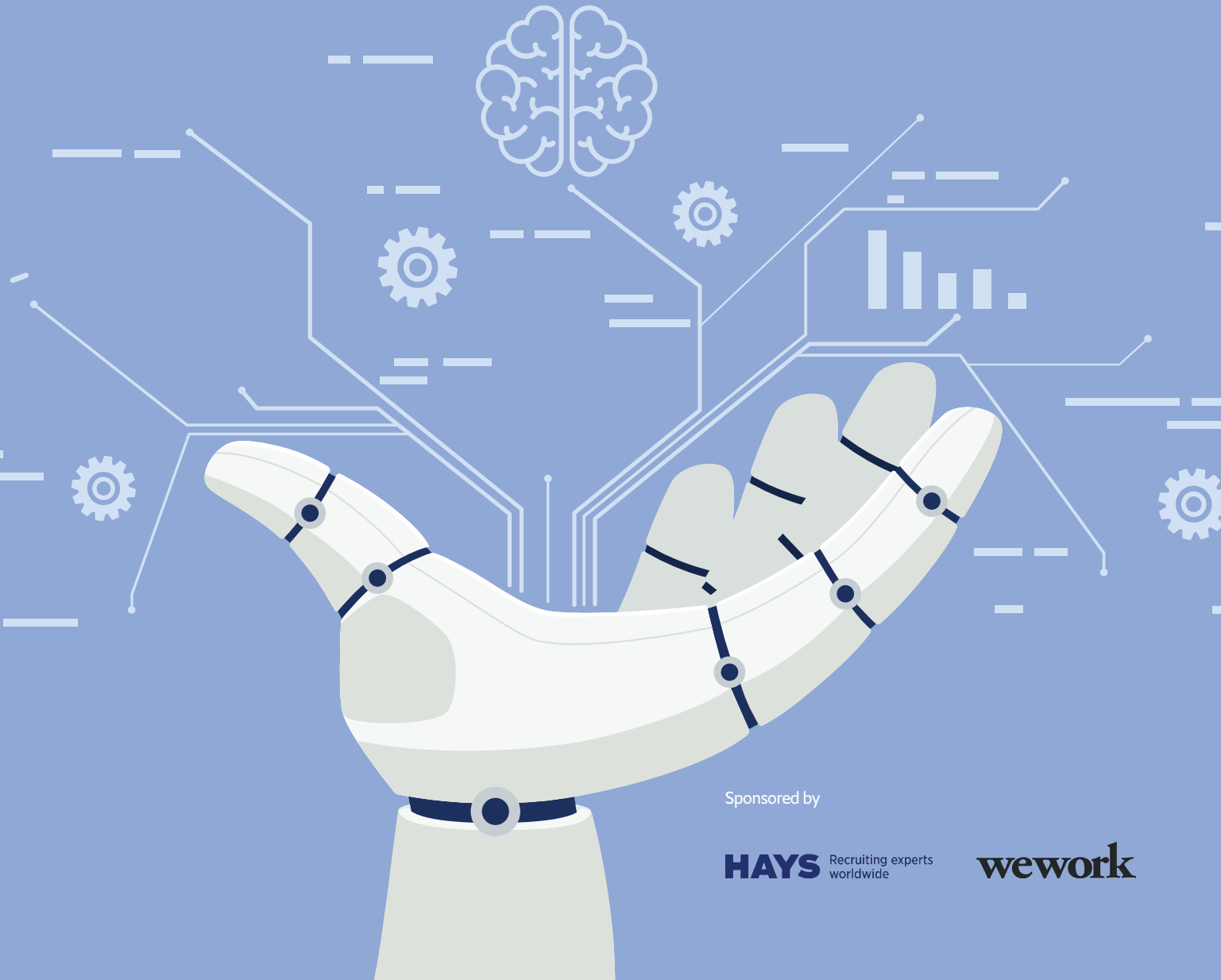


# AI, AUTOMATION AND THE FUTURE OF JOBS AND SKILLS

The role of the CEO in shaping tomorrow's workplace in Asia



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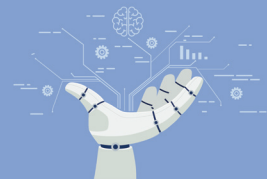
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## Preface

“AI, automation and the future of jobs and skills: The role of the CEO in shaping tomorrow’s workplace in Asia” is an Economist Corporate Network (ECN) management brief. It is based on a survey of the primary members (regional/country CEO/president) of the 500+ ECN clients based in the Asia-Pacific region, as well as discussions at focus groups conducted in Hong Kong, Shanghai, Singapore and Tokyo. The report was sponsored by Hays and WeWork. The findings and views expressed in this report are those of the ECN alone and do not necessarily reflect the views of the sponsors.

The report was written by Lauren Altria and edited by Florian Kohlbacher in Tokyo, with editorial input from Mary Boyd in Shanghai, Robert Koepp in Hong Kong and Pamela Qiu in Singapore. Gaddi Tam in Hong Kong was responsible for design.

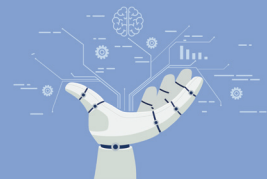
We would like to thank all the respondents and focus-group participants for their time and input.

October 2018

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# Contents

- 3 Key findings**  
A quick read of the brief and its findings
- 4 Introduction**  
Asia's business leaders share their thoughts on how AI and automation are affecting their businesses, workers and jobs
- 5 Perceptions of AI, automation and their impact**  
How do business leaders believe AI will shape the wider workforce and the nature of work itself?
- 9 Imagining the future of jobs and skills**  
How will AI and automation change the jobs and skills necessary for the future?
- 15 The role of the CEO in shaping the workplace**  
What strategies are businesses adopting to prepare for the workplace of the future, and how do business leaders position themselves within those strategies?
- 22 Appendix**



# Key findings

## A quick read of the brief and its findings

### We asked:

- What are business leaders' perceptions on the impact of automation and artificial intelligence (AI)?
- How will automation and AI reorient the way we work and the skills necessary in future?
- What obstacles do businesses face in preparing for the new world of work, and what are their strategies in dealing with them?
- How do business leaders position themselves in shaping the future workplace?

### We learn that:

- For businesses, AI represents the here and now. Perceptions are increasingly varied, but the majority of CEOs expect the full effects and scale to be felt within three years from now.
- Automation and AI are overwhelmingly identified as big opportunities for businesses, yet few CEOs feel highly prepared to deal with the technological transformations.
- CEOs believe that the impact of AI and automation on their businesses will result in improvements in productivity and efficiency. The impact on workers is conversely associated with threats to job and income security.
- CEOs are aware of how AI and automation are affecting work spaces, and employees' growing demand for flexible environments that reflect these changes and provide opportunities for constant learning.
- CEOs feel that their businesses lack the right structures to skill up their workforces effectively. The consensus among business leaders is the need for greater collaboration between businesses, governments and academic institutions.
- People skills remain the most important skill for the future, despite the growing need for data scientists to help to devise strategies centred on new technologies.
- CEOs realise that automation and AI are no longer the future. They are increasingly committed to strategies that accelerate their arrival, rather than soften their impact.

## Introduction

### Asia's business leaders share their thoughts on how AI and automation are affecting their businesses, workers and jobs.

