

Future of Skills 2019

Anticipating what's
next for your business



An Asia-Pacific Edition.

About this report

In the “Future of Skills” report, we have generated behavioural insights based on billions of data points from member engagement on LinkedIn.

These insights aim to understand:

- **What are the rising skills in the Asia-Pacific region (APAC)?**
- **How rising skills data can signal the transformations and innovations in industries?**
- **How roles are evolving and how you can future-proof your employees and business?**

We also surveyed 4,136 employees and 844 Learning & Development (L&D) professionals in Australia, India, Japan and Singapore on the state of workplace learning and skills requirements.

This report equips business leaders and HR professionals with insights into how skills are playing a bigger role in shaping the evolution of talent. Knowing what skills are in demand, and how traditional roles are evolving will help organisations prepare for and navigate the talent crunch.

Methodology:

* We looked at skills data listed by members on our platform in the last 5 years. Rising skills are skills that have experienced exponential growth. i.e. increase in number at a constantly growing rate month-on-month.

** Demand: The ratio of average number of LinkedIn Recruiter InMails sent to professionals with Rising Skills over the past 12 months, versus the average number of InMails sent to other professionals in APAC.

What are Rising Skills?

Rising skills are skills that have experienced exponential growth in the last few years in adoption by professionals. It's not only professionals adopting these skills, organisations are also vying for talent with these skills. These skills may be nascent now but will potentially see wide-scale adoption in the future.*



Executive summary

Talent drives business, and skills drive talent

By 2020, APAC will face a labour shortage of 12.3 million workers at an annual opportunity cost of US\$4.2 trillion.¹ At the heart of this crunch lies skills instability. By 2020, it is expected that 42 percent of the core skills required for a job will change.²

Mapping out what existing talent is capable of and investing in reskilling early can take the sting out of disruption. Having the right data on rising skills in your industry and the skills gap in your workforce can help you navigate through this time of change.

Rising skills are an indicator of transformation & innovation in your industry

Rising skills can be used as a signpost for how your industry is transforming or innovating. It can also be a sign of where your competitors are investing. Are they venturing into new businesses, entering new markets or pivoting their business on a different trajectory?

Using rising skills as a signal, you can make decisions and take actions to ensure your business stays competitive in the market.

Soft skills increase in value with the rise of artificial intelligence (AI) and automation

While rising skills are unsurprisingly largely dominated by tech skills, soft skills are also growing in prominence. This is because tech is breaking out of its silos, and soft skills, such as creativity, problem solving, and critical thinking are in demand to expand the application of new technology.

LinkedIn research shows that soft skills are increasingly valued. They are seen as key to navigating more automation and AI in the workplace. Together, soft skills and rising skills paint the picture of adaptable, flexible talent ready to navigate new demands in their evolving roles.

Insights to impact: Make talent a boardroom conversation

A future-facing organisation does not happen by chance. It requires planning for change early, hiring talent that can efficiently adapt, and developing the existing team to harness strengths. LinkedIn research shows almost two in five APAC employees have left a company due to inadequate learning and development opportunities.

Investing in talent requires the same detailed attention as investing in new technology. Accurate, real-time data is key to this challenge.

Foresight to action: Human resources as a strategic partner

Rather than thinking of talent as the last step in a business strategy, conversations about talent should be at the core of defining the business strategy.

Collaboration between HR and business leaders is key. Together they can build a workforce plan that will reflect the current abilities and future needs. This workforce plan can be a combination of acquiring new talent while also building skills from within.

Talent drives business.
And skills drive talent



Lack of availability of key skills: Driver of talent crunch

Today every business leader, every hiring manager, and every recruiter is facing the pinch of the talent crunch.

In fact by 2020, APAC will face a labour shortage of 12.3 million workers, rising to 47 million in the following decade.³ That represents an annual opportunity cost of US\$4.2 trillion (study by Korn Ferry).⁴

APAC's talent crunch is exacerbated because the region exports more talent than it imports.⁵

A very significant driver of this talent crunch is the lack of availability of skills and skills instability. The 2018 PWC CEO survey found 80 percent of CEOs are worried about the availability of key skills.⁶ According to the World Economic Forum and LinkedIn study on the Future of Jobs, by 2022, the skills required to perform most jobs will have shifted significantly. Globally, an average of 42 percent of the core skills required to perform a job will change between 2018 and 2022.⁷

What does this mean for your business?

Use skills data to navigate the talent crunch.

The short shelf-life and volatility of skills means assessing your organisation's talent and skills pool is now urgent. How do you ensure your skilled talent pool does not become obsolete? Leveraging an agile talent pool, that is both equipped with the latest skills and motivated to keep learning, will be key to navigating the talent crunch and retaining a sustainable competitive advantage.

The skills that got you to where you are today are not the skills you will need for the future.

For example, when we compared the digital skills in demand in 2017 vs 2016, skills like software engineering management ranked high in demand in 2016 but came down lower in rank in 2017 whereas skills like AI, Big Data & Cloud Computing (ABC skills) climbed up the ranks. The demand for these ABC skills continues to grow in 2018 & 2019 as well.⁸

80%

of CEOs are worried about the availability of key skills.⁹



Rising skills in Asia-Pacific



Rising skills: Dominated by tech; but some non-tech stand out

Social media marketing, compliance and human-centred design stand out

Here is more detailed information on the relevance of these rising skills categories for businesses and jobs that require these skills.



Compliance

What do professionals with these skills do?

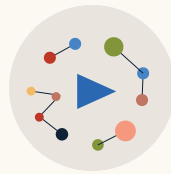
Ensuring that a company complies with regulatory and legal requirements



Social Media Marketing

What do professionals with these skills do?

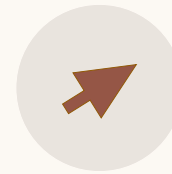
Promoting products and/or services through social media platforms to achieve business goals



Continuous Integration

What do professionals with these skills do?

Integrating codes into a shared repository to detect problems continuously



Workflow Automation

What do professionals with these skills do?

Automating manual processes based on pre-defined business rules



Gesture Recognition Technology

What do professionals with these skills do?

Interpreting human gestures, using a computing device, as an input for applications and devices

Examples of occupations which have these skills

- Chief Data Officer
- Compliance Officer
- Risk Management Officer

Examples of occupations which have these skills

- Digital Marketing Specialist
- Marketing Manager
- Social Media Marketing Specialist

Examples of occupations which have these skills

- DevOps Engineer
- Full Stack Engineer
- Software Engineer

Examples of occupations which have these skills

- Consultant
- Project Manager
- Software Engineer

Examples of occupations which have these skills

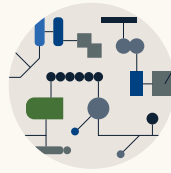
- Mobile Engineer
- Researcher
- Software Engineer



Blockchain

What do professionals with these skills do?

Setting up and managing a distributed and decentralised public ledger



Artificial Intelligence

What do professionals with these skills do?

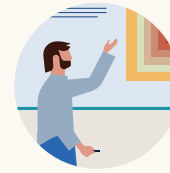
Studying and designing intelligent agents to perform human-like tasks



Robotic Process Automation (RPA)

What do professionals with these skills do?

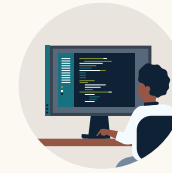
Automating high volume, repeatable business tasks and processes using software with artificial intelligence and machine learning capabilities



Human-Centred Design

What do professionals with these skills do?

Developing solutions to problems with a deep focus of understanding the human perspective in all steps of the process



Frontend Web Development

What do professionals with these skills do?

