



The 2020 Fourth Industrial Revolution Benchmark

By KPMG Digital Delta

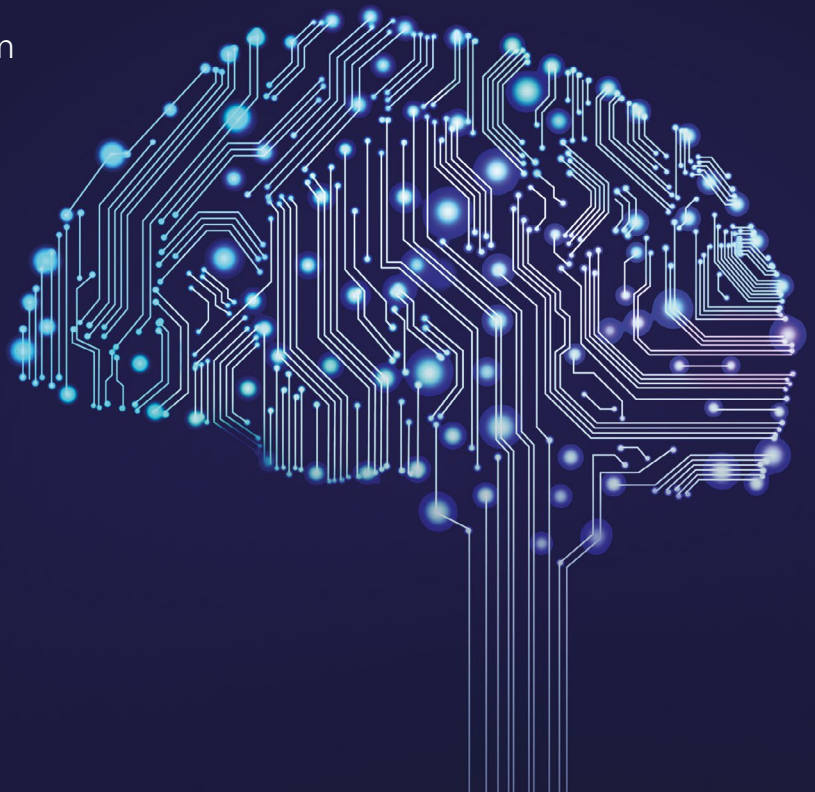
In collaboration with Faethm



Digital &
Disruption

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[KPMG.com.au](https://www.kpmg.com.au)



Foreword



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Since industrialisation in the 18th century, humankind has experienced four technology-led revolutions. Each has had a profound impact on society:

①

The First:
**Steam enabling
mechanical production**

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②

The Second:
**Electricity enabling
mass production**

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③

The Third:
**Computers and
digital systems**

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④

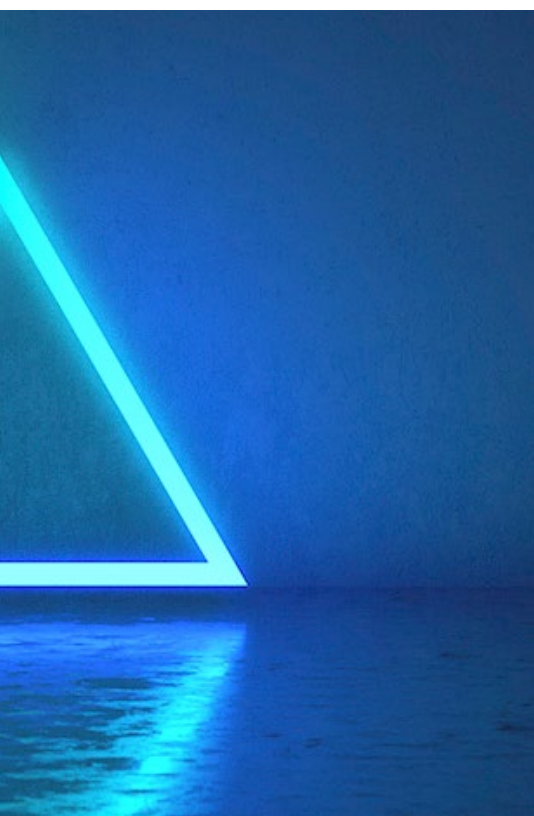
And now the Fourth:
**Convergence of the physical,
digital and biological worlds**
enabled by advanced and disruptive technologies including Artificial Intelligence, the Internet of Things, Blockchain, robotics, 3D printing, nanotechnology, augmented reality, virtual reality, autonomous vehicles, digital twins, cloud computing and 5G.



The rapid acceleration in the capabilities, usage and effects of these advanced technologies, and their impact economically, has come to be referred to as 'The Fourth Industrial Revolution' (4IR).

The 4IR represents a fundamental change in the way we live, work, and relate to one another.

Technological advances are merging the physical, digital and biological spheres to create a new epoch in



human development that will bring immense opportunities and serious threats. Nations, organisations and policy-makers face a tipping point as the speed and depth of the 4IR redraws our understanding of how to create value for economies and people. To succeed, we must embrace technologies – and the synergies between them – to drive the development of more inclusive societies with human values at the core.

Key themes and issues:

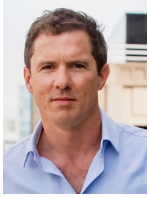
- **Business disruption:** The foundations of business as we know it are being challenged
- **Innovation and productivity:** The impact of new technologies on productivity is not being captured by traditional tools
- **Security and conflict:** 4IR is changing the nature of conflict
- **Ethics and identity:** Innovations are redefining what it means to be human
- **Inequality:** Wealth inequality is worsening, and new technologies threaten to aggravate it
- **Disruption to jobs and skills:** 4IR is shifting job roles and skillsets
- **Agile technology governance:** New technologies are outpacing regulatory frameworks
- **Fusing technologies:** Collaboration between disciplines is opening new frontiers

Understanding the rate of adoption of technologies from the 4IR – how broadly new technologies are being used and in what ways – is a challenge for many business leaders. AI, IoT, machine learning, robotics, virtual and augmented reality, and other emerging technologies such as quantum computing are advancing significantly faster than many anticipated just a few years ago. The scale of this acceleration can be difficult to grasp.

For example, the combination of AI and IoT has the potential to dramatically accelerate the benefits of digital transformation for consumer, enterprise, industrial, and government market segments. AI adds value to IoT through machine learning and decision-making, and IoT adds value to AI through connectivity and data exchange.

The Fourth Industrial Revolution represents a multi trillion dollar opportunity for the Australian market. That said, while awareness of the underlying technologies is high among Australian executives, their readiness is low. In contrast, China and USA has a significant strategic focus on investing in these technologies. Australia risks being left behind over the next decade unless it addresses issues relating to awareness and intent to invest.

In this environment, staying competitive begins with a clear view of the landscape. This is why we have developed *The 2020 Fourth Industrial Revolution Benchmark* in collaboration with our partners Faethm. We aim to help Australian leaders understand the rate of adoption of 4IR technologies, and the ways they are transforming businesses, investments and people into the future.



Michael Priddis,
CEO
Faethm

Impact on jobs

Rapid advances in emerging technologies, such as AI and robotics, will significantly transform the workforce. Some jobs will be automated, while others will be augmented through the changing of work tasks, required knowledge and skills.

These technology advances, and the corresponding consequences of workforce reallocation, are happening now. Governments, firms and employees need to act to guarantee the preparedness and agility of a workforce that is able to make job transitions quickly and avoid potential structural unemployment.

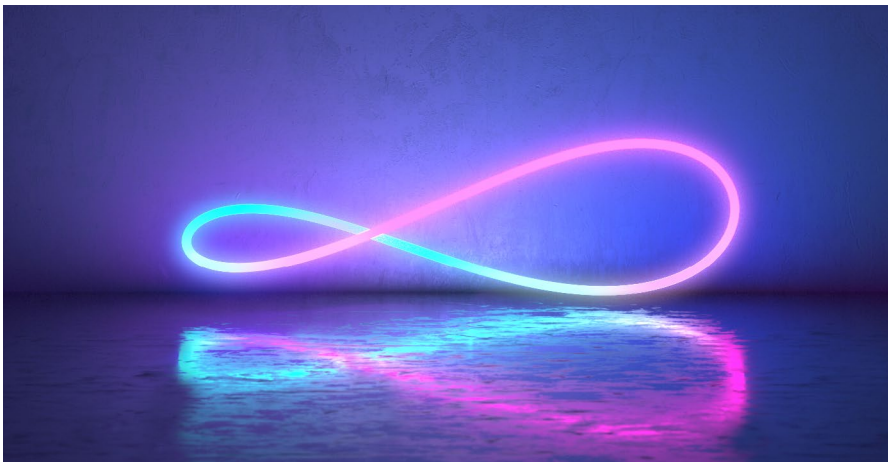
As firms automate and augment work tasks, employees need to continually up-skill to remain relevant and stay employed. However, focusing on gaining technical or discipline-related skills alone is inadequate. Demand

for specific technical skills changes too fast and the shelf life of these skills is too short. Any job that involves innately human qualities (such as care, compassion, communication, dealing with ambiguity, imagination and creativity) will typically be safe and in-demand. This means many people will need to retrain for new jobs that require these robot-proof capabilities.