AI and automation have penetrated almost every aspect of the new world of work. The fourth industrial revolution, which signals a massive technological disruption that will fundamentally alter humanity itself, has forced more and more businesses to embrace the mantra of “adapt or die”. Fast-paced and inevitable are the words now used to characterise the confluence of technologies over the past decade, and despite not knowing how the transformation will unfold, business leaders recognise that the physical world and the digital world are coming together. As a result, the response must be integrated, comprehensive and timely.

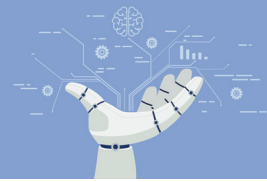
From their inception, AI and automation have been tied to a narrative centred on the displacement of humans. The dominant perception of AI and automation as forces that will disrupt and displace, however, is increasingly being contested. Many CEOs anticipate the opportunities that technology will bring to markets and societies constrained by acute demographic issues. Concerns about AI's threat to jobs, privacy and humanity are not without merit, yet the degrees to which they comport with reality vary across countries/regions and industries.<sup>1</sup> The overwhelming sense of optimism placed in AI and automation among the CEOs surveyed certainly signals a growing, or even natural, attitude to embrace and accelerate their arrival, despite the negative impact on workers that these technological shifts may initially bring.

But how exactly do business leaders believe AI will shape the wider workforce and the nature of work itself? What skills and attributes will be required to use, rather than be used by, AI? And what is the strategic imperative stemming from this fundamental shift? How can CEOs start preparing their firms—and their employees—for this new world of work and proactively shape the future of their organisations? Despite the overwhelming shortage of data scientists, many business leaders claim to seek employees with “people” and “soft” skills. As AI radically reorients the nature of work, the economy that emerges will increasingly rely on workers to tap into their more “human” talents.

This new study from the Economist Corporate Network (ECN) examines the implications of AI on the workforce and the nature of work in Asia from the CEO's perspective. The report also makes comparisons with findings from our studies in 2016 and 2017 in order to gauge the pace, magnitude and extent of development in this crucial area.<sup>2</sup> In our fifth annual Global Talent Management Initiative, the ECN conducted a survey of regional CEOs and country heads at its 500+ member companies across Asia, as well as focus-group discussions with senior executives across Tokyo, Shanghai, Hong Kong and Singapore to explore how AI and automation are changing the nature of skills and work, and how CEOs should go about preparing their firms and their workforces for this new world of work.

<sup>1</sup> The Economist Intelligence Unit (2017): *Risks and rewards: scenarios around the economic impact of machine learning*.

<sup>2</sup> The Economist Corporate Network (2017): *Automation, AI and the future of work: The role of the CEO in shaping tomorrow's workplace in Asia*; ECN (2016): *Skills 4.0: How CEOs shape the future of work in Asia*.



# Perceptions of AI, automation and their impact

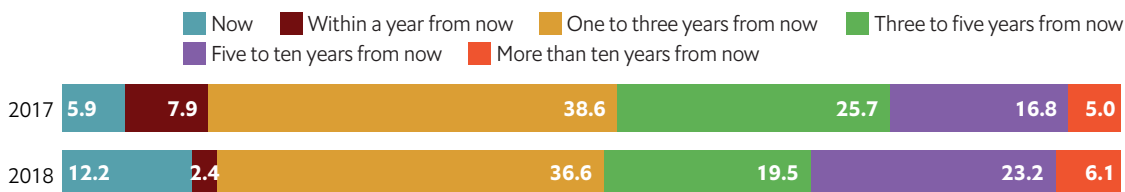
## How do business leaders believe AI will shape the wider workforce and the nature of work itself?

### The tipping point

Business leaders have long touted that we stand at the brink of a technological revolution. In 2017 our survey findings demonstrated that over 70% of respondents expected their businesses to feel the full effects of automation and AI within the next five years. In 2018 this figure dropped to 58%. CEOs have taken a more varied perspective towards their expectations on AI and automation. For a greater number of business leaders, AI and automation are no longer the future, with 12.2% claiming that their businesses are already experiencing the full impact and scale, compared with only 5.9% in 2017. For 23.2% of respondents, however, the full effects are predicted to take hold in five to ten years' time, increasing from 16.8% in 2017. Furthermore, patterns across subregions in Asia are noticeably different. Whereas the majority of respondents in mainland China (40%) and South Korea (50%) believe that the full impact will be experienced within the next three to five years, most business leaders in Hong Kong (58.3%) anticipate that the effects will occur much sooner, in one to three years' time.

It is increasingly difficult to preempt the emerging changes brought about by AI and automation—it is a moving target.

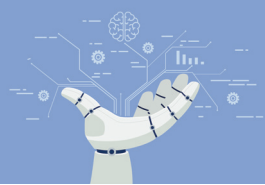
### When do you think the full impact and scale of automation and AI will be felt by your business? (% of respondents)



Source: Economist Corporate Network.

### Familiar technology

A large majority of CEOs are aware of emerging technologies. Nonetheless, disparities persist among the types of technology. In our 2017 survey, over 84% of CEOs claimed to have a moderate to high level of awareness on how AI can both disrupt and challenge, and provide opportunities for their business. Of the business leaders surveyed across Asia in 2018, 82.1% responded that they are aware about how to leverage AI to shape the future of work. Furthermore, a substantial 86.8% of CEOs note a firm understanding of how to leverage big data in particular. Few, however, feel confident in dealing with the less mature technologies: cryptocurrencies and blockchain. In 2017 only 7% of CEOs felt a strong level of familiarity with cryptocurrencies and blockchain. Although a greater number of business leaders believe that they are aware of how to leverage

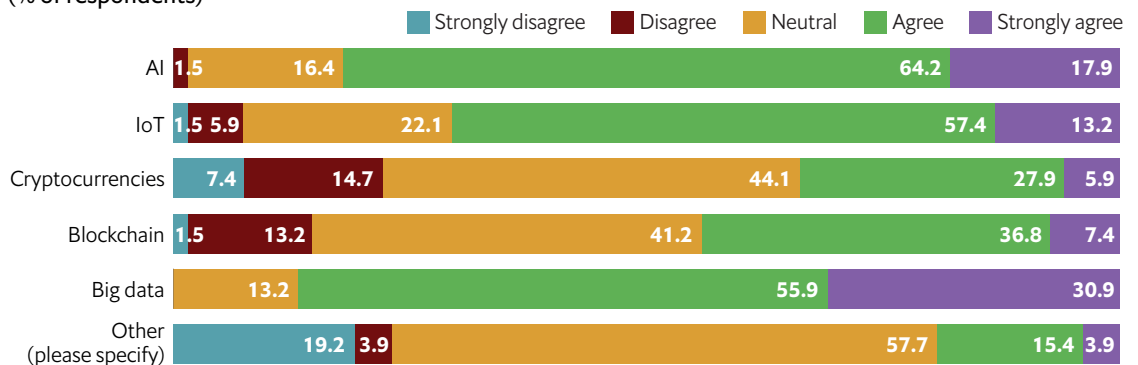


**AI, automation and the future of jobs and skills**  
 The role of the CEO in shaping tomorrow's workplace in Asia

such technologies compared with 2017, AI and big data still command the attention of CEOs to a greater extent. Furthermore, different subregions across Asia demonstrate varying degrees of confidence in certain technologies. In mainland China, for example, 45% of CEOs *strongly agree* that they are aware of how to leverage big data. In comparison, CEOs in Singapore took the lead in AI and those in Japan for cryptocurrencies, with 37.5% and 20% of those surveyed respectively claiming to have a strong level of awareness.