Converting data to a graphical interface to build websites or web apps

Examples of occupations which have these skills

- Blockchain Developer
- Chief Technology Officer
- Consultant

Examples of occupations which have these skills

- Business Analyst
- Data Scientist
- Software Engineer

Examples of occupations which have these skills

- Business Analyst
- Consultant
- Robotics Engineer

Examples of occupations which have these skills

- Graphics Designer
- Product Designer
- User Experience Designer

Examples of occupations which have these skills

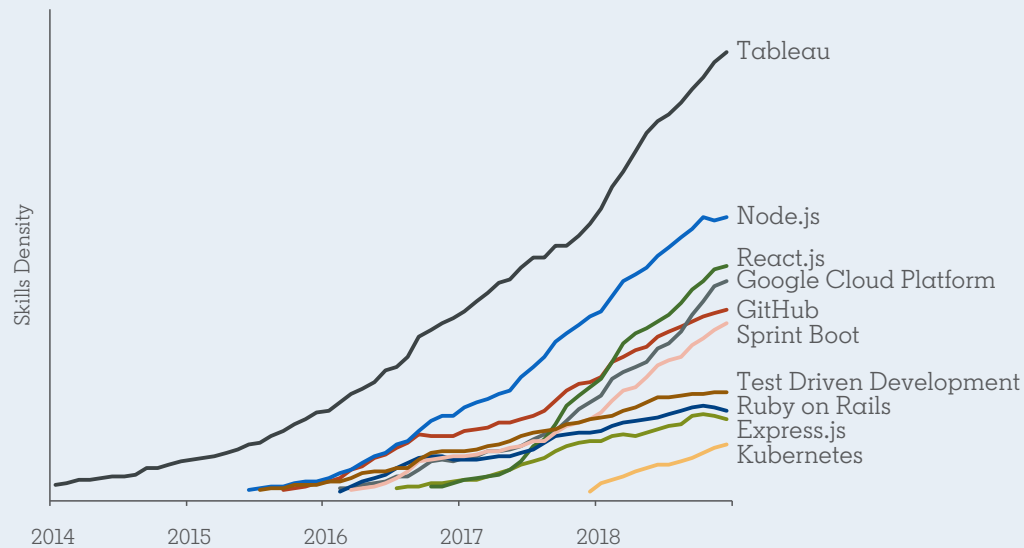
- Frontend Developer
- Full Stack Engineer
- Web Developer

Note: Certain jobs or roles require a combination of two or more skills from different skills categories.

Rising skills: An indicator of change



Company A: On the horizon for digital transformation

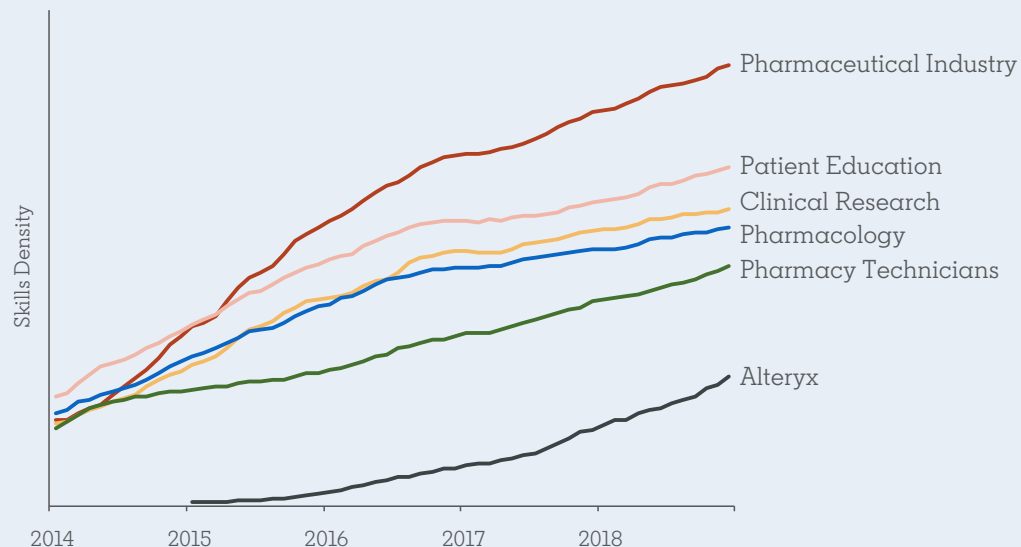


Rising skills are an indicator of transformation & innovation in your industry

Rising skills can be used to forecast where industries are going. Examining what rising skills certain industries are hiring for shows what changes they are anticipating.

Let's look at a real example of two brick-and-mortar retail firms, which we have anonymised as companies A and B. Our data shows that company A has been rapidly hiring professionals with digital and technology related skills whereas company B has been hiring for a diversified set of skills which are primarily non-digital. Looking at this data, one can come to a conclusion that company A is on the path of digital transformation while company B has a different strategy.

Company B: Diversifying into a new retail category



Skills Density = % of employees with that particular skill in the organisation

Rising skills can also show how industry is adopting new technology into their traditional offering.

Retail giants like Amazon and Walmart are automating areas of their business, such as in their warehouses and stock management. With this automation, both retailers have made extensive investment in their staff skills, to offer alternative pathways for workers.¹⁰

Amazon is training some of its warehouse workers in data skills, so that existing talent can be harnessed in new and emerging parts of the business.¹¹ The rising skills companies are investing in show where they see future growth for their business.

Meanwhile, OCBC bank – one of the biggest banks in Singapore – has launched OCBC RoboInvest, which helps investors maximise returns without having to get into the nitty gritty of day-to-day investing.¹²

“If you bring in a new skillset too early, you run the risk that people could get frustrated because the work is not fully there. The flip side is the advantage you get by bringing new skills in early as early adopters, catalysts and champions demonstrating how that skill is going to be applied within our organisation.”



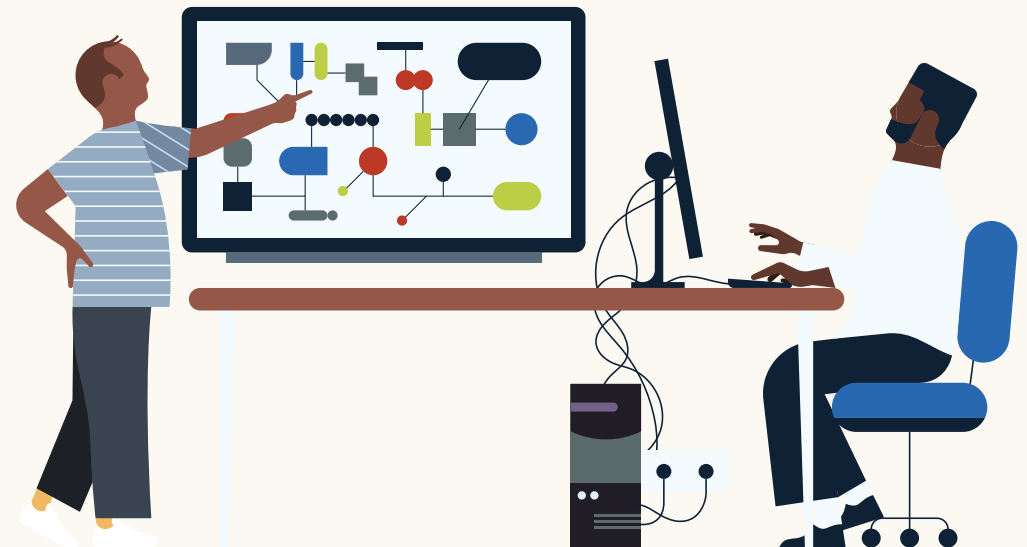
Tess Walton
Head of Workforce Portfolio,
ANZ Bank

What does this mean for your business?