Closing the skills gap

Australian companies are not alone in having to respond to the growing skills gap. Many countries are not prepared to deliver life-long learning at scale. Australian corporations can take a lead in identifying the jobs that are changing and the skills needed for future employability. Australia has a vibrant and effective education industry, which will prove invaluable in helping Australian firms capture the value of new emerging technologies.

For example, bridging the skills of an accountant into those of a cyber analyst is an easily trainable knowledge gap. If over the course of two or three years, firms are automating back-office accounting roles with Robotic Process Automation (RPA), but at the same time needing to hire more cyber analysts, they could transition accountants into new cyber analyst roles through learning and development (L&D) programs. The business case for L&D over hire-and-fire is self-evident.





Key Findings

1

While the concept of the 4IR is known to most – business leaders lack a deep understanding or experience with the technologies.

Many business leaders are not well informed about the 4IR concept.

Four in 10 feel they have either an 'excellent' (12%) or 'good' (32%) understanding of the concept.

However, the remainder know only little (47%) or have not even heard of the concept (9%).

The majority of organisations are considering 4IR technology but have not yet implemented these.

On a five-point maturity adoption assessment, leaders rate their organisations' maturity of most associated technologies below three (i.e. siloed and inconsistent in implementation).

Maturity score out of 5

3.9 Cloud services is the gateway technology (maturity score 3.9)

2.7 followed by IoT (2.7)

2.6 AI (2.6)

2.5 RPA (2.5)

2

Many business leaders do not feel prepared for change associated with the 4IR – with staff skills a key barrier.

46%

Less than half (46%) feel their organisation is strongly prepared for technological change.

47%

Building necessary staff/skill capability is the top challenge in adopting 4IR technologies (47% rate this in top three).

38%

Only four in 10 (38%) feel they have staff with the necessary skills to implement new technologies.

3

Leaders who understand the concept well, however, recognise the impact, and are more prepared for it.

The 44% that have a strong understanding of the concept:

Perceive the impact on all facets of their business to be higher than those with weak/no understanding; particularly the impact on their workforce (mean impact score 4.1 out of 5, when they have strong awareness vs 3.7 with weak or no awareness).

30% vs 20%

Spend a higher proportion of research and development (R&D) expenditure on these technologies (30% vs 20%).

Are more mature with their implementation of all associated technologies.

57% vs 36%

Rate their readiness for change much higher (57% rate high preparedness vs 36%).

4

There are many reasons for adoption of 4IR technologies – with customer experience (CX) improvements a key driver.

67%

Increased productivity (67%), innovation (64%) and process automation (62%) are other key drivers of adoption.

75%

Improving CX is the key reason behind adoption of these technologies (selected by 75%)

CX is also seen as the area of greatest impact on businesses (4.3 out of 5), over products and services, innovation, operating model (all 4.1) and workforce (3.9).

Research Background

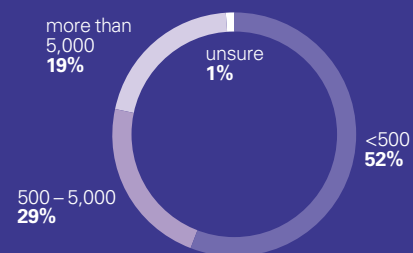
An online survey was conducted by KPMG in Australia among senior business leaders regarding their understanding of concepts around the 'Fourth Industrial Revolution' (4IR) and levels of adoption of associated technologies.

The survey was conducted from 1 October to 14 November 2019 with a total of n=196 respondents completing the survey.

Respondent Profile

The profile of respondents who completed the survey is shown below:

Company Size — Employees



Annual Revenue



Industry



Awareness of 4IR technologies

Level of 4IR awareness

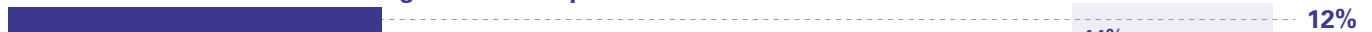
Fewer than half of business leaders surveyed feel they have more than a basic understanding of the term 'Fourth Industrial Revolution' (4IR); and more concerning, nearly one in ten (9%) have not even heard of the concept.

Larger organisations with more than 500 employees or a turnover larger than \$1 billion, are more likely to have an 'excellent' or 'good' understanding of the concept (53% and 54% respectively).

When analysed by industry sector, the understanding of the 4IR is lower in financial services (35% vs 48% in other industries).

Q. How familiar are you with the term the "Fourth Industrial Revolution"?

I have an excellent understanding of the concept



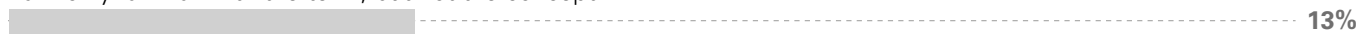
I have a good understanding of the concept



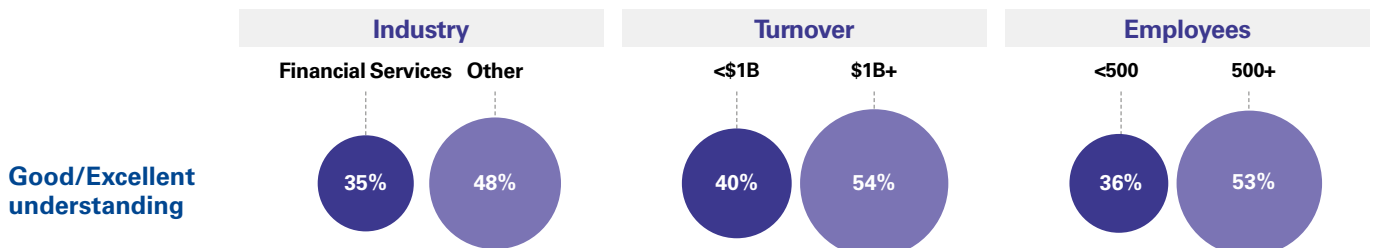
I have a basic understanding of the concept



I am only familiar with the term, but not the concept



I have never heard of the concept



Impact of 4IR technologies

Perceived level of impact within the next five years

When made aware of technologies associated with the 4IR, the business leaders surveyed perceive that they will have a sizable impact on their businesses within the next five years.

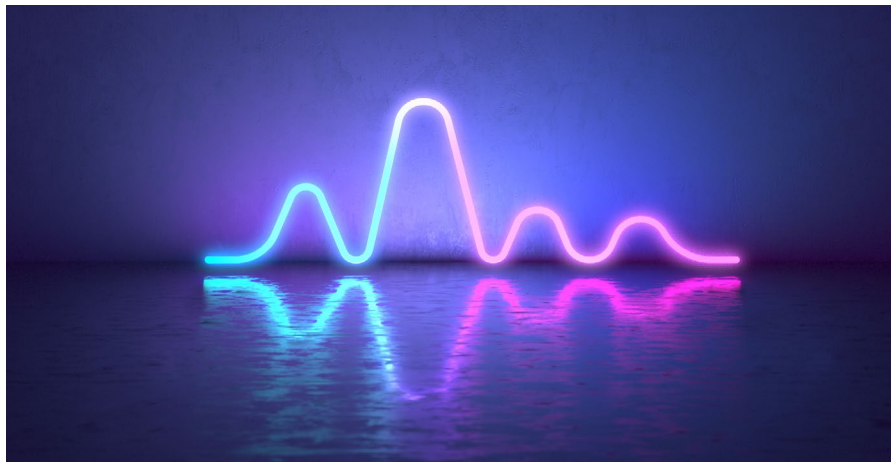
Business leaders with an 'excellent' or 'good' understanding of the 4IR expect a higher impact level across all evaluated dimensions, when compared to expectations by business leaders with a weaker understanding of the concept. Anticipating a higher impact level on strategic processes could lead businesses to increase the urgency with which they prepare and adopt 4IR technologies, giving a competitive edge to those who act first.