**As CEO, I am aware about these technologies and how my business can leverage them to shape the future of work.**

(% of respondents)



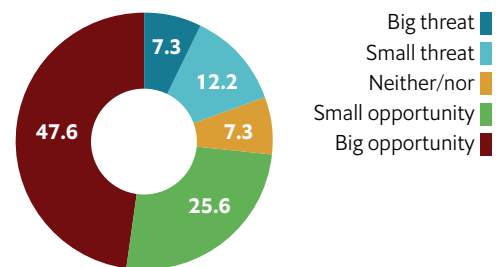
Source: Economist Corporate Network.

**Optimistic and unprepared**

Automation and AI are overwhelmingly identified as big opportunities for businesses. Of those surveyed, over 70% perceive automation and AI to present an opportunity compared with a threat, with 47.6% within that figure identifying the technology as a *big opportunity*. By contrast, only 7.3% of respondents indicate automation and AI as a *big threat*. This follows a similar pattern to responses in 2016 on megatrends and skills, in which 54.4% of respondents saw technological progress as a *big opportunity*, compared with only 7.4% who perceived it as a *big threat*. Across subregions in Asia, Singapore is the most optimistic, with an overwhelming 75% of those surveyed claiming AI as a *big opportunity* for their business. Despite the vote of confidence, very few CEOs feel prepared to face the disruptions, challenges and opportunities that arise from AI and automation. Our survey shows that only 7.3% feel highly or fully prepared, with the majority responding that they feel only

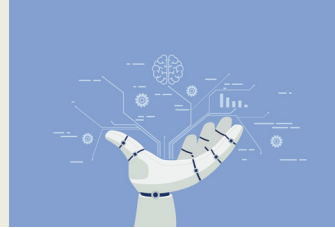
**To what extent do you perceive automation and AI to present a threat or an opportunity? Please indicate how strongly your company is affected.**

(% of respondents)



Source: Economist Corporate Network.





moderately prepared. In fact, a greater number feel completely unprepared, rising from only 1.2% in 2017 to 8.5% in 2018. At the very least, a disjunction between the perception of AI as a threat or an opportunity and a business's level of preparedness appears to be emerging.

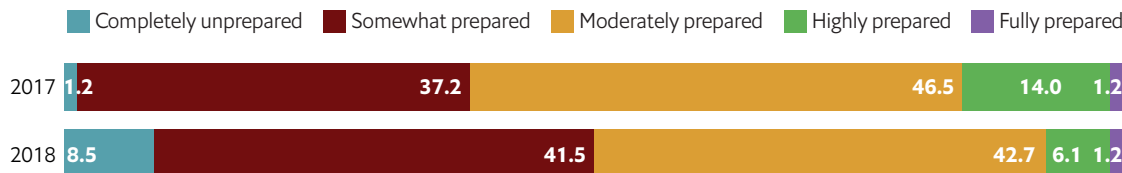
## Demographics count

Many executives in the Tokyo focus-group discussion referred to AI as an opportunity for Japan, regardless of the challenges that individual companies and industries may face. This attitude stems from Japan's acute demographic issues, which are dispelling popular concerns related to AI and automation in terms of the displacement of labour. In the healthcare industry, for example, AI is now being used to solve both the problem of the labour shortage and the ageing population. Diagnosis and drug discoveries are being made increasingly accurate and more regularly as a result of technology, which will only grow in importance alongside the number of elderly living beyond 100 years. Technology is filling widening gaps in Japan's labour market, in part explaining executives' exceedingly optimistic stance towards AI and automation, despite their inability to predict what the future might entail.

Technology is filling widening gaps in a number of shrinking labour markets.

### To what extent are you ready to face the disruptions, challenges and opportunities that arise from automation and AI?

(% of respondents)

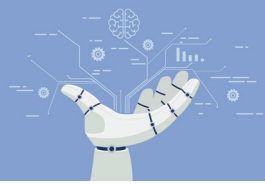


Source: Economist Corporate Network.

## Business impact

CEOs identify an array of different potential effects from automation and AI to their business. The majority (34.2%) of those surveyed think that the primary impact that automation and AI will have on their business is in increasing productivity, compared with 23.8% in 2017. Respondents to a recent survey conducted by The Economist Intelligence Unit (EIU) also revealed an overwhelmingly optimistic stance towards the economic benefits that AI will bring. Over the next five years, survey respondents expected AI to have a positive impact on growth (90%), productivity (86%), innovation (84%) and job creation (69%) in their country/region and industry.<sup>3</sup> In addition, the CEOs surveyed by the ECN think that automation and AI will improve relations with their customers, reduce costs and create new types of jobs. However, automation and AI do not always have a positive impact on business. Among the potentially negative effects are creating redundancies, making certain job categories obsolete and changing existing work habits and patterns. Only a small number of CEOs think that automation and AI will increase costs or create more positions in their business.

<sup>3</sup> The EIU (2018): *Intelligent economies: AI's transformation of industries and society.*

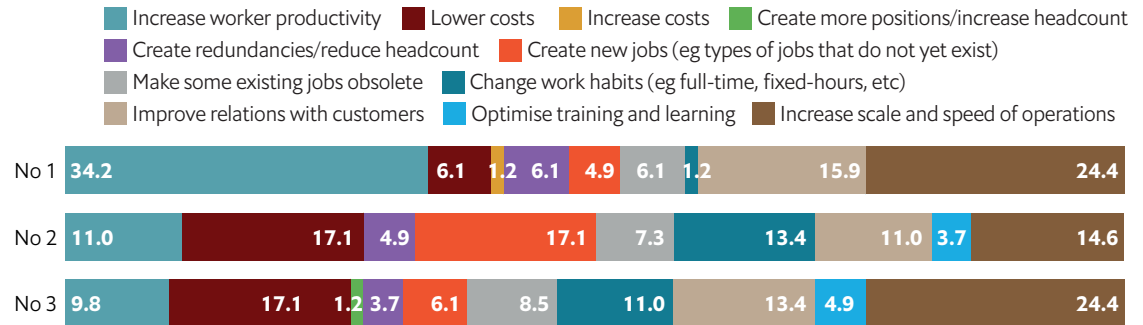


## AI, automation and the future of jobs and skills

### The role of the CEO in shaping tomorrow's workplace in Asia

#### Please choose the top three impacts or potential impacts from automation and AI to your business.

(% of respondents)



Source: Economist Corporate Network.

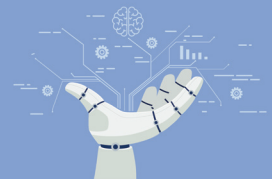
## The workspace

AI and automation are enabling new kinds of workplaces as a result of wide-ranging impacts.

It is clear that AI and automation are enabling new kinds of workplaces as a result of wide-ranging effects on the way businesses are handled. The managing director at a multinational business services consultancy in the Hong Kong focus-group discussion remarked that his company had just completed a three-year process of turning its workplace into a “workspace”. The workspace concept involves creating a more open, collaborative environment based around fluid spaces and digital connectivity. Other than such business benefits as speed and convenience, digitisation has reduced materials printing which, in turn, lowers costs and the carbon footprint of operations. The move has been well received overall, but also has required careful attention to enhancing communications security in the new, open environment.