Use skills data to make business decisions.

Knowing rising skills helps organisations keep their finger not only on the pulse of the talent market, but also knowing what is next in their industry. Before branching out into new service or product offerings, companies have been hiring talent with rising skills in anticipation for what they will need. Rising skills are a real-time insight into how disruption is unfolding, how roles are evolving and even how industries are already beginning to respond with upskilling. Using these signals from rising skills, you can make decisions and take actions to ensure your business stays competitive in the market.



Rising skills also reflect evolution of roles

Rising skills are signalling the shifts in skill demands of traditional roles, and in turn accelerating demand for entirely new roles. LinkedIn has crunched its data to show how roles have evolved over a five-year period by examining what skills have become more prevalent.

Roles with greater reliance on the human, or soft skills are also expected to grow in demand. To reduce customer churn, the Software-as-a-Service (SaaS) industry created roles to support this strategic initiative. The rise of the Customer Success Manager (CSM) is one such example.

The CSM must rely on their soft skills to individualise the product and deliver the best outcome for clients based on their particular needs.

Brand Marketing



Increase in Focus

Social media, measure report performance, goals and ROI, monitor market trends, competitors activities

Marketing roles, for example, show how rising skills are reshaping and evolving how marketers perform and succeed in their jobs.

LinkedIn data shows marketers are increasingly indicating social media marketing related keywords on their profiles. The acceleration in demand for social media marketing skills has created an entirely new role, the Social Media Specialist – essentially a marketer whose skills help them harness the power of social media to reach consumers.

What does this mean for your business?



Use skills data to shape the future of roles.

Organisations may be unaware of the potential of their talent. Understanding how roles are evolving can be used to develop talent in-house, rather than bringing in new talent. Equipping talent with rising skills is not just about future-proofing the talent, it is helping the organisation to evolve and remain nimble amid change.





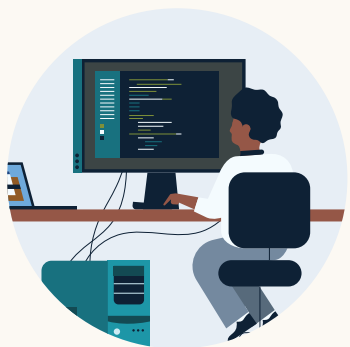
Talent Acquisition

Increase in Focus

Hiring managers, pre-screen candidates, **social media**, verifying qualifications, screen candidates, interviews pre screen, tracking systems

Just as talent is adapting in their evolving roles, so too are those whose role it is to spot talent. No longer is talent acquisition about hiring in response to an organisation's need, it is about anticipating what business will demand, analysing how existing talent can fill those needs and where opportunity to advance them is. The role is increasingly data driven.

Rising skills also feature in the evolving talent acquisition roles – social media is now a key tool for attracting and identifying talent, as well as monitoring more generally how the talent market is moving.



Data Analyst | Data Scientist

Increase in Focus

Data Analyst

Machine learning, data visualisation, data analysis, statistical efficiency quality

Data Scientist

Machine learning, deep learning, natural language processing, data visualisation, neural networks, time series forecasting

Data Analysts are also going under a transformation. Rising skills such as machine learning, data visualisation, and statistical analysis have seen an increase in adoption – skills deemed to be relevant to future job demands. The thrust of their job remains the same, but how they do it is changing.

“ Roles are dynamic: automation displaces, reduces and changes many of the activities associated with roles, and evolving ways of working and agile methods require flexibility and transferability. These environmental changes have reduced the importance of a defined scope for roles. As a result, it's less about hiring people solely for a specific 'role' that exists at a point in time, and more about the skills, experience and knowledge they use for delivering outcomes. ”



Tess Walton

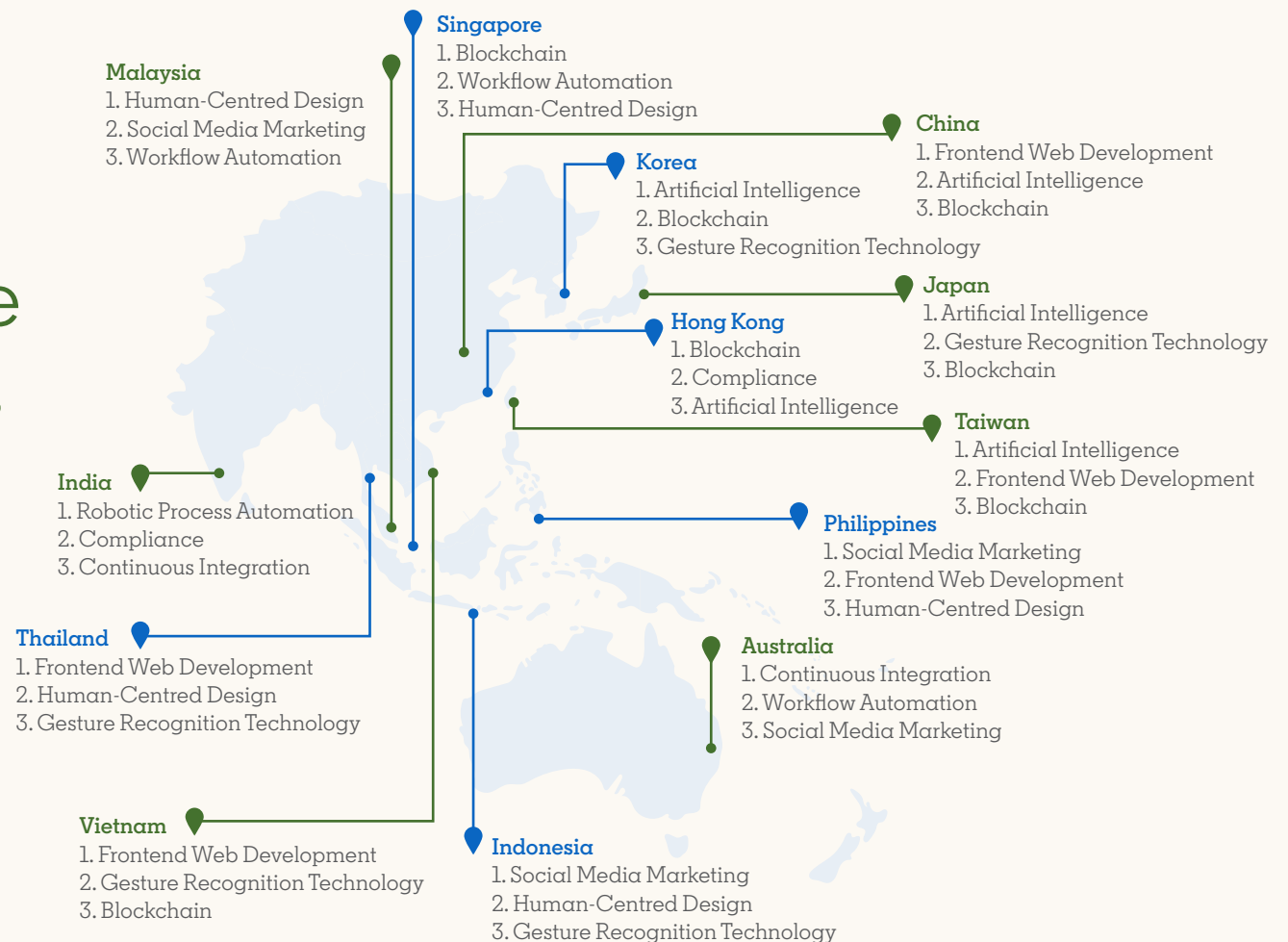
Head of Workforce Portfolio,
ANZ Bank

Where to find rising skills

If your organisation is looking for talent with certain rising skills, LinkedIn data can tell you where to find them. Understanding what regions are home to rising skills can also provide insight into the trends driving certain skills to surface.