In general, business leaders expect technology to have a high impact on all components of their businesses. The largest of which is expected to be on the customer experience (4.3 average), particularly among financial services (4.6 average) and businesses with more than \$1 billion turnover (4.6 average). Customer experience is defined as the ability of the organisation to cater to the changing or increased expectations of customers, such as personalisation.

99

"As we enter the 'cognitive era', compute costs will continue to head towards zero, data volumes will continue to skyrocket and Artificial Intelligence (AI) will shift from research labs into business operations. The network will leverage, connect and combine these to enable massive transformation at machine-scale. On the one hand we have 'digital abundance', in which information and knowledge in the form of bits can be transferred and reproduced perfectly and almost infinitely for negligible cost. On the other hand, it has never been more important to appreciate that our global physical resources ('atoms') are finite, that our privacy and trust is sacrosanct and that government and regulators are beginning to take unprecedented action against global digital giants to protect citizens and rebuild trust."

Kevin Bloch,
Chief Technology Officer,
Cisco ANZ



> 4IR Awareness

While, on average, business leaders with an 'excellent' or 'good' understanding of the 4IR expect a higher impact level across all items, around 50% of that group believe the impact is going to be very high (rated 5), compared to an average of 37% of those with a weak 4IR awareness.

The largest gap is in the expected impact on people, processes and technology (business operating model), and on the changes in skill requirements for staff (workforce).

Almost half of aware business leaders expect a very high impact (51% and 44%, for business operating model and workforce respectively) and only a third of unaware business leaders expect the same level of impact (30% and 25%, for business operating model and workforce respectively).

As aware business leaders start implementing 4IR technologies, they realise the impact on their business model and the importance of upskilling and reskilling their workforce, as well as hiring talent with AI skills.

> Industry

In general, financial services firms expect a higher impact across all dimensions compared to other industries.

The largest impact is expected to be on customer experience – three out of five surveyed financial institutions anticipate a 'very high' transformation (63%) compared to other industries (52%). These steep expectations could be driven by the customer-focused value propositions that fintech organisations have been using to disrupt the industry. For additional information check Pulse of Fintech KPMG reports.

> Size

On average, one in two businesses with more than \$1 billion in turnover expect 4IR technologies to have a 'very high' impact on all dimensions (50%, compared to 40% of businesses with turnover of less than \$1 billion).

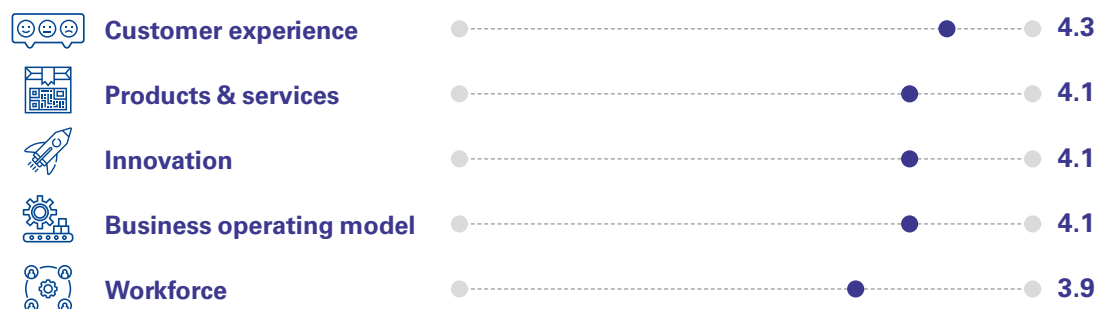
Additionally, on average, four out of five businesses with more than \$1 billion in turnover expect a 'high' or 'very high' impact across all dimensions (82%, compared to 70% of businesses with turnover of less than \$1 billion).

Three out of four companies, independent of employee size, expect 4IR technologies to have a 'high' or 'very high' impact on all dimensions. While there is wide unawareness of what the 4IR entails, most businesses are sure it will profoundly change the expectations of customers and the way they operate today.

The biggest impact of these technologies is expected to be on the customer experience (4.3 average), particularly among businesses with more than \$1 billion turnover (4.6 average).

Q. On a scale of 1 to 5, with 1 being low and 5 being high, how would you rate the level of impact that you believe technologies associated with the Fourth Industrial Revolution will have on the following areas of your organisation in the next 5 years?

Mean score 1 (low) – 5 (high)



	4IR Awareness		Industry		Turnover		Employees	
	Strong	Weak/None	FS	Other	<\$1B	\$1B+	<500	500+
CX	4.4	4.2	4.5	4.2	4.2	4.6	4.2	4.4
Products & Services	4.2	4.0	4.1	4.1	4.0	4.4	4.0	4.2
Innovation	4.2	4.0	4.3	4.0	4.0	4.3	4.1	4.1
Operating Model	4.2	3.9	4.2	4.0	4.0	4.3	4.1	4.1
Workforce	4.1	3.7	3.9	3.9	3.8	4.0	3.9	3.9

Readiness for change

Readiness to deal with forthcoming 4IR change

Around half (54%) of business leaders surveyed feel their organisations are not well prepared to deal with changes resulting from the 4IR. Financial services firms and organisations with low awareness of the 4IR were the most likely to feel their organisation is not well prepared (63% rated 3 or below).

On the other hand, business leaders who have strong 4IR awareness and businesses with more \$1 billion turnover feel more prepared (57% and 58%, respectively, rated 4 and above).

> 4IR Awareness

Six out of 10 businesses with strong 4IR awareness consider themselves to be 'well' or 'very well' prepared, compared to only three out of 10 who have 'weak' or 'no' awareness (57% and 36% of businesses respectively ranked 4 and above). Awareness and understanding is essential for preparation.

The weak awareness group contain fewer businesses that feel well prepared, and a higher number of businesses that are less prepared. One in 10 businesses in this group feel they are 'not at all' prepared (8% vs 3% of businesses with strong awareness).

> Industry

While, in general, fewer than half of business leaders across all industries don't feel adequately prepared for the 4IR, this situation is worse in the financial services industry where three out of five companies are not prepared (63% ranked 3 and lower, vs 51% of other industry).

> Size

Companies with a turnover of more than \$1 billion tend to consider themselves better prepared compared to those with a lower turnover (58% and 41%, respectively).

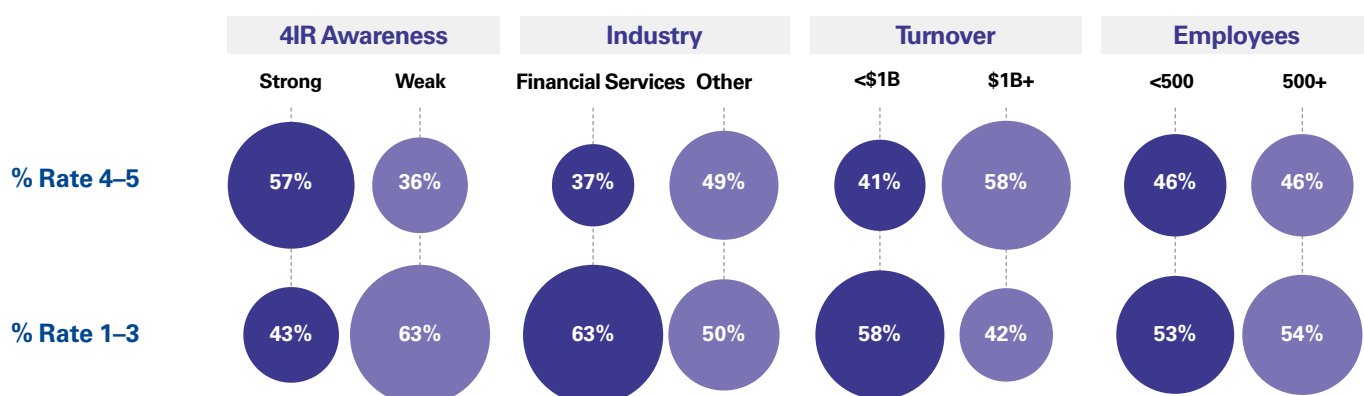
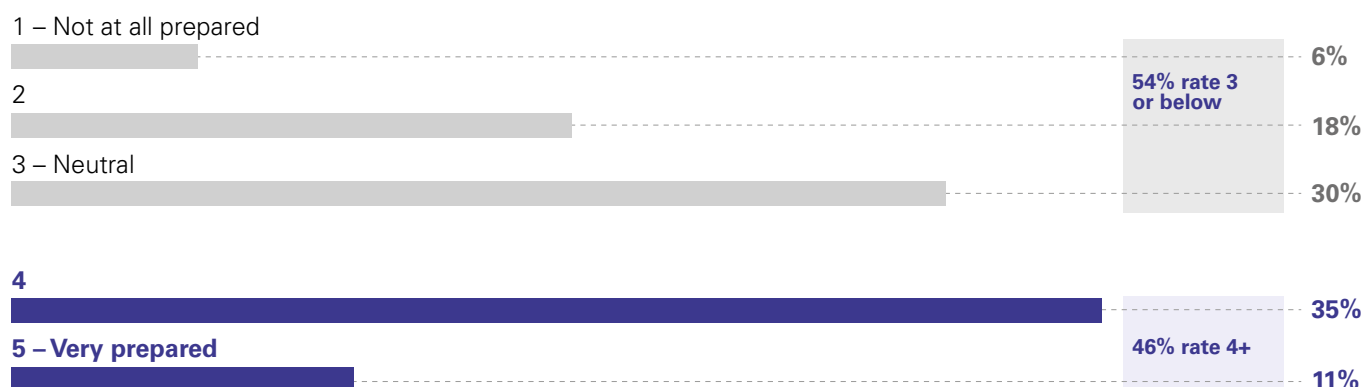
In general, fewer than half of the companies surveyed, independent of employee size, feel well prepared for the 4IR (46%).