### Summary points

- CEOs have taken a more varied stance on their expectations of AI and automation, but a greater proportion believe that businesses are already experiencing the full effects.
- CEOs feel increasingly aware of familiar technologies such as AI and big data, but lack awareness about immature technologies such as cryptocurrencies and blockchain.
- Very few CEOs identify AI and automation as a threat towards their business. The vast majority see changes as a *big opportunity*, despite their lack of preparedness.
- CEOs continue to believe that the most important effects of automation and AI will be positive: improving efficiency, increasing worker productivity and lowering costs.



# Imagining the future of jobs and skills

## How will AI and automation change the jobs and skills necessary for the future?

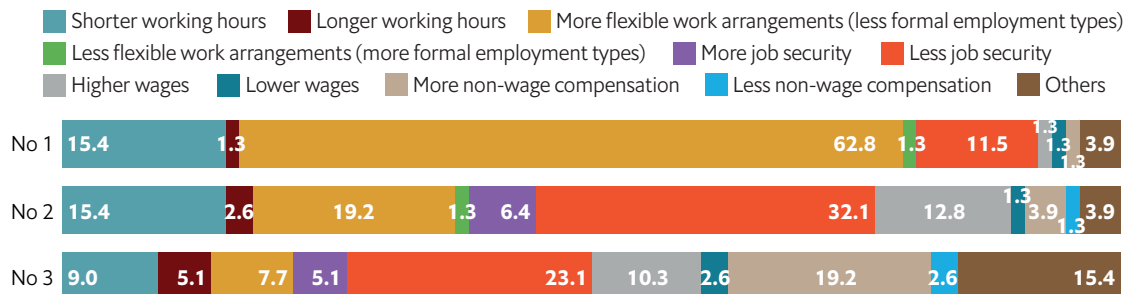
### Tomorrow's workplace

A large majority of those surveyed believe that automation and AI will affect the way their employees work. In accordance with 2017 responses, 62.8% of CEOs think that the biggest change automation and AI will have on the workplace is bringing in more flexible working arrangements and less formal employment types. 32.1% of those surveyed indicate that less job security is the biggest secondary impact to the way people work. Although a flexible labour market can in many contexts be an asset for countries/regions, businesses and workers, job insecurity from technological changes risks threatening workers' quality of life and could translate into unstable incomes. In addition, job insecurity for workers could mean lost loyalty for businesses due to high turnover rates and the potential of being replaced quickly. Some of the positive effects many business leaders cite include: higher wages, the ability to work from home, the possibility to retrain and learn new skills, and a greater chance to influence and contribute towards change in society. As AI and automation increase productivity and efficiency, moreover, the typical workday and workplace as we know it may become things of the past, which explains why over 15% of CEOs cite shorter working hours as the top potential impact of automation and AI.

As AI and automation increase productivity and efficiency, the typical workday and workplace as we know it will become things of the past.

### Please rank the top three impacts or potential impacts from automation and AI to the way people work in your business.

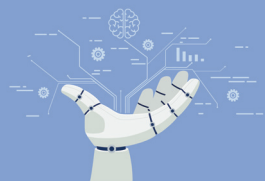
(% of respondents)



Source: Economist Corporate Network.

### Who will be affected?

Our survey finds that CEOs expect some workers to be more affected by automation and AI than others. Responses in 2017 suggest that CEOs believed automation and AI would have a greater impact on older workers than on younger staff, with 23.6% anticipating that older workers would be *extremely affected*. Although this perception remains, comparatively only 9% in the 2018



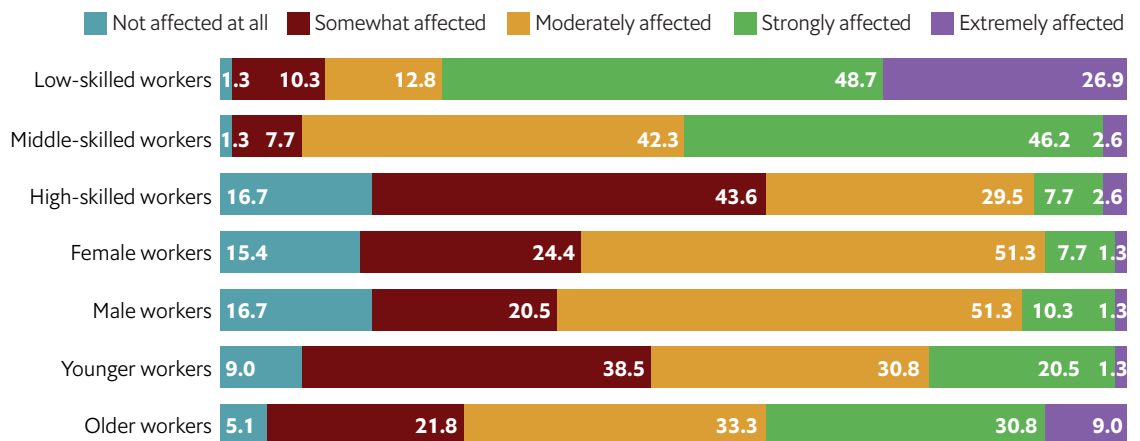
## AI, automation and the future of jobs and skills

### The role of the CEO in shaping tomorrow's workplace in Asia

survey believe that older workers will be *extremely affected*. On the whole, fewer respondents perceive demographic differences as a significant marker that will be affected by automation and AI. Of those surveyed, the number of respondents who expect gender and age to be a variable influenced to a high degree by the effects of AI and automation has markedly decreased.

### To what extent do you think workers within your business will be affected by automation and AI?

(% of respondents)



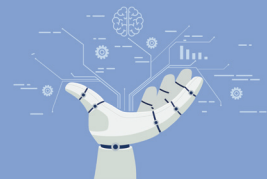
Source: Economist Corporate Network.

Despite the chronic shortage of data scientists, people skills remain the most valued for business leaders.

In terms of skills, CEOs continue to expect low-skilled workers to be the most affected, with an overwhelming 75.6% expecting them to be *strongly affected* or *extremely affected*. Furthermore, a markedly higher proportion (40%) of business leaders in mainland China expect low-skilled workers to be *extremely affected*, compared with only 10% of those surveyed in Japan. Meanwhile, all respondents feel that middle-skilled workers will be affected to some, albeit to a lesser, degree. Interestingly, the number of respondents who believe that high-skilled workers will *not be affected at all* has increased from 6.7% in 2017 to 16.7% in 2018, suggesting greater confidence in the stability of high-skilled labour in the face of tasks and jobs that risk being automated or made redundant by AI.