LinkedIn has broken down country-by-country which top three rising skills categories are more prevalent compared to the APAC average.

A country view of the rising skills



Methodology: Top 3 rising skills categories that are over-indexing, i.e. have a higher prominence, in the country vs overall APAC

Soft Skills: Increase in value with AI & automation



Soft skills increase in value with the rise of AI and automation

The rise of AI, automation and robots is rapidly changing the talent and skills market. But it is not just driving demand for technical, hard skills – like coding, cloud-computing and AI. Soft skills are highly sought after in the field.

89% of executives say that it is difficult to find people with soft skills.¹³ This is congruent with the survey done by World Economic Forum; Even as demand for technology competencies increase, soft skills such as analytical thinking, active learning and creativity will retain or increase their value.¹⁴

In our digital, hyper-connected world, it is easy for information overload to occur. Soft skills, like creativity, adaptability, collaboration and time management, allow talent to navigate new information and make decisions effectively.

LinkedIn surveyed both employees and L&D professionals across APAC. The survey found both groups place a lot of value on soft skills, particularly when it comes to career progression.

While robots and automation may displace routine work done by humans, 44 percent of surveyed APAC talent thought higher level thinking would remain vital in a tech dominated world.

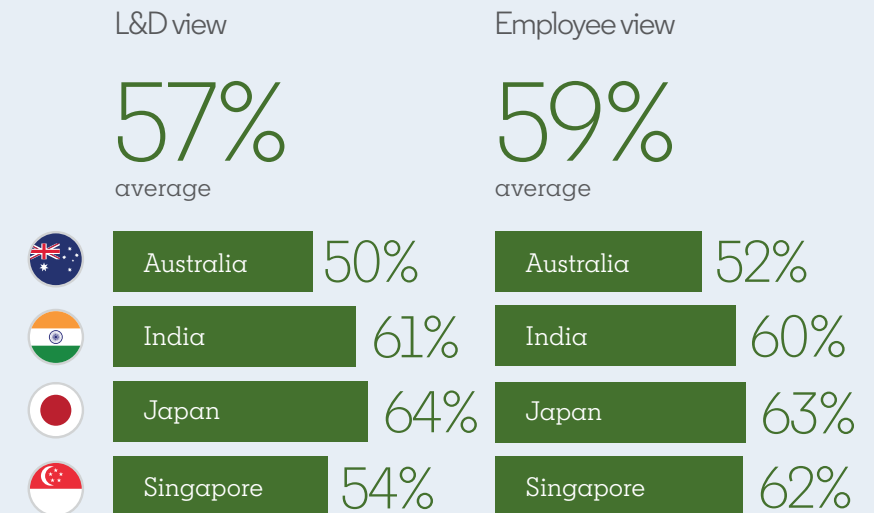
Adjusting to robots in the workplace will require soft skills. 43 percent of APAC employees say soft skills will help them adjust and retrain to keep their roles.

“In my view, in the next 10 years, the skills you need are the soft skills. You will need philosophy, psychology and emotional science because the biggest challenge in society in the next 10 years is having to reimagine the rules of society. What does it mean to have AI in our lives?”

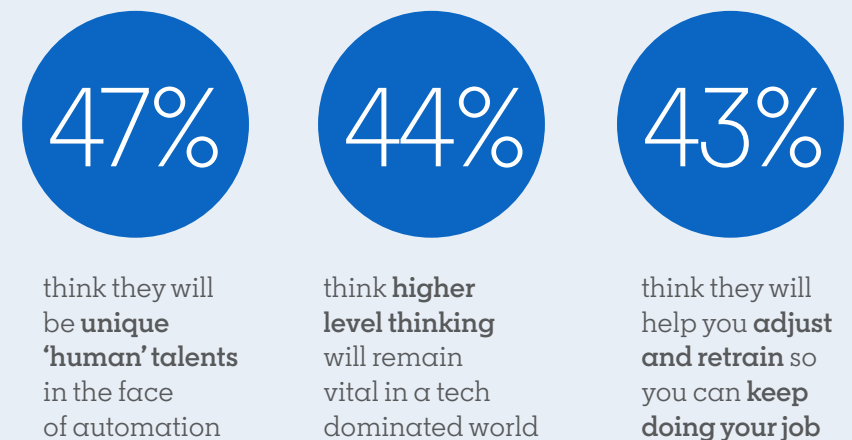


Piyush Gupta
CEO, DBS Bank

Soft skills are more important for career progression

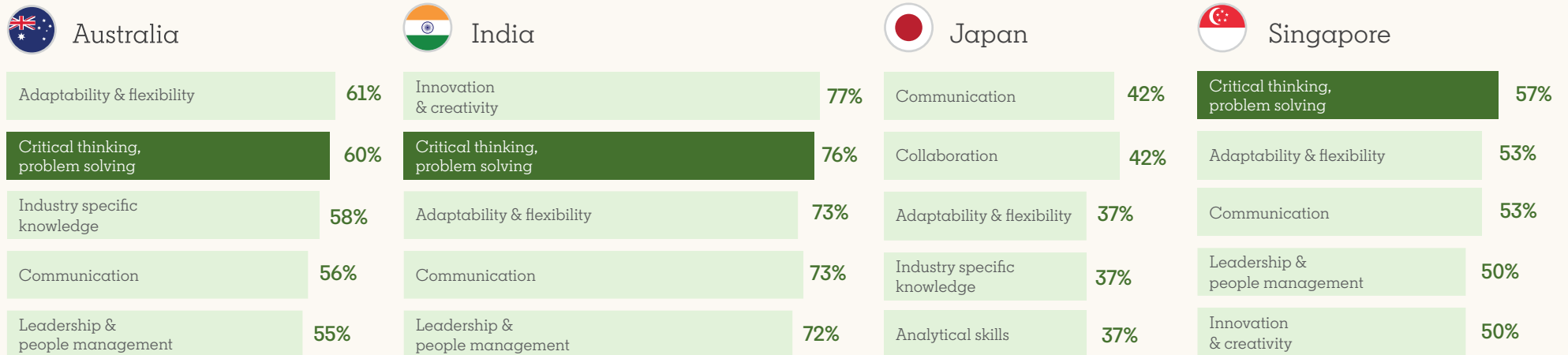


Why soft skills?



Critical thinking emerges as a top area of need, but desired soft skills vary by market

Skills employees feel will be very important to the future of work



L&D programmes should prioritise (and ideally personalise) the skills focus to the wants of local employees.

What does this mean for your business?

Soft skills are vital to get the most from our digital world, whether it is understanding data, communicating clearly, or managing projects. No matter how technical the role, it is the soft skills that will sort the good from the great. So the question is how are you making it easy for your workforce to learn these soft skills?

“The one thing that is going to be difficult to replace with technology is the human touch – empathy, creativity and innovation can’t be replaced by automation.”



Regan Taikitsadaporn
Chief Human Resources Officer,
Marriott International

Insights to impact: Make talent a boardroom conversation



What do these trends mean for a CEO or Business Leader?



1. Capitalise on real-time insights and make talent a boardroom conversation

Most executive decision-making uses data from sales and marketing, competitive analysis and financial statements. But data on the talent marketplace, like the rising skills, can enable you to include talent as an important part of your decision-making and lead to better business outcomes.

Data and insights can also be used to compare an organisation's workforce against the wider industry and competitors. Tools like [LinkedIn Talent Insights](#) can unlock real-time insights on the changes in the talent marketplace – trends over time, talent flows and competitive intelligence. These insights can not only inform talent acquisition, development and retention, but also business strategies.