"To learn then re-learn continuously will be the paradigm shift of the Fourth Industrial Revolution. The forces of disruption and innovation are rapid. As the technologies converge – artificial intelligence, machine learning, robotics, cloud computing, digital twin, IoT, quantum computing, 3D printing, nanotechnology, augmented reality and 5G – let's guide and shape the revolution in a manner that improves society for future generations."

Jacqui Visch,
Director of Technology
Services, Cyber and Data,
AMP

Q. On a scale of 1 to 5, with 1 being 'not at all prepared' and 5 being 'very prepared', how would you rate your organisation's readiness to deal with forthcoming technological change?



Reasons for lack of readiness

Common themes as to why business leaders are not feeling confident to deal with the 4IR are around lack of understanding, lack of skills in the workforce, legacy technology, and lack of a focused strategic plan.

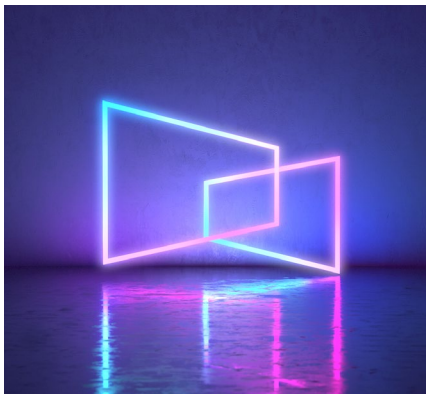
"Lack of understanding and therefore insufficient commitment at board and C-level."

"Bulk of workforce will require reskilling."

"We are still very much a captive of past systems and inherited work methods."

"Focus has been on delivering current services, not investing in the future."

Current adoption



Adoption maturity of key 4IR technologies

Generally, the surveyed businesses are only at the early stages of adoption for most of 4IR technologies.

Larger businesses, those with 500+ employees or with more than \$1 billion turnover, and businesses with a strong awareness of the 4IR are more likely to be at later stages of adoption across several technologies. However, there are important differences in technology adoption maturity, according to the type of technology and the type of business.

For example, while cloud computing is the most widely adopted technology across all business types, the maturity of adoption varies. Businesses with a strong awareness of 4IR, almost two out of five companies have achieved cutting-edge delivery (38%). This is more than double of that achieved by businesses with a weak awareness of 4IR (17%). Interestingly, a larger number of smaller businesses, when measured by number of employees, have also achieved cutting-edge delivery for cloud computing as compared to larger businesses (29% vs 23%).

IoT, RPA and AI are the next most maturely adopted technologies after cloud computing.

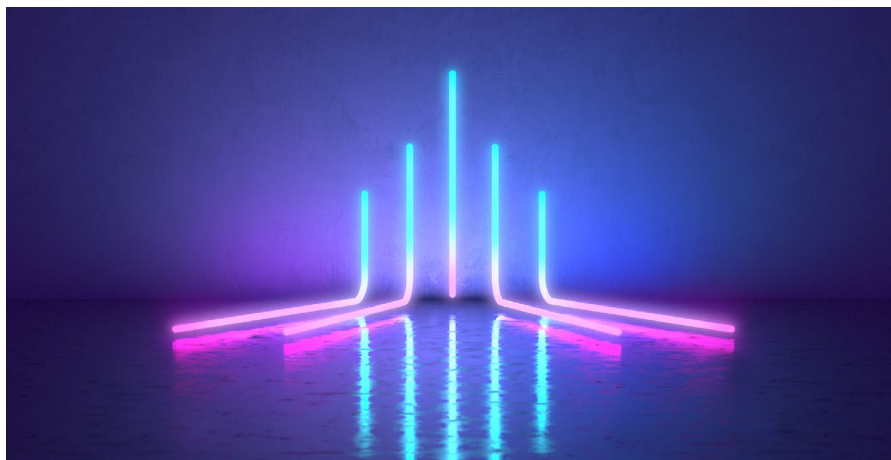
In IoT, on average a quarter of companies have achieved a mature or cutting-edge approach (24%) and leading this are businesses

with a strong understanding of the 4IR where almost one in three has achieved this (29%).

The most noteworthy achievements for RPA and AI are that about one in three companies with more than \$1 billion turnover has achieved a mature approach or a cutting-edge delivery of these technologies (30% and 36% respectively), as well as one in three financial services companies in RPA (29%).

Other factor affecting 4IR technology adoption is the technology availability, as well as the business characteristics and strategic objectives of the company in question.

Overall, the least adopted technologies correspond to 5G and nanotechnologies. When it comes to 5G, while telcos agree on the power of the technology to change many industries, they are less sure of its return on investment. For more information, see KPMG whitepaper *Unlocking the Power of 5G* for Enterprise Customers. Nanotechnology, on the other hand, is at a very early stage of development, and companies are still researching its potential uses and reach. Therefore, it's of little surprise that it remains in such an early adoption stage.



> 4IR Awareness

On average, one out of five businesses with a strong understanding of the 4IR have reached a mature or cutting-edge delivery of the technologies (22%). This is the highest percentage achieved by any of the groups analysed in this document.

On average, only 14% of businesses with a weak understanding of the 4IR have achieved a mature or cutting-edge delivery. This is the lowest percentage achieved across any of the groups analysed in this document. Of these, on average three out of four businesses have a low maturity across 4IR technologies (71% ranked 3 or less).