### Future skills

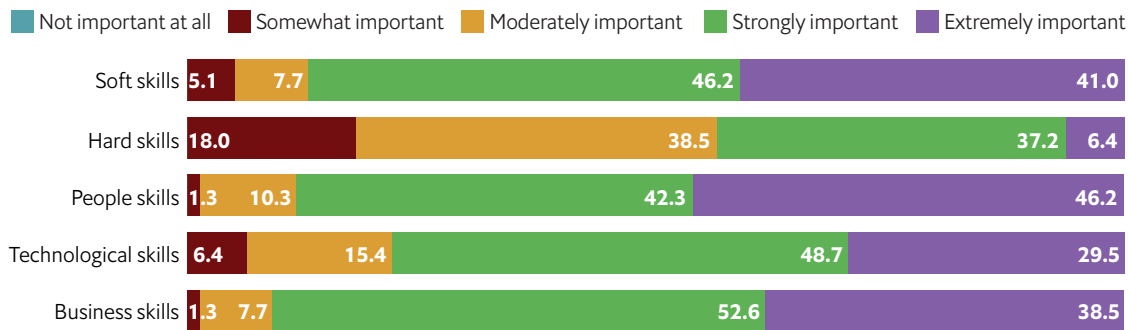
People skills remain the most important skill for the future based on advances in automation and AI. Of those surveyed, 46.2% rate people skills as *extremely important*, closely followed by soft skills, at 41%. Compared with the 2017 responses, however, a greater number of CEOs believe that business skills will be *extremely important*, increasing from 14.6% of those surveyed to 38.5%. A similar rise can be seen in the importance CEOs place on technological skills. Meanwhile, hard skills remain one of the least valued by business leaders. Only 6.4% of CEOs think that hard skills are *extremely important*, and 18% believe that they are only *somewhat important*. A



larger proportion (50%) of CEOs in both Singapore and South Korea think that business skills are *extremely important* compared with other countries/regions across Asia. Furthermore, 70% of those surveyed in Japan, compared with only 25% in South Korea and 16.7% in Hong Kong, deem people skills as *extremely important*, suggesting cross-cultural differences depending on the business environment.

**Based on advances in automation and AI, how important do you think the following skills will be in future?**

(% of respondents)



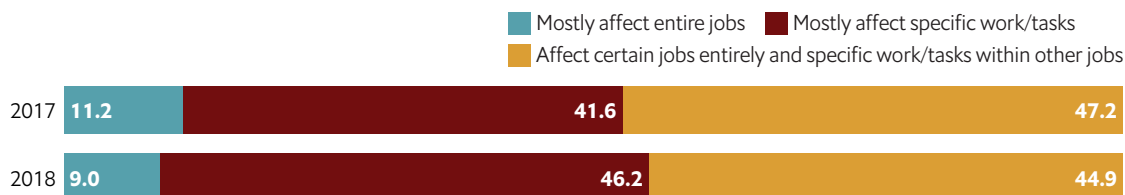
Source: Economist Corporate Network.

**Jobs vs tasks**


CEOs have a less radical notion of change than is often associated with AI and automation. Our survey found that only a small number of CEOs (9%) think that automation and AI will only affect entire jobs. Of those surveyed, 44.9% expect automation and AI to affect certain jobs entirely and specific tasks within other jobs, whereas 46.2% think that only specific tasks within jobs will be affected. These results reflect similar findings to responses in 2017, indicating that business leaders understand that the effects of automation and AI are complex and gradual. Rather than making a number of jobs redundant, AI and automation are more closely associated with assisting humans in certain tasks and optimising specific processes, which may go on to shape and reorient some of the primary roles and duties of many jobs.

**In my business, automation and AI will:**

(% of respondents)



Source: Economist Corporate Network.

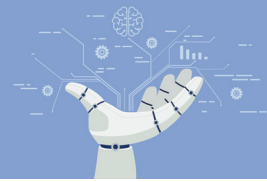


## AI, automation and the future of jobs and skills

The role of the CEO in shaping tomorrow's workplace in Asia

### Summary points

- The majority (62.8%) of CEOs continue to think that the biggest change automation and AI will have on the workplace is bringing in more flexible working arrangements and less formal employment types.
- In 2018 fewer CEOs believe that older workers will be *extremely affected* by AI and automation. In general, demographic differences are perceived to be less significant than in the past.
- CEOs increasingly believe that high-skilled workers are at less risk of being made redundant as a result of AI and automation.
- People skills and soft skills remain the most valued by employers.
- Only a small number of CEOs (9%) think that automation and AI will only affect entire jobs. The majority (46.2%) think that only specific tasks within jobs will be affected.



## The picture in mainland China

### **Policy background and digital ecosystem**

Coincidentally, the focus-group discussion in Shanghai coincided with the city's hosting of the 2018 World Artificial Intelligence Conference. This global conference comes a year after mainland China's State Council (the cabinet) issued guidelines on developing AI. In keeping with mainland China's traditional approach to industrial planning, the State Council 2017 document set targets: by 2030 mainland China should be a global innovation centre in AI, with the total output value of AI industries reaching Rmb1trn (US\$151.5bn) by that year. In line with this goal, the government is providing a supportive policy environment and financial support for industrial upgrading through automation, as well as for AI development. Meanwhile, several companies (including Microsoft of the US) have recently announced investment in new AI technology projects and labs in mainland China.

### **What makes mainland China's digital ecosystem unique?**

The sophisticated and omnipresent digital ecosystem that has developed in mainland China was the starting point of the Shanghai focus group. This discussion acknowledged that mainland China's pioneering use of AI software for surveillance purposes, along with ongoing concerns about intellectual-property issues and the integrity of data, adds to the complexity of this topic, as does the speed and scale of mainland China's adoption of digital systems.

The use of mobile-based payment, messaging and informational systems has become ubiquitous in mainland China, and the accompanying changes to lifestyles are often hard for overseas corporate visitors to comprehend. The contrast is particularly marked for senior management executives who live in a "pre-digital bubble"—in fact one focus-group participant recounted

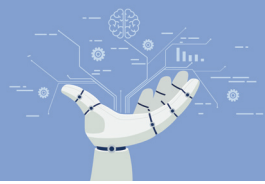
deliberately stranding a corporate visitor to experience a "deep-end" cashless, omnichannel digital economy. The resulting disorientation prompted the executive to reorganise a number of business functions to be more in tune with the digital lifestyles of clients and employees in mainland China.

However, newly evolved digital lifestyles and corporate practices in mainland China may be a source of contention with corporate headquarters. For companies directly interfacing with consumers, such as in fast-moving consumer goods, they are probably already pursuing customer-centric digital engagement, and the global team may well be viewing the Chinese model as an incubator for even more innovation that can eventually be adopted by the global teams.

However, many industrial companies operating in mainland China are facing reverse challenges, as traditional global corporate practices and marketing approaches may become more and more estranged from fast-paced, localised (just for mainland China) digital adaptations. A danger is that parallel systems will evolve—one for internal, mainland China-based use, and one for global use—which may stretch both compliance and integration with global payment and administrative systems. Many mainland China-based operations now routinely conduct business processes (including price negotiations, exchange of contracts, strategy sessions, communication with local government etc) entirely on the WeChat messaging platform, with payments via Alipay—but must then revert to corporate email for a formal summary that will be on the corporate server's memory.

Other examples of "disconnects" cited by focus-group participants focused on the incomplete nature of digital adoption—for example, awkward combinations of

Mainland China is providing a supportive policy environment and financial support for industrial upgrading through automation, as well as for AI development.



## AI, automation and the future of jobs and skills

The role of the CEO in shaping tomorrow's workplace in Asia

Companies that have embarked on the transformation to digital platforms reported an expansion of management efficiency and a rethinking of client relationships.

e-documentation with requirements for paper-based signatures. Such instances were felt to be reflective of a “lag” in regulatory processes in keeping pace with technological change.

Also noted were companies (both multinational corporations and Chinese state-owned enterprises) that are late to the AI discussion, and are now having to respond to a top-down directive to enact “digital transformation”, without many clues as to what this could or should entail. One discussant described CEOs in this situation as “internally challenged and externally pressured”.