Companies that embarked on the upskilling and reskilling journey

Accenture, which provides a wide range of professional services, “re-skilled” nearly 300,000 of their total body of 469,000 employees, investing around US\$1 billion annually in training.¹⁶ A pilot program, Job Buddy, which lets talent assess how likely their job is to be automated and what skills they should learn to remain work-ready, had an 85 percent uptake.¹⁷

Wipro, a global business process service company, has seen its investment in reskilling talent pay off with higher revenue.¹⁸ In 2017, Wipro trained 90,000 technical employees in digital training, and the company recorded a boost to revenue per employee of 7 percent.¹⁹

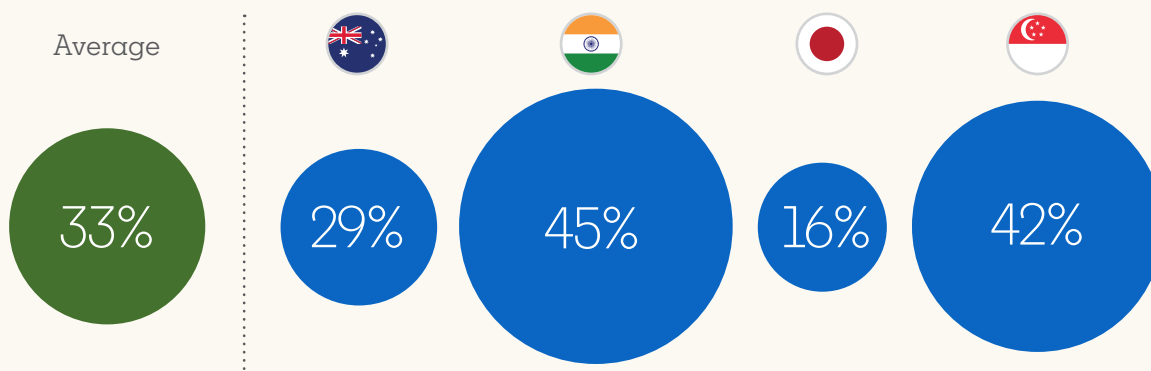
AT&T, the telecommunications giant, has had 180,000 workers go through its Future Ready program.²⁰ Talent is given insight into career prospects, including what jobs are in demand, as well as the chance to understand their own skills and a variety of different courses.²¹



2. Create, nurture and commit to a culture of learning to shape the future of your business

When the market is competitive, talent retention is vital to business success. LinkedIn survey results show almost two in five APAC employees have left a company because there were insufficient learning and development opportunities.

Employees who have left a company because it lacked L&D opportunities



Investing in upskilling is not just about retaining existing talent in a tight market. **Committing to learning and development before the skills are needed allows the business to plan in advance and anticipate disruption.**

But L&D need not be a complete overhaul of skills, or a prescriptive and extended program. In fact, shorter, targeted and achievable courses that equip talent with skills they can use in their work are typically the most valuable for talent and organisation alike.¹⁵

The promise of L&D is also attractive to the early adopters with rising skills. LinkedIn research shows 41 percent of APAC professionals believe online learning is very beneficial to their career progression. Online learning platforms, like [LinkedIn Learning](#), will allow talent to build skills easily and on their own terms while effectively creating and nurturing a flexible learning culture.

Cultivating a culture of learning and reskilling will mean talent will look for new ways to use and embrace technology. **And this should come from the top – the C-level executives, who will ultimately drive business success.**

“When we realised we were going to wind up with 1500 roles we didn’t need because a computer could do it, we decided to reskill our people so they can focus on higher value work.

The computer can think in ways a human can’t. This has enabled us to do many things, such as get better advice in wealth management and better identify fraudulent activities which help us to mitigate risks.

We will still need people to work with AI in order to achieve all that. At DBS, we decided that we were not only going to find new people with new skills, but to retrain and reskill our existing workforce as well.”



Piyush Gupta
CEO, DBS Bank

Foresight to action: HR as a strategic partner



What do these trends mean for the HR function?



1. Leverage data to position your role as strategic partners to help direct the organisational strategies

Talent and recruitment should be a key feature of business planning and strategy.

Collaboration between HR and business leaders is crucial. Together you can build a workforce plan that will reflect the current and future needs of the organisation.

Investing in the latest technology can be easier to justify than investing in existing talent. But using data to show the value in upskilling and reskilling can make the conversation much more persuasive.

[LinkedIn Talent Insights](#) can equip HR with the foresight on the organisation's skills and L&D requirements and turn it into actionable insights. This will help the business make data-driven decisions and also solidify HR's seat at the boardroom table.



2. Break learning barriers to build the workforce of the future

HR professionals should also look at their existing talent as another talent market. Who can be tapped to learn rising skills now? What might their current role look like in five years? Do they have the ability to learn the skills needed?

Talent need to feel justified in taking the time to upskill, and companies need to make sure they are incentivising talent to learn. This requires time. A data analyst will not become a data scientist overnight, but given time and direction they can develop the relevant skills.

Tools like [LinkedIn Learning Skills Insights](#) allow organisations to benchmark themselves against a wider network and identify rising skills that existing talent needs.

Continuous learning is now the mainstay of all good workforce planning. This kind of learning cannot be ad hoc – a consistent culture of learning must flow through to build a responsive and flexible organisation.

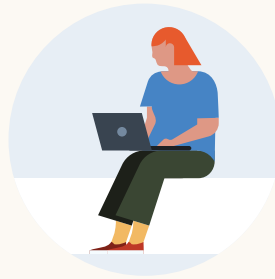
Top 3 barriers **employees** face



Time



Cost



Accessibility

L&D programmes require a sufficient level of flexibility to enable employees to fit them within their broader catalogue of work (and non-work) activities.

Top 3 barriers **companies** face



Engaging learners



Improving learning effectiveness



Adapting training to younger generations

Employees are unlikely to engage with L&D programmes if there is a lack of alignment around the benefits employees will gain.

What do these trends mean for working professionals?



Engage in continuous learning

Professionals do not need to wait for the chance to learn new skills. Rising skills show how disruption and transformation are unfolding on a macro level. But on a granular level, talent can also pick out skills they may need to keep their skills up to date.

Are you a marketer looking to hone your social media marketing skills, but unsure which tools are the most relevant to learn? Rising skills can help light the path for which skills to learn next.

Are you looking for a change of industry? Your skills may be in demand across a number of sectors, and learning a few more rising skills will make you highly attractive in the talent marketplace.

Seeing how rising skills are being used across organisations can help you find innovative ways to solve problems and apply new skills.

[LinkedIn Learning](#) courses are among a number of online resources available for those who want to keep their skills up to date.

“Being in the IT industry for 15 years and leading a business for the last 5 years, I felt the need to upgrade my skills from the traditional ERP solutions to new technologies like Blockchain. This was not only for the future of my career but also helped me explore the future of my business.”



Kabir Radhakrishnani
Director, SAP Business,
vVolve Management
Consultants



How can LinkedIn Talent Insights help you?



Hiring strategy

Inform recruiting strategy and set expectations with hiring managers



Geolocation decisions

Understand how the talent market and competition vary by region to support location decisions



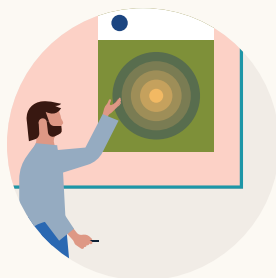
Employer branding

Identify target audiences, inform campaigns and allocate branding budget



Workforce planning

Craft data-driven plans for talent acquisition, development and retention



Competitive intelligence

Gain insights about peer companies and industry leaders

Case study: Landmark Group

Building a Talent Mapping Strategy Powered by Data

About Landmark Group: Landmark Group is one of the largest retail and hospitality corporations in the Middle East, Africa and India. It currently operates over 2,300 outlets across 22 countries.