> Industry

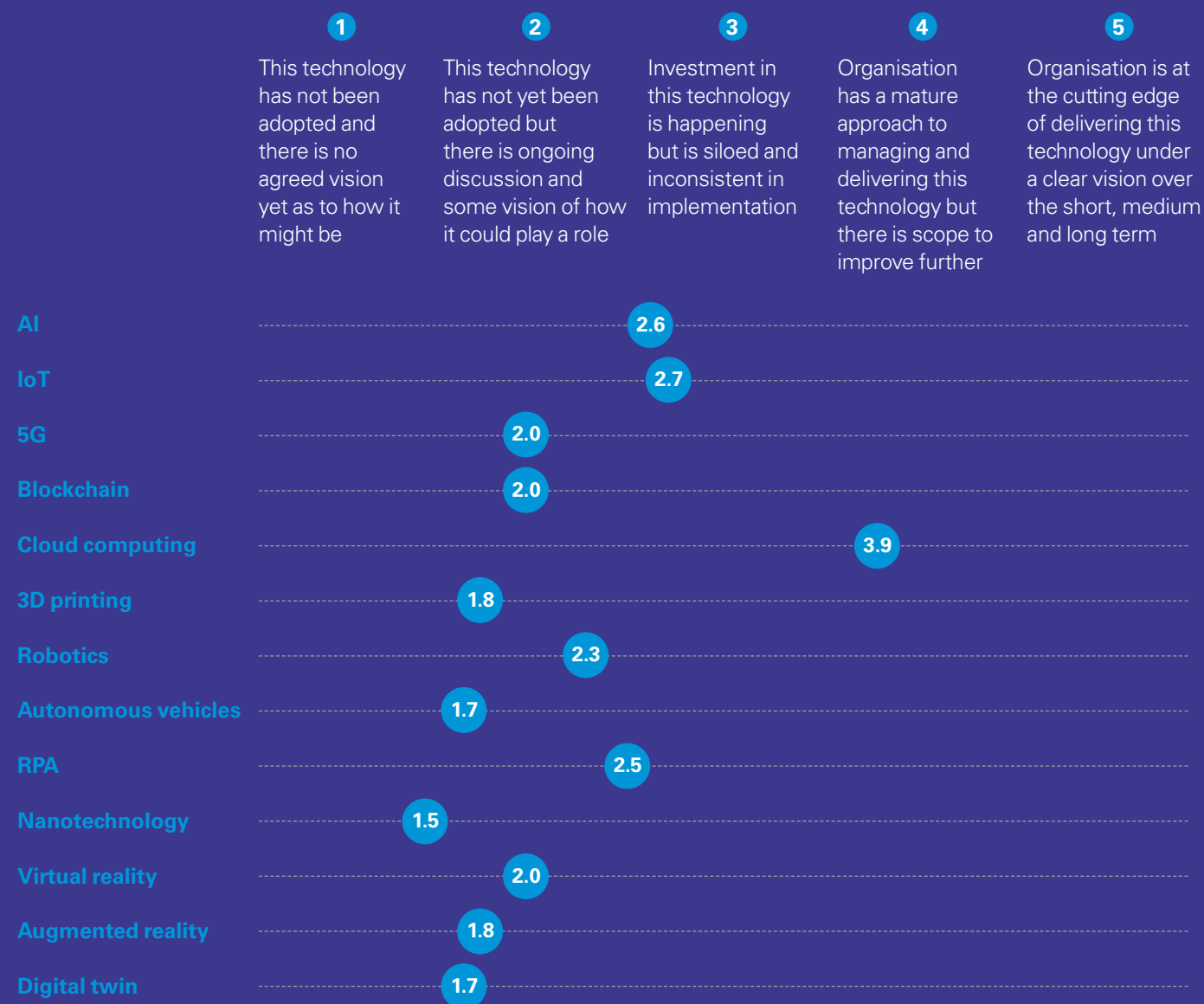
While financial services firms have focused on achieving a mature adoption or cutting-edge delivery of RPA, other industries have focused their efforts on IoT. One in four companies (26%) have achieved a high level of maturity adoption.

> Size

One in five large companies reported having mature or cutting-edge technology adoption in general (20% of companies with more than \$1 billion turnover and 19% of companies with more than 500 employees).

While cloud computing is the most widely adopted technology (regardless of size or type of company), the second most adopted technology for larger companies (those with turnover more than \$1 billion and with more than 500 employees) is RPA. One in three have achieved a mature or cutting-edge RPA adoption (36% and 28%, respectively). On the other hand, the second most adopted technology for smaller companies (turnover less than \$1 billion and fewer than 500 employees) is IoT (25% and 28%, respectively).

Q. How would you describe the maturity of your organisation in terms of adopting the following technologies associated with the Fourth Industrial Revolution?



Mean maturity score (out of 5) shown

	4IR Awareness		Industry		Turnover		Employees	
	Strong	Weak/None	FS	Other	<\$1B	\$1B+	<500	500+
AI	2.9	2.3	2.8	2.4	2.4	3.1	2.4	2.8
IoT	2.9	2.5	2.5	2.8	2.6	2.9	2.6	2.7
5G	2.2	1.9	1.9	2.1	2.0	2.2	1.9	2.2
Blockchain	2.1	1.9	2.1	1.9	1.8	2.4	1.9	2.0
Cloud computing	4.1	3.8	3.9	3.9	3.9	4.1	3.9	3.9
3D printing	2.1	1.7	1.7	1.9	1.8	2.0	1.6	2.1
Robotics	2.5	2.2	2.5	2.2	2.0	3.0	1.9	2.7
Autonomous vehicles	1.9	1.5	1.5	1.8	1.6	1.9	1.6	1.9
RPA	2.7	2.3	2.7	2.4	2.3	3.0	2.2	2.8
Nanotechnology	1.7	1.4	1.5	1.6	1.5	1.6	1.4	1.7
Virtual reality	2.2	1.8	1.8	2.1	1.9	2.2	1.8	2.2
Augmented reality	2.1	1.6	1.7	1.9	1.8	2.0	1.7	2.0
Digital twin	2.1	1.4	1.4	1.9	1.7	1.7	1.7	1.8

Reasons for adoption

Improving the customer experience, productivity and innovation are the top drivers of 4IR technology adoption.

One in three companies chose 'innovate products or services' as a reason for adopting 4IR technology, with strong 4IR awareness as the main reason for adoption. 'Improving customer experience' was the most cited reason for companies with weak 4IR awareness.

In terms of industry, two out of five companies in financial services are driven by the objective of improving customer experience (39%), while in other industries only one out of five companies cited this as the main reason for adoption (18%).

Companies with more than \$1 billion turnover see innovation as the main motivator (26%), and only a few see automation or cost reduction as the goal for technological adoption (8% and 4%, respectively).

Companies with fewer than 500 employees gave automation and increasing productivity almost the same weighting when selecting a leading objective for adoption. These seemingly opposing views may be due to the fact that 64% of respondents in this group consider themselves to have a weak understanding of the 4IR and could lack a strategic direction.

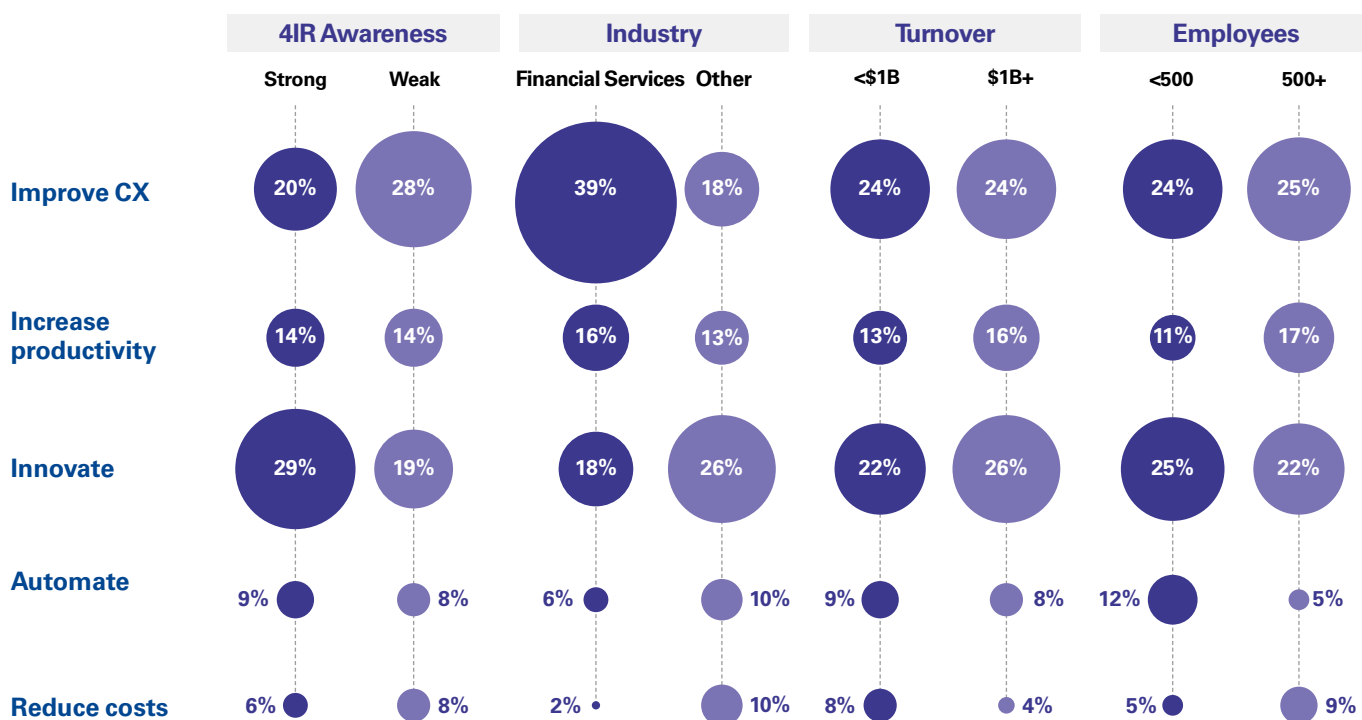
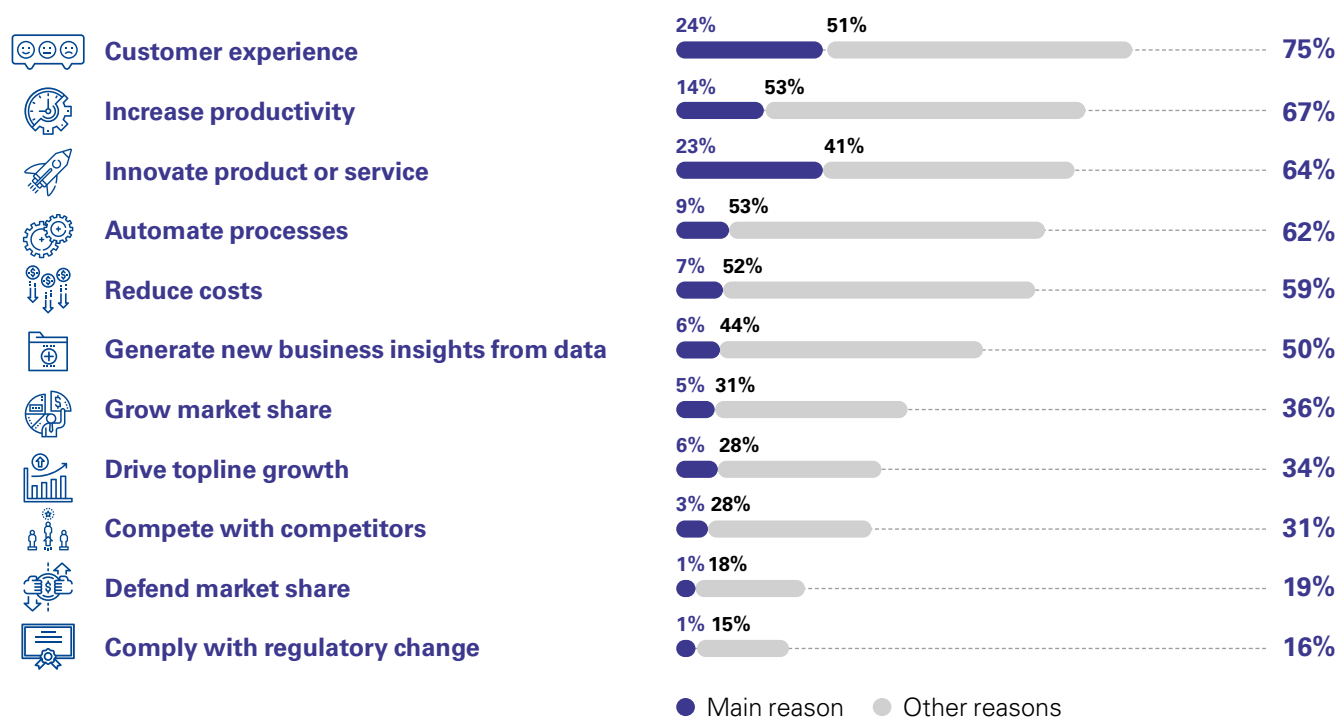
On the other hand, compliance for regulatory change was the least cited reason for adoption. This could signal that technology is moving much faster than regulations and that these institutions might struggle to keep up with innovation.

