, Switzerland, Russia, U.K., South Africa, United Arab Emirates)
- Asia Pacific and Japan (APJ) (Australia, China, Hong Kong, Indonesia, India, Japan, New Zealand, Singapore, South Korea)

A total of 2,357 questionnaires were completed, along with eight qualitative in-depth interviews.

## Definitions

**Data:** "For the sole purpose of this survey, when data is referenced, the definition is any data created by the organization that would benefit from segmentation and analysis."

**Artificial Intelligence (AI):** "AI is technology that appears to emulate human performance typically by learning, coming to its own conclusions, appearing to understand complex content, engaging in natural dialogs with people, enhancing human cognitive performance (also known as cognitive computing) or replacing people on execution of non-routine tasks."