Challenge: Anuj Tiwari, Head of Talent Acquisition at Landmark Group, was looking to engage the leadership at his company on the global talent landscape. The aim was to make this conversation more strategic with relevant insights around competitors and skills by business functions across geographies.

Solution: Turning to LinkedIn Talent Insights allowed Anuj to conduct a strong talent mapping across global organisations. This helped in analysing upcoming skill trends, compensation benchmarking and talent movement across business segments to drive possible acquisition strategies.

Results: Anuj analysed talent heat maps across geographies for the latest skills and technologies. Talent Insights helped in creating a quick and sharp analytical report which validated the assumptions and unstructured data points in a global talent movement context. Also, it helped with identifying emerging skills and jobs, educational data points and regional compensation benchmarks. Anuj was able to bring valuable insights to the leadership table that would elevate the discussion and support the business in its future talent strategy.

About LinkedIn Talent Solutions

Our products help you find and engage the right candidates, build your brand, and make even smarter talent decisions, powered by LinkedIn's data and insights.

Learn more

[Speak to a LinkedIn Talent Solutions specialist](#) on how we can partner you to develop winning teams



About LinkedIn's Economic Graph

The Economic Graph is a digital representation of the global economy based on



In short: it is all the data on LinkedIn.

Through mapping every member, company, job, and school, we are able to spot trends like talent migration, hiring rates, and in-demand skills by region. These insights help us connect people to economic opportunity in new ways. And by partnering with governments and organisations around the world, we help them better connect people to opportunities.

Authors



Pooja Chhabria

Senior Growth
Marketing Manager
APAC



Kristen Lim

Growth Marketing
Manager
APAC



Candice Cheng

Insights Manager
APAC



Shiva Kumar

B2B Comms Lead
APAC

Appendix



Application of rising skills in industries



Compliance

In a globalised environment, data protection is a primary concern. For any organisation that collects, handles or uses consumer data, demonstrating rigorous compliance with privacy and data protection standards is vital to securing trust and, ultimately, business.

The General Data Protection Regulation (GDPR) is a set of rigorous regulatory standards on how companies collect and manage data. It was designed and adopted by the European Union in 2016, and came into effect from May 2018. This in part has led to the rise of the Chief Data Officer, who is responsible for the handling and governance of data, rather than solely the collection of it.²²

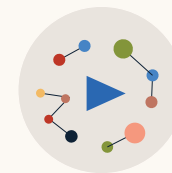


Social Media Marketing

Social media adoption continues to grow in APAC. More than a third of Facebook's 2.3 billion monthly active users are in the APAC region.²³

There are also the region's own local networks. China has WeChat, Japan's social media network is Line, while Korea has KakaoTalk, in Vietnam it's Zalo, and India has Hike.²⁴

Social media is now key for brands wanting to reach new and existing consumers. LinkedIn's data shows that social media marketing skills are in demand across industries.



Continuous Integration

As industries become digital first, a key business priority is ensuring the integrity of networks. Continuous testing is vital because software and code are updated frequently.

Developing deploying testing can be time consuming, and means developers spend more time deploying than developing.²⁶

Continuous integration allows developers to automate troubleshooting of new code as it is integrated, and identify problems early. As the mantra goes, better to fail fast than fail slow.²⁷

92%

of APAC
organisations
manage
their own
social media.

74%

believe it
contributes
to their
bottom line.²⁵



Workflow Automation

Workflow Automation boosts productivity, standardises data collection, manages basic administration and performs repetitive tasks. This frees up talent to use soft skills such as creativity, critical thinking and problem solving in other areas.

These rising skills are emerging in tech-heavy industries such as information technology and services, computer software and internet.

Healthcare is also using automation to track patients, monitor drugs, and free up medical staff to focus on those they are caring for. In financial services and banking, automation can manage and analyse data, identify patterns and produce reports.



Gesture Recognition Technology

Gesture recognition technology (GR) aims to close the gap between humans and devices by teaching computers to read human movements. By 2025, the market is expected to be worth US\$30.6 billion.²⁸

Financial services and banking establishing digital branches use GR to recognise customers and securely deliver services, without a human teller.²⁹

Higher education and e-learning use immersive experiences to take students to historical sites or test the outcomes of various experiments. Marketing and advertising use GR to create engaging advertisements or to let consumers try before they buy.



Blockchain

When developers were building a digital currency, one problem persisted – how do you stop money being fraudulently spent twice? The answer is blockchain: a highly-secure universal ledger that grows with each transaction.

The peer-to-peer network has been adopted beyond financial services.

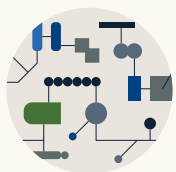
Online education uses blockchain to securely identify students, while logistic companies can keep track of goods.³⁰ In advertising, blockchain keeps track of ad space bought by programs, ensuring no overlap and improving transparency.³¹

APAC's blockchain-based industries is forecast to be worth

US\$16
billion by
2024.³²

A 2017 survey found 88% of APAC banking or finances businesses believed blockchain was important to the industry's future.³³

APAC governments have also been supportive of the technology, while remaining cautious on digital currencies. The Monetary Authority of Singapore is exploring blockchain technology for conducting inter-bank payments.³⁴



Artificial Intelligence

Business decisions are now informed by data. AI, such as machine learning, allows organisations to more efficiently mine and analyse their data for insights.

As new data enters into the system, a computer can monitor and make decisions from it. For example, Airbnb used visual recognition and machine learning to understand what photos are most useful and attractive to potential guests.³⁵

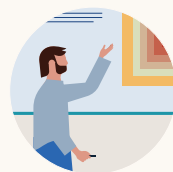
In financial services, hedge funds use machine learning to monitor huge amounts of data, make predictions and determine trends. Autonomous technology, such as driverless cars, uses AI to respond and manage various situations. In higher education, AI is used to improve research.



Robotic Process Automation

Banking and financial services are using Robotic Process Automation (RPA) to manage trading, speed up transactions and resolve discrepancies.³⁶ In telecommunications, bots are used to manage customer complaints while in insurance, they manage new customers and check policies.

UOB Bank in Singapore has a good example of this. They deployed automation software, nicknamed Amy and Eve, which have already reduced data processing times significantly allowing employees to focus on more interesting & challenging work. Amy helps to process requests for Letters of Credit by the bank's corporate customers. She does the data entry work and sends to her human colleagues for approval. Time taken to complete the job has gone down from 240 seconds to only 40 seconds. Eve reviews credit card applications and does this 3.5 times faster than the previous process.³⁷



Human-Centred Design

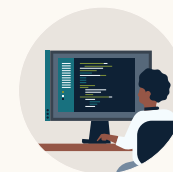
“How can I make the user's experience better?” That is the fundamental question that drives human-centred design.

The overwhelming majority of experience designers have traditionally been found in tech companies, where they improve apps and websites. However, they are now spreading out across industries.

By 2020, APAC users will make up half of the global app installs.³⁸

With all eyes on mobile screens, there is a demand for sophisticated apps and engaging mobile content.

This affects all industries, from retailers who need to make online sales as frictionless as possible, to higher education where students are increasingly learning outside of classrooms.