“Harnessing the benefits of technology to improve citizen outcomes is at the core of the opportunities provided by the 4IR for governments. I expect more cross sectoral collaboration will contribute to this, and for the pace of change to keep increasing. Keeping pace with change will increasingly require agile policy and regulatory frameworks and for the creation of more opportunities to test and trial new technologies to ensure the promises are realised.”



Simon Hunter,
Executive Director, Smart Places,
NSW Department of Planning, Industry and Environment

Q. What is your organisation's primary purpose for adopting or planning to adopt these new technologies?

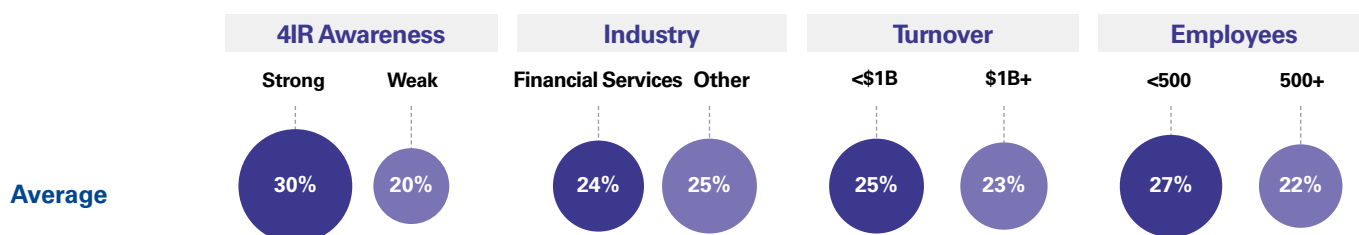
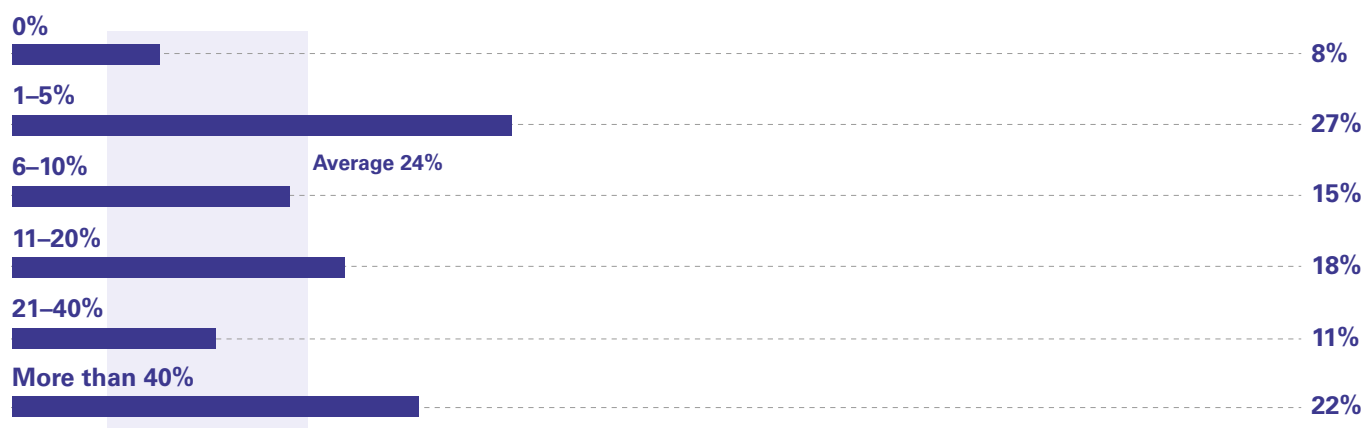


R&D expenditure

Organisations are spending on average a quarter (24%) of their research and development (R&D) expenditure on technologies associated with the 4IR.

This increases to 30% among organisations with strong awareness of the 4IR. One reason for this could be that these businesses believe that technologies will have a bigger impact on processes than those with weak 4IR awareness.

Q. Approximately what proportion of R&D expenditure has your organisation allocated to these new technologies?



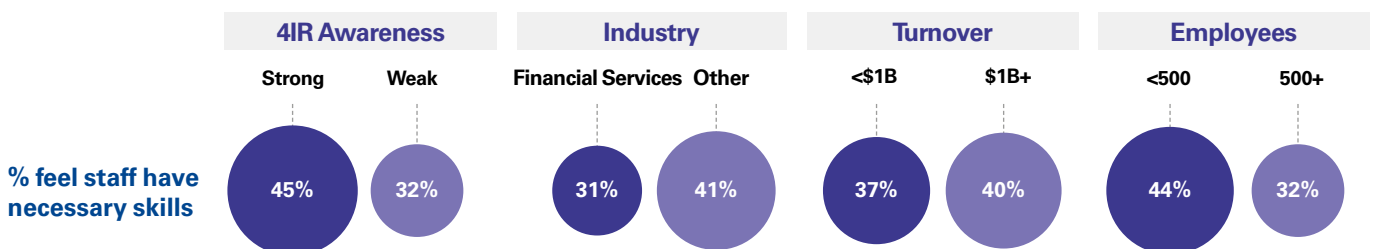
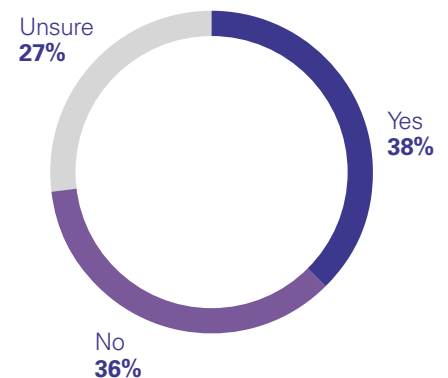
Staff skills

Staff readiness is polarised – about one third feel their staff do have the necessary skills to implement new technologies, one third feel they do not have staff with the necessary skills, and one third is unsure.

