

FUTURE-PROOFING THE WORKFORCE

ACCELERATING SKILLS ACQUISITION
TO MATCH THE PACE OF CHANGE



THE ADECCO GROUP



THE BOSTON CONSULTING GROUP

FUTURE-PROOFING THE WORKFORCE

ACCELERATING SKILLS ACQUISITION
TO MATCH THE PACE OF CHANGE



THE ADECCO GROUP



THE BOSTON CONSULTING GROUP

CONTENTS

EXECUTIVE SUMMARY	5
THE SCOPE OF THIS STUDY	6
THE WORKER PERSPECTIVE	8
THE COMPANY PERSPECTIVE	14
THE PUBLIC INSTITUTION PERSPECTIVE	22
CONCLUSION	24
GUIDANCE & POLICY RECOMMENDATIONS	26
RESEARCH METHODOLOGY	28
APPENDIX	30
ACKNOWLEDGEMENTS	34

EXECUTIVE SUMMARY

With rapid changes—both technological and in the organization of work—this new study finds that workers are extremely concerned about the profound impact of technological changes in their jobs (and whether they will even have a job in the future), with two-thirds of respondents seeing their job changing significantly at least every five years because of technological advances.

Based on responses from approximately 4,700 workers and in-depth interviews with companies and institutions, this study provides a window into the preparations being made in the workplace to meet the future world of work. It offers new insights into the view of workers on how they should acquire new skills to meet changes brought about by the advent of new technologies. It also examines the role of companies and public institutions in building new workforce skills.

The survey shows that while workers are generally optimistic about their ability to acquire new skills, the results reveal a lack of systematic evaluation of the potential gaps between workers' current skills and those they will need in future. It also reveals a disconnect between employees' willingness to acquire new skills (some 62% of employees consider themselves as primarily responsible for acquiring these) and the degree to which they will take the initiative (59% expect their employer to develop the training opportunities). Workers see the main obstacles to acquiring new skills as the lack of time and the cost of training.

Meanwhile, interviews with executives reveal that most companies grasp the importance of giving their workers opportunities to acquire new skills. Yet they are still not investing sufficiently and developing long-

term horizons when it comes to skills' development. The challenge is one of incentives: companies may be paying to reskill employees who, as a result of changes later on, may not continue working for them. Moreover, it is challenging for companies to take decisions in the face of an uncertain future. Yet while it may be hard to predict what skills will be needed in the years ahead, companies cannot afford to make decisions only when the trends are clear. Those that fail to plan and invest now may find this negatively affects their business down the road.

What is needed is a shift in mindset. Companies and workers need to see the acquisition of skills as a means of future-proofing—whether that is their business or their employment prospects. They need to adopt a more flexible approach, making plans to reskill but setting a path that can be adapted to changing circumstances. Public institutions can help by for example establishing individual learning accounts, enabling workers to access training as and when they need it, continuously throughout their careers.

In the future world of work, skills acquisition will no longer be a process with an ending. Companies will need to reassess constantly the capabilities of their workforce while workers will need to regularly upgrade their skills to meet advances in technology, new ways of working and changes in the demands of the labour market.

THE SCOPE OF THIS STUDY

How current and future workers will acquire the skill sets needed to succeed in the future workforce

This study, from the Adecco Group and the Boston Consulting Group, takes a hands-on approach using the survey and interview results along with proposed solutions to explore what the future of skills acquisition looks like for workers. Specifically, to what extent will individuals be responsible for their own skills acquisition? Will companies provide them with the right skills? Or will public institutions develop a supporting structure to help workers and companies navigate an uncertain future?

We are particularly interested in investigating the acquisition of new skills by workers whose job is affected by technology trends. First, we seek to understand better the way workers are acquiring new skills today and what they expect their experience to be in the future. Second, we investigate the role of companies in helping their employees to acquire new skills today and in the future. Finally, we examine the role institutions can play in supporting both companies and individuals in preparing themselves for the future.

Views differ on the terminology describing the acquisition of new skills. For the purposes of this publication we use 'upskilling' to describe the augmenting of existing skills and 'reskilling' to describe the acquisition of new skills. However, these terms can be used somewhat loosely.

The focus is on white-collar workers in two industries experiencing significant disruption (finance/insurance and consumer/retail) and nine (globally-representative) countries

Not all industries have experienced the same changes and some have undergone more significant transformations than others. To identify and share emerging good practices, this study focuses on two broad trailblazing industries that have both undergone significant change in recent years: financial services/insurance and consumer goods/retail. The former are experiencing high levels of automation and digitalization in adapting their customer engagement models to the changing environment¹. This includes the digitalization of back office processes, straight-through processing (electronic transactions not requiring human intervention) and online banking, leading to challenges to adapt their workforce and find the right talent. The latter industries have also experienced significant changes resulting from the advent of mobile sales, customer centricity, automated supermarkets, personalization and the emergence of new and innovative smaller players.

In these two broad industries, white-collar workers (office workers ranging from employees with