Frontend Web Development

More than half of the world's global online retail sales stem from the APAC region.³⁹ By 2021, it is expected to reach US\$3.5 trillion in e-commerce sales. Consumers expect seamless interaction – a recent report by Google and Accenture found in APAC if a mobile site takes longer than three seconds to upload, 53 percent of users will abandon it.⁴⁰

Clearly having a site that is responsive and easy to load is the first hurdle in attracting consumers. This affects all industries that are trying to attract digital consumers – from online banking to e-commerce. Remote and e-learning is becoming more common. For education providers, easy-to-use websites that are reliable for students are vital.

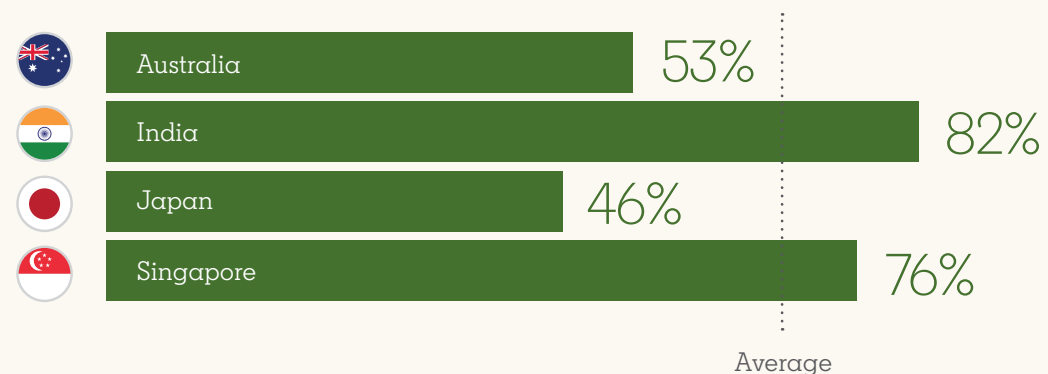
Frontend web developers are key to attractive websites. They must use the latest technology, like cloud-based platforms, and ensure queries run quickly and results are delivered easily.

State of learning

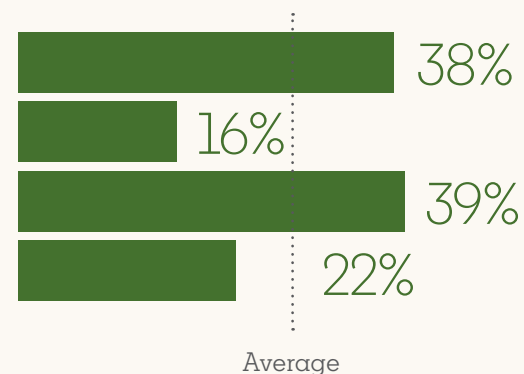
Pace of change

Indians and Singaporeans both find the rapid change in the skills needed to succeed confronting.

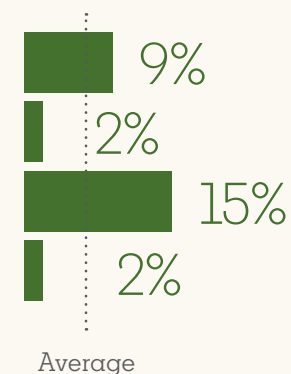
The skills needed to succeed
are changing rapidly



The skills needed to succeed
are changing slowly

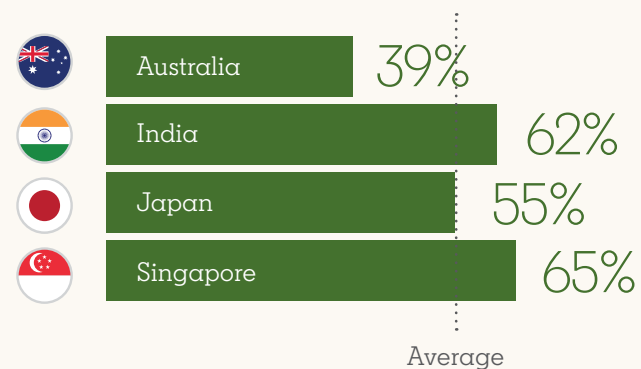


The skills needed to succeed
are not changing



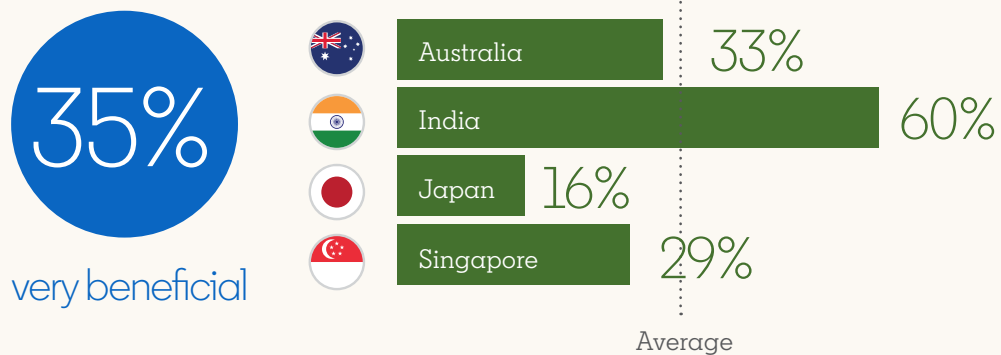
The results demonstrate clear differences between different countries when it comes to their underlying comfort around the future of work.

Feeling daunted by pace of change

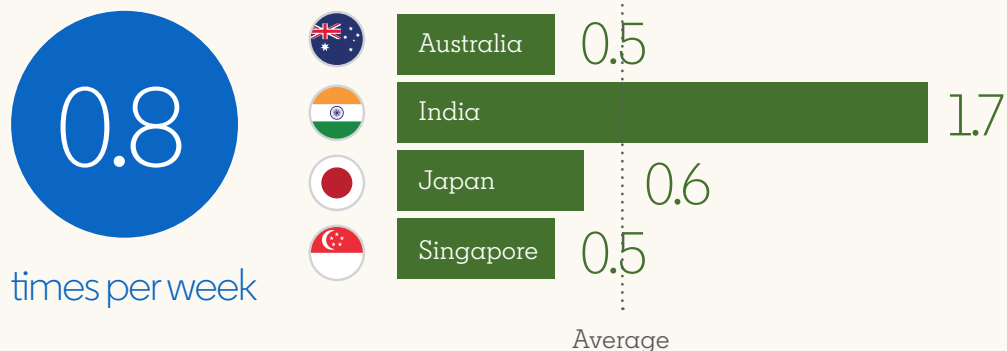


Over a third of APAC employees view regular online learning as beneficial to career progression.

% believe online learning is very beneficial to career progression



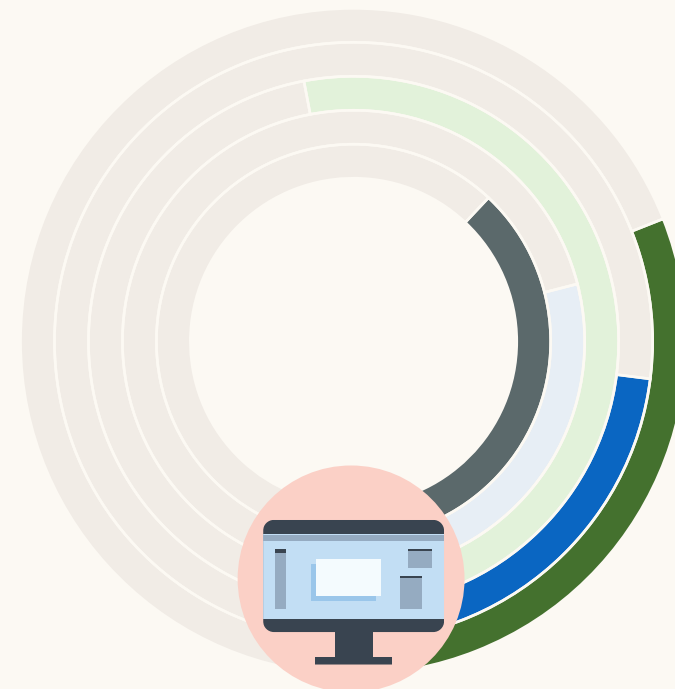
Average number of times per week employees would ideally like to undertake online learning



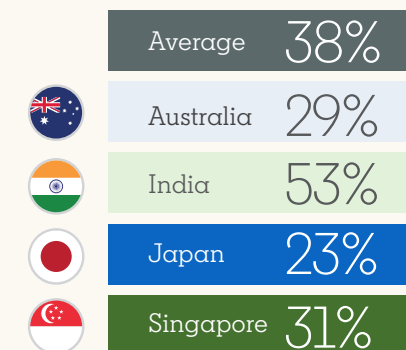
Online learning can be a key component of a broader L&D programme.