Staff readiness perception is the lowest within financial services (31%), closely followed by companies with more than 500 employees and businesses with weak 4IR awareness (32% each). In the case of businesses with weak 4IR awareness, this is probably because the lack of understanding of upcoming technologies and implications makes them unsure of what skills are needed for the work of the future.

Employees in companies with a weak understanding of the 4IR are in a more vulnerable position. These companies believe that the 4IR impact on the workforce and the business process will be smaller, which can limit the company's buy-in to enact change, as well as the resources it dedicates to it. These companies also spend the least on R&D for technologies associated with the 4IR. **Without a clear company direction or dedicated resources, employees are unlikely to have a distinct career path to transition into the work of the future through upskilling or reskilling.**

Q. Do you feel that your staff have the necessary skills to implement these new technologies?



Implementation

Approach to implementation

Around a quarter (27%) of companies have an enterprise-wide strategy and implementation owner for 4IR technologies. Currently, one in 10 (10%) do not have any strategies in place.

This is consistent with 9% of respondents who have not even heard of the term 'Fourth Industrial Revolution' and confirms that awareness is the first step towards implementation.

Smaller organisations with fewer than 500 employees (34%) and those within financial services (31%) are the most likely to have a business-wide strategy and implementation owner.

While the approach to implementation depends largely on the business model and needs, a business-wide technology strategy is necessary to reach more mature levels of implementation. This is because in order to vertically integrate technologies across the organisation, data is needed for integration through technical and business processes in order to create meaningful and valuable information.

Q. Which of the following statements best describes your organisation's approach to implementing these new technologies?

Business-wide technology strategy owner determines which technologies are selected and manages how they are implemented



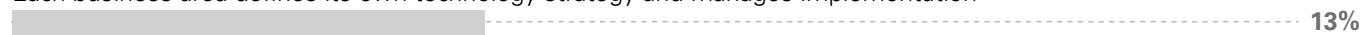
Business-wide technology strategy owner determines which technologies are selected but implementation is managed by each business area



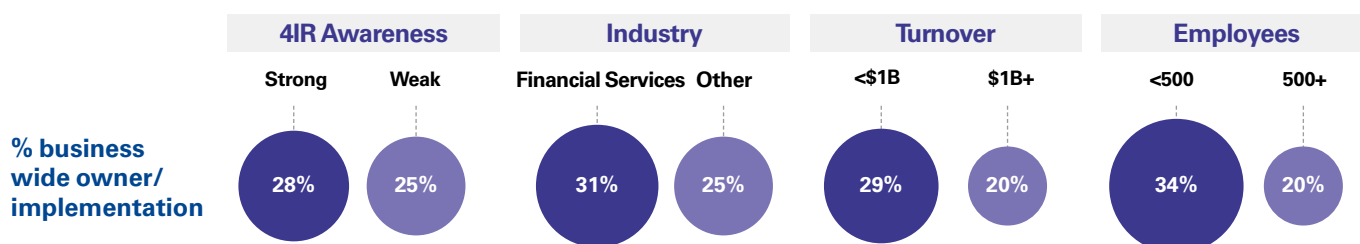
A broad business-wide technology strategy guides technology investment but ultimately each business area can make autonomous decisions



Each business area defines its own technology strategy and manages implementation



There are currently no strategies in place to guide new technology implementation



Challenges and enablers

Challenges and enablers to adoption

Staff, legacy technologies and capital are seen as the biggest challenges to adoption of these technologies.

While companies with strong 4IR awareness cite technology complexity as one of the top three challenges for technology adoption, companies with weak 4IR understanding see lack of capital for new investment as a main impediment. Companies with strong 4IR awareness have a higher probability of having a business adoption strategy and have devoted a larger percentage of their R&D budget to technologies associated with the 4IR. This can translate into a higher buy-in from managers to develop new projects, as well as realisation of the added complexity of the new technologies.

Despite legacy technologies being enablers of efficiencies for financial services and big companies (more than \$1 billion turnover and more than 500 employees) in the past, they are now the main challenge for adopting new 4IR technologies.

Leadership, staff and strategy are seen as the biggest enablers across all business types, and only financial services firms cited 'reducing ethical risks' as one of the top enablers for adoption. This could be largely driven by the recent Royal Commission into Financial Services. KPMG's *Rebuilding Trust* report details how the Australian

banking and financial services sector needs to rebuild trust after prioritising short-term profit at the expense of basic standards.

Interestingly, staff skills are perceived as both a challenge and an enabler.

Businesses with strong 4IR awareness realise they will need to build on the capabilities of their workforce to further support growth.

For businesses with a weak understanding of the 4IR, the situation may be more problematic. Without a clear understanding of what the 4IR entails and a lack of capital to devote to projects, creating a path to upskill and reskill employees is difficult to achieve. Yet, while almost one in two companies in this group see staff skills as a challenge, the same group sees them as an enabler. This disagreement adds to the confusion about the need to enhance employees' abilities.

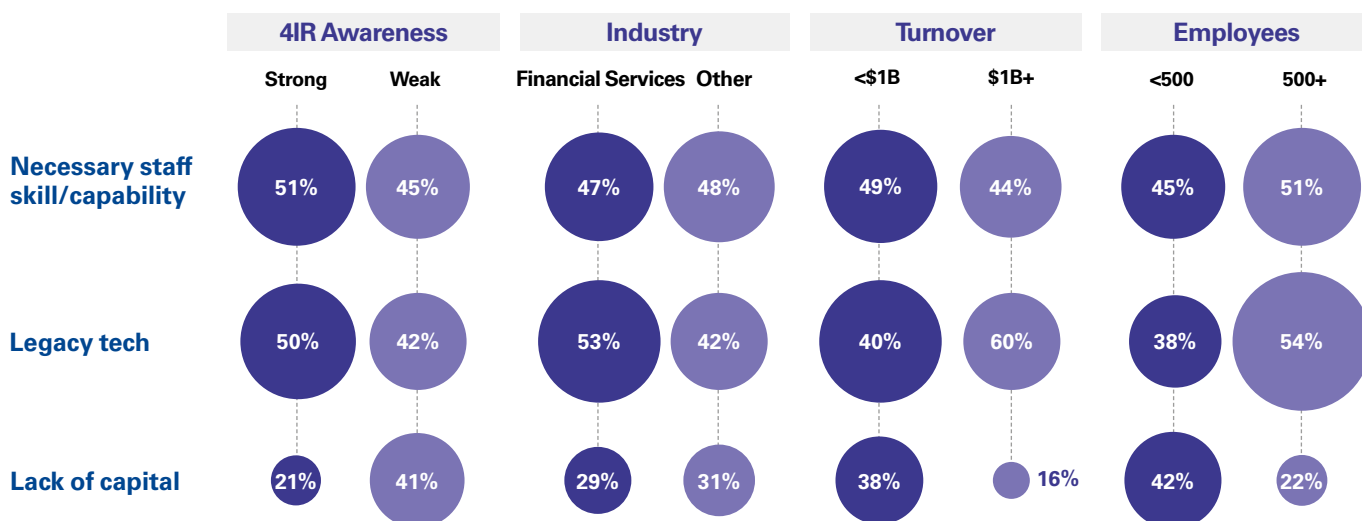
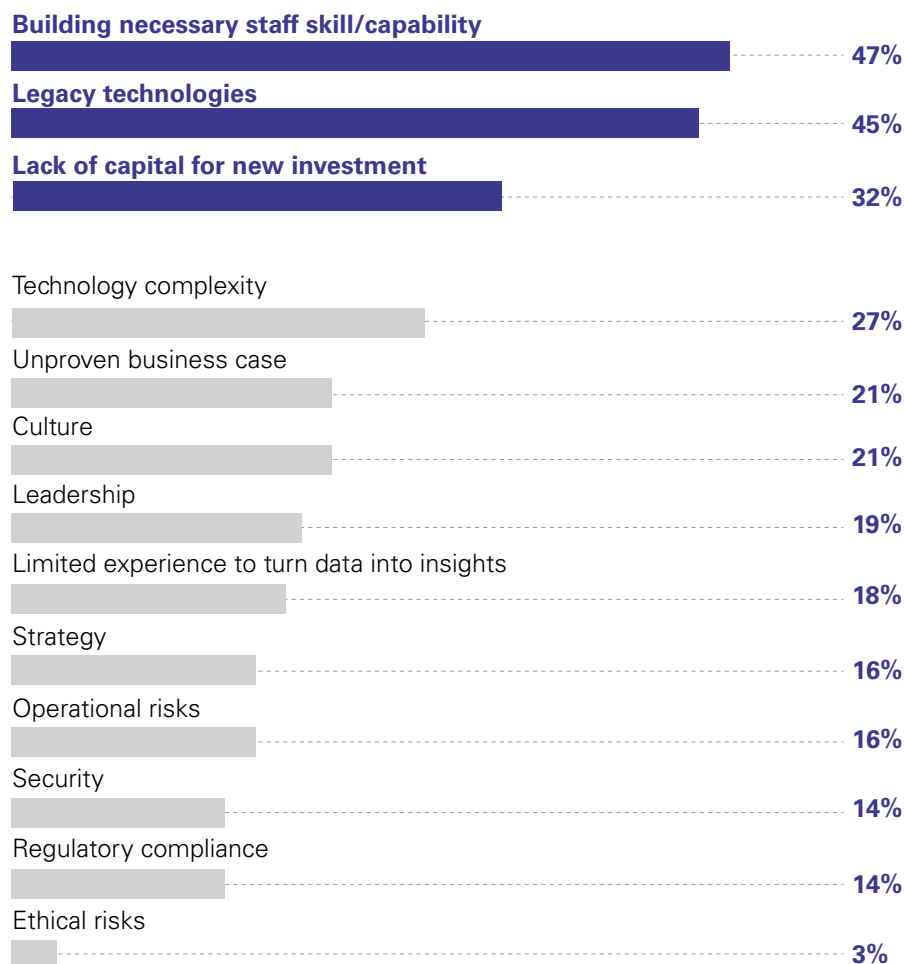
Regardless of the industry and the position, life-long learning will be a necessary condition for future employment and companies that support strategy-building in this regard can add great value for businesses and employees alike.