By contrast, companies that have embarked on the transformation to digital platforms and AI-enabled process reported an expansion of management efficiency (for example, use of digital communication to

enhance employee communication) as well as a rethinking of client relationships (such as use of client recommendations and referrals to identify new customers).

What is the role of the CEO in managing this far-reaching and multifaceted transformation? The enormity of the challenge to corporate culture necessitates the inclusion of stakeholders throughout the company in innovating and troubleshooting new solutions. Rather than merely relying on existing business unit functional allocations, discussants cited examples of companies rewarding grassroots involvement in rethinking processes and discovering new markets. Blurring traditional lines will require a reorganisation of roles, and even the transition of some roles into more fluid project-based assignments, in keeping with the pace of change.





# The role of the CEO in shaping the workplace

## What strategies are businesses adopting to prepare for the workplace of the future, and how do business leaders position themselves within those strategies?

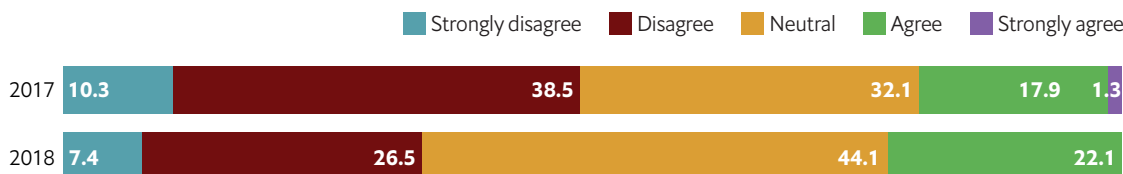
### Communication is key

In general, CEOs are still not confident that their automation and AI strategy is consistent throughout their organisation. Of those surveyed, 33.9% confess that they do not believe that their automation and AI strategy is clearly communicated to their employees, whereas only 22.1% agree that it is. This result remains consistent with responses in 2017, suggesting that clearly communicating a strategy to all workers remains a big challenge for businesses. If they want to shape the future of work in their companies successfully, CEOs need to find better ways of making sure people further down the hierarchy get the message. Without a clear strategy among the workforce, it is no wonder that many businesses struggle to feel prepared in facing the digital disruption.

Many business leaders remain reluctant to involve external specialists in their recruitment processes.

### Our automation and AI strategy is clearly communicated to our employees.

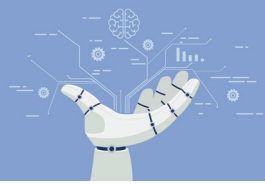
(% of respondents)



Source: Economist Corporate Network.

### How do companies build tomorrow's workforce?

Among CEOs in our focus-group discussions, the lack of talent and difficulties in obtaining talent were cited as major obstacles for businesses when facing digital disruptions. Despite such challenges, many business leaders remain reluctant to involve external specialists in their recruitment processes. Only 23.6%, down from 29.5% in 2017, *often* or *regularly* use external training. Outsourcing firms and recruitment specialists are even less commonly used, with only 20.6% and 10.3% of respondents, respectively, saying that they *often* or *regularly* involve external specialists. According to our survey, preparing workers for the realities of tomorrow's workplace occurs mostly through internal and on-the-job training.

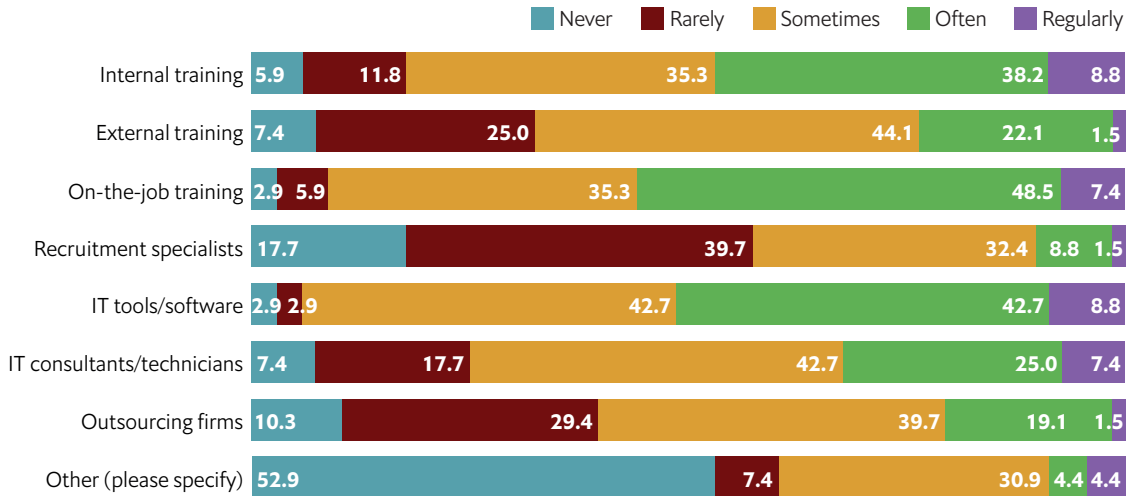


## AI, automation and the future of jobs and skills

### The role of the CEO in shaping tomorrow's workplace in Asia

#### When preparing our workforce for automation and AI, we make use of:

(% of respondents)



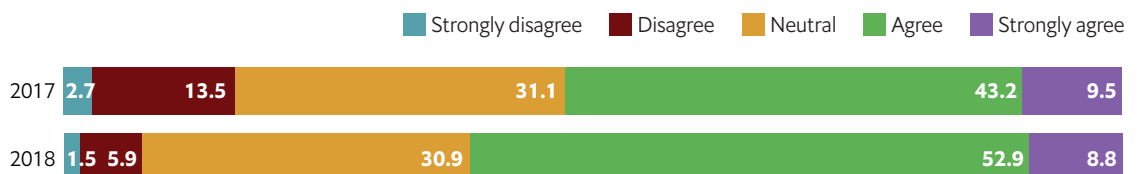
Source: Economist Corporate Network.

## CEO involvement

In general, CEOs understand the importance of their involvement in order to make sure that their company continues to leverage technology to shape tomorrow's workplace. Of those surveyed, 61.7% claim that they are closely involved with making sure that their company has the right approach. Despite this, there is room for improvement and more CEO involvement. A sizeable share of CEOs, around 38%, responded that they are neither closely involved or otherwise. This trend follows on from responses given in 2017, suggesting that CEOs themselves will need to become more involved in order to communicate their strategy to the workforce clearly.

#### I am closely involved with making sure our company has the right approach to automation and AI.

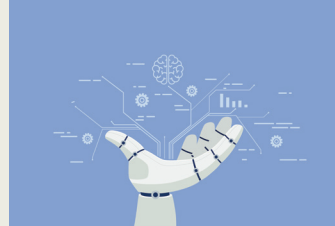
(% of respondents)



Source: Economist Corporate Network.