Almost two in five prefer online learning over offline equivalents.

% strongly agree that they **prefer online learning because it is more convenient** than offline learning methods

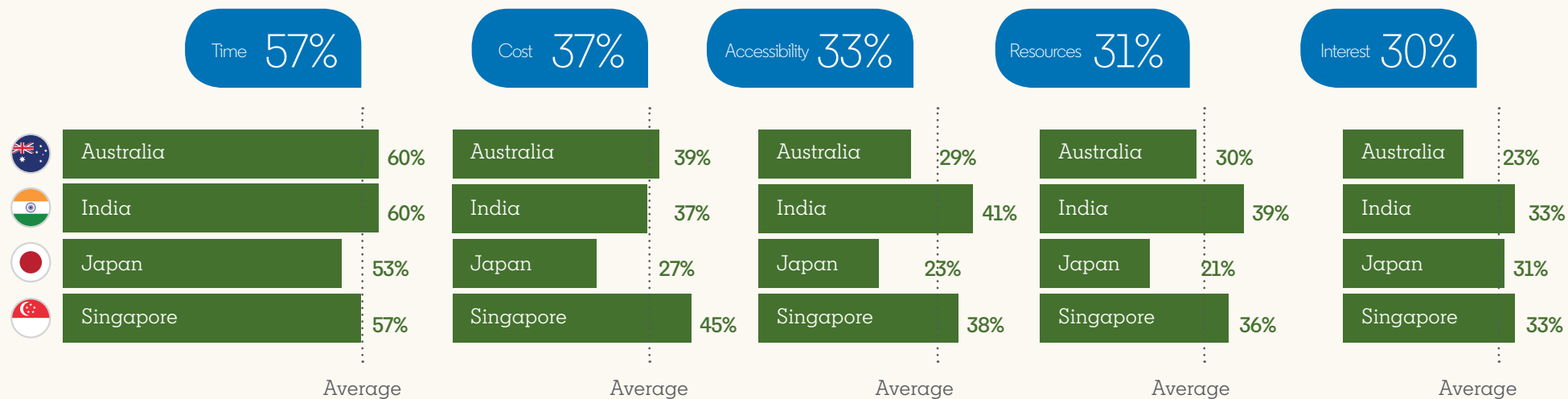


The convenience of online learning can help employees overcome the challenges faced around finding time to learn.



Time is the most significant challenge from an employee perspective, although cost, accessibility, access to resources, and general level of interest in the content also play a role.

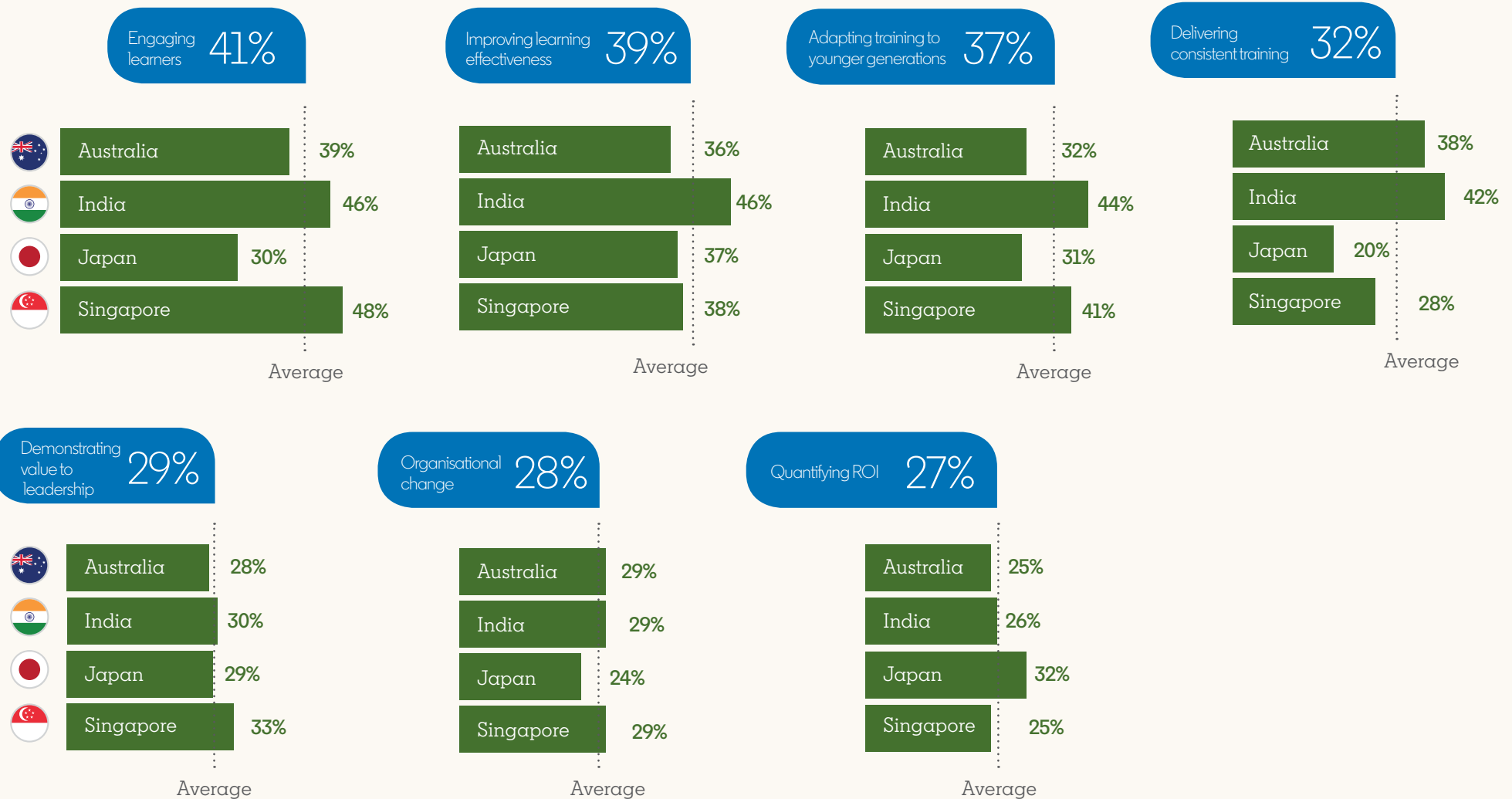
Barriers **employees** face in undertaking L&D at work



L&D programmes require a sufficient level of flexibility to enable employees to fit them within their broader catalogue of work (and non-work) activities.

The most significant barrier to companies delivering L&D programmes is their ability to generate employee engagement.

Barriers companies face in successfully delivering L&D



Employees are unlikely to engage with L&D programmes if there is a lack of alignment around the benefits employees will gain.

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