“The Fourth Industrial Revolution is fast becoming embedded into our digital landscape, connecting natural, physical and human interactions together. Over the past 12 months we have seen rapid expansion of IoT data networks and the market is responding with a proliferation of solutions and platforms, with interoperability or lack thereof still a major challenge. 2020 will be the year of connected water, environment and energy and the critical role that IoT, AI and machine learning play in these sectors cannot be underestimated.”

Catherine Caruana-McManus,
Co-Founder and Director,
Sales and Strategy at Meshed,
Board Director of the IoT
Alliance Australia (IoTAA)

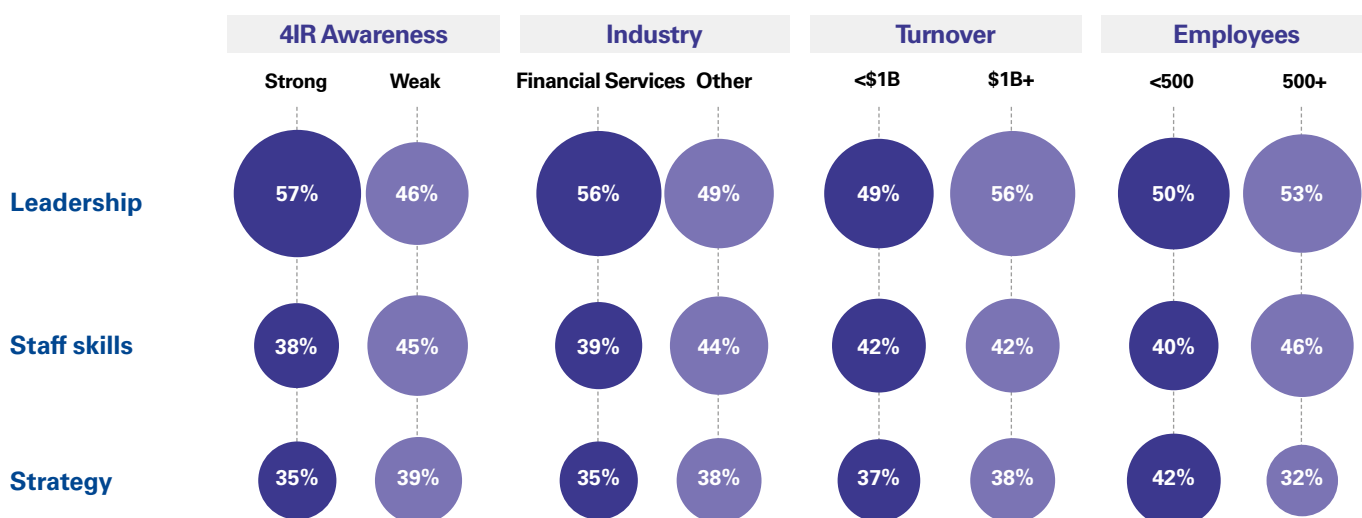
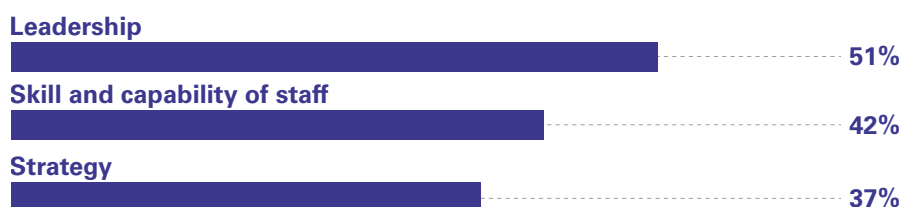
Q. In your opinion, what are the top three challenges facing your organisation in adopting these new technologies?

% Top 3 Challenges



Q. In your opinion, what are the most important factors enabling adoption of new technologies in your organisation?

% Top 3 Enablers



Final thoughts

Final comments

Business leaders were asked for any additional feedback they had on the 4IR. They generally focused on the opportunities the 4IR will bring, and the need for businesses to adapt and to overcome the associated challenges. Common concerns and challenges mentioned were around an overall skills shortage and a need for greater investment in relevant education and training. Skills hiring, training and development that support 4IR technologies will need a clear understanding and strategy. Finding partners that can support strategy and capability building adapted to each company's individual needs will be fundamental for the 4IR.

"It's coming like a train, from nowhere to front-of-mind attention. Use it or else."

"There is definitely significant opportunity, but it comes with a large challenge, increasing risks not just around implementation, leadership, culture and skills, but also increasing cyber threats."

"We are still coming to grips with the opportunities and implications, but are aggressively exploring selected areas through a start-up subsidiary."

"There is an opportunity for Australia to participate, but it needs to improve the investment in university students in science, math and engineering, and to create a culture that encourages technology development."

"This will accelerate the decline of middle-class professions. A fundamental shift is required in educating and training the current workforce and students in leading this transformation."

About



KPMG Digital Delta

New digital technologies and disruptive business models mean many organisations are struggling to keep pace with the transformative changes required to drive growth and meet customer demands.

KPMG Digital Delta provides end-to-end digital innovation and transformation services to help overcome this.

We work with clients to re-imagine and re-invent their organisations to become world class digital enterprises using advanced technologies, data and human insights:

- formulating strategies that re-imagine organisations to help them digitally transform to position their business as a leader
- harnessing innovation from the Fourth Industrial Revolution to adopt advanced technologies that transform performance across their business
- actioning insights from trusted data to enable clients to consistently and quickly make the right decisions for their business
- building an adaptive organisation that can respond to change with speed and confidence and one team
- thriving as a connected enterprise, aligning the front, middle and back office to consistently deliver on the digital promise.

We bring together best practice knowledge and technology, along with deep expertise across all industries.

[KPMG.com/au/DigitalDelta](https://www.kpmg.com/au/DigitalDelta)



Faethm

Faethm is the world's data source for the Fourth Industrial Revolution and the Future of Work.

Faethm is a fast-growth and globally unique AI Analytics SaaS Platform. Launched in Sydney in late 2017, Faethm is already helping companies and governments in North America, Europe and Asia Pacific to create economic and social value from the impact of emerging technologies.

Faethm shows you the huge opportunities for companies and governments that get ahead of the curve. Faethm has made it possible to visualise and measure how to transition people, companies and industries, with the right skill development, infrastructure, investment and services.

Faethm shows leaders how they can equip their businesses and communities for the future.

Faethm [Fath-uh m], (-the original Celtic spelling of Fathom), Noun and verb, to learn, a measure of depth, "the span of outstretched arms", and a welcoming gesture for the future.

www.faethm.ai

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