## The race to implement AI

Interestingly, a large proportion of CEOs have changed their approach to automation and AI within the past year. Of those surveyed in 2017, 58.1% stated that their approach was to soften the impact on work from automation and AI, while only 40.5% said that they preferred to accelerate



the arrival of automation and AI to the workplace. But this trend has been bucked. 64.7% of CEOs now believe in an approach based on accelerating their arrival, compared with only 35.3% of those who say that their approach is to soften the impact. The race to adopt and implement AI in business processes reflects such a shift in attitude. In a recent study conducted by The EIU, for example, more than one in four respondents (27%) said that their organisations had already incorporated the technology into key processes and services, while another 46% had one or more AI pilot projects under way.<sup>4</sup>

**My approach to automation and AI is closest to:**

(% of respondents)



Source: Economist Corporate Network.

**Corporate inertia**

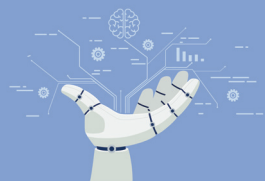
The ability dramatically to change the culture of their company to thrive in a digitally competitive business environment is one major challenge shared by CEOs in the Singapore focus group. There is a huge amount of inertia in many large multinationals, and especially those with 100-year-old histories. The senior executives discussed a number of ways they are working to ensure that their teams remain at the forefront of innovation. It was clear that through all the examples shared, partnerships were a crucial element. “We are educating ourselves by working with government, academia and business including start-ups, extending our reach across the entire ecosystem,” shared one CEO. “We are working hard to build our network and collaborate with partners, from the big—such as the likes of Google—to the small, such as the start-ups or in incubator labs,” said another CEO.

CEOs now believe in an approach to automation and AI based on accelerating their arrival, rather than softening their effects.

**Leading others**

To encourage their employees to embrace automation and AI as realities of tomorrow's workplace, CEOs must also lead by example, as many are already doing. Our survey finds that an overwhelming majority of CEOs in both 2017 (81.1%) and 2018 (76.5%) claim that they would lead by example and gladly automate parts of their job if AI was better at doing them than they are. Furthermore, 80.9% of CEOs agree or strongly agree that they spend more time on thinking about what skills their business will need in the future than they did in the past. The fast-paced nature of technological change, which the majority of business leaders anticipate within the next three years, thus requires CEOs to consider how their industry itself will transform and the skills necessary for the new world of work.

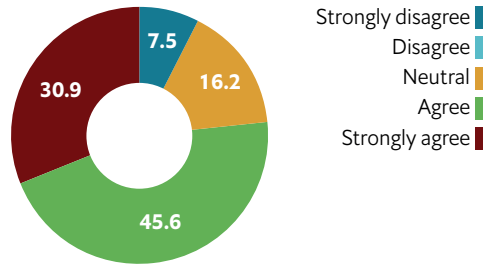
<sup>4</sup> The EIU (2018): *Intelligent economies: AI's transformation of industries and society.*



**AI, automation and the future of jobs and skills**  
 The role of the CEO in shaping tomorrow's workplace in Asia

**As CEO, I would lead by example and gladly automate parts of my job if AI was better at doing them than I am.**

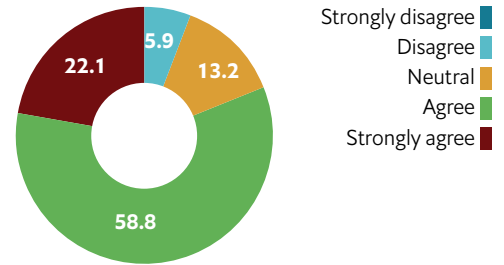
(% of respondents)



Source: Economist Corporate Network.

**I seem to spend more time on thinking about what skills our business will need in future now than I did before.**

(% of respondents)



Source: Economist Corporate Network.

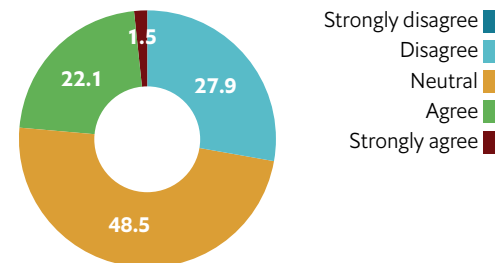
More and more corporates are being forced to offer a different kind of work environment and experience to remain competitive.

**Incentivising skills training**

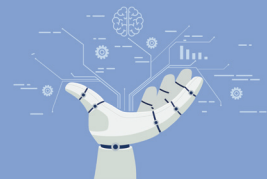
Echoing calls by the Japanese prime minister, Shinzo Abe, executives in our Tokyo focus group stressed a number of structural reforms necessary to create a fluid labour market in Japan. Firm specific skills, which have been propped up by Japan's traditional emphasis on the lifetime employment system, are a thing of the past. The lack of fluidity has led to small, internal labour markets deprived of the incentive to skill up and remain employable. This incentive issue, however, was noted to be offset by a new type of graduate and employee that executives are increasingly witnessing. The popularity of workspaces such as those offered by Google and Apple of the US are causing more and more corporates in Japan to offer a different kind of work environment and experience to remain competitive. The millennial generation is frequently prioritising opportunities to train and upgrade their skill set over salaries. Companies, therefore, must offer more learning opportunities to attract the right talent. The response from business leaders in our survey also reflects an ambivalence about whether companies have the right structures in place to skill up existing employees, with a larger proportion of those surveyed in disagreement than agreement. Indeed, although companies may have a vision of what they need to become and how to do it, very few have the resources to implement that plan in reality, one respondent in the focus group observed.

**We have the right structures in place to skill up our existing employees.**

(% of respondents)



Source: Economist Corporate Network.



### Summary points

- The majority (44.1%) of CEOs still feel ambivalent about whether their AI strategy is clearly communicated across their company.
- Companies remain reluctant to involve external specialists in preparing their workforce, with only 23.6% *often* or *regularly* using external training.
- A greater proportion (64.7%) of CEOs now believe in an approach based on accelerating the arrival of AI and automation, compared with only 35.3% of those who prefer to soften the impact.
- Partnerships between governments, academia and businesses are a crucial element to thrive in a digitally competitive business environment.
- An overwhelming majority of CEOs would lead by example and automate parts of their job if AI was better at doing them than they are.
- An increasing number of graduates and employees demand constant learning within the company in order to upgrade their skills and remain employable in fluid labour markets.

## Skills in Asia

Collaboration across borders is increasingly important, with many executives demanding employees who can work in multi-geographical, multi-cultural settings.

### The global mindset

As a technologically advanced country, the barriers facing Japan go beyond matters of software, information technology and automation. The focus-group discussion in Tokyo emphasised cultural and linguistic concerns for Japan's business world. One of the major challenges involves transcending a Japan-centric business model in which strategies and products are primarily designed for the domestic market. Transitioning towards an international market, in which joint ventures and mergers and acquisitions play a key role, requires what many of our executives termed the "global mindset" and the ability to work in a multi-geographical, multi-cultural setting in which questions and issues are often framed differently.

### Bilingualism

Collaboration across transnational borders requires a high degree of cultural understanding and co-operation. The majority of executives in our Tokyo focus group remarked on the difficulties in facilitating the management of cultural differences in Japan's business environment, whereby the majority of employees lack a global or bilingual background. Although a number of measurements have been deployed by companies, such as overseas training and the use of English as the official internal language, it appears that efforts made at executive level are often undermined within the workplace or are ineffective in creating the changes expected. The lack of bilingualism, in particular, poses problems regarding the accessibility of information. In a world characterised by fast-paced change, information and data have been dubbed "the new oil". Bridging the gaps between language and accessibility of information could, therefore, lead to a more proactive stance towards technological

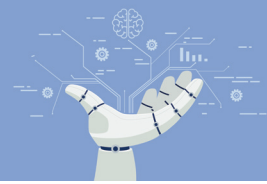
changes and create the sense of urgency necessary to deal with AI and automation. The inability to do so could go so far as to hinder the intelligence function of firms, whereby companies fail to get the signals early enough or the information necessary to plan for the future.

### Hiring the skills of the future

"We are hiring differently. We are hiring for capability, but more importantly for agility and adaptability," said one CEO in the Singapore focus group. This was met with agreement by the other leaders, and all emphasised the need for workers to be able to "unlearn old habits" and to be able to adapt to new technologies and ideas quickly. From an organisational perspective, senior executives believed their role to set the example, and prepare the organisation for change. "The shadow of the leader always follows," said one CEO, who believed in developing a culture in his organisation of deploying new ideas quickly, failing fast and learning from it to build better prototypes. "We need to be curious and externally focused, and connect to the people at the edge; we need to more deliberately communicate that failure is not a bad thing, but that it is important to fail and learn quickly," shared another CEO.

### Hybridisation of roles

Although "people" and "soft" skills were ranked the most important among surveyed CEOs, Tokyo executives agreed on the need for technology-savvy workers across all sectors and industries. If data is indeed the new oil, business people must have the technical knowledge and knowhow necessary to devise strategies that effectively use data, AI and the Internet of Things, among other technologies. Conversely, software engineers and workers with tech-based backgrounds are expected increasingly to branch out into management-



based positions, facilitating a greater crossover of skills and hybridisation of roles.

### **Optimising jobs**

Executives in the Singapore focus-group discussion also noted the use of data analytics and machine learning in helping senior leaders to make more informed decisions around market demand, risk and forecasting. Of course, it is not the case that all parts of the organisation are embracing AI at the same speed. The Asia head for one of the world's largest pharmaceutical companies said that, at present, technology adoption is highest at the frontlines of the business, where it is already changing the way sales representatives interact with the customer. "We are using AI to help salespeople to plan their strategy and territory, and to point them in the right direction," he revealed.

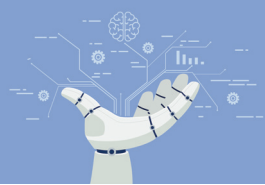
### **Lagging education systems**

At governmental level, moreover, Japan recognises the lack of resources geared

towards educating students about machine learning and data analytics. However, the lack of professors qualified to teach such courses will require greater global collaboration across universities in order to prepare students with the right skill set and knowledge for the future world of work. Similarly, in the focus-group discussion in Hong Kong, a board representative of a professional association and former president of a university in mainland China stated categorically: "education is not keeping up with trends in automation. For training students in Hong Kong, we are at least ten years behind where we should be." Her recommendation is to add "data engineering" to university curricula and make sure that managers are trained to adopt to changing needs for new operating models. Indeed, few countries/regions have begun to address the impact of automation through educational policy, in part because of the lack of multi-stakeholder dialogue on adapting educational systems.<sup>5</sup>

Education is not keeping up with trends in automation, in part owing to the lack of multi-stakeholder dialogue.

<sup>5</sup> The EIU (2018): *The automation readiness index: who is ready for the coming wave of automation?*

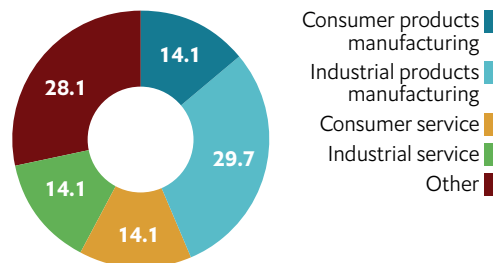


# Appendix

## Participant data

**How would you describe the industry of your company? Please choose the most appropriate one that describes your primary business (eg the largest part of the business).**

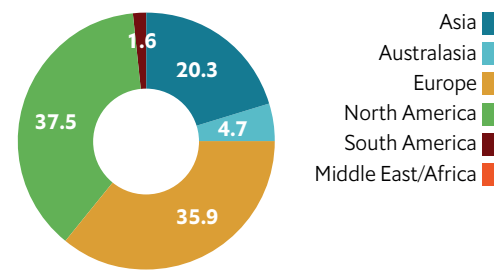
(% of respondents)



Source: Economist Corporate Network.

**Where is your firm's global HQ?**

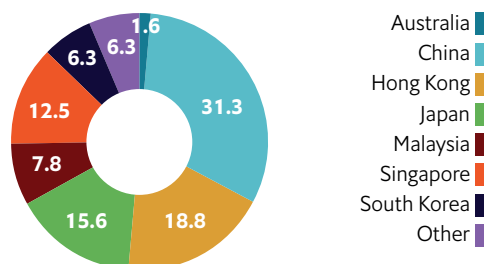
(% of respondents)



Source: Economist Corporate Network.

**Where is the location of the entity that you manage?**

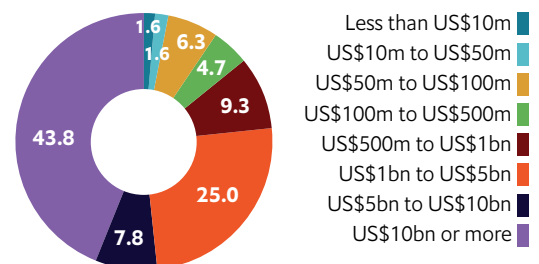
(% of respondents)



Source: Economist Corporate Network.

**What was your firm's global revenue for its latest financial year?**

(% of respondents)



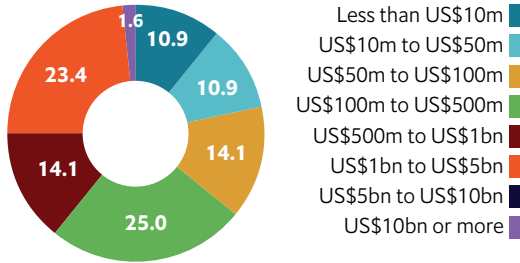
Source: Economist Corporate Network.





**What was the revenue for the entity that you manage (regional/country) for the latest financial year?**

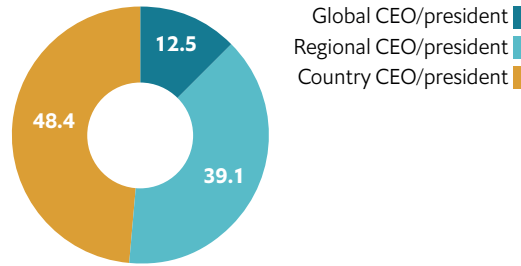
(% of respondents)



Source: Economist Corporate Network.

**What is the geographical scope of your responsibilities?**

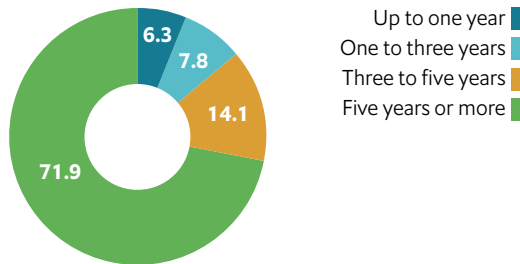
(% of respondents)



Source: Economist Corporate Network.

**For how many years have you been an executive (C-suite)?**

(% of respondents)



Source: Economist Corporate Network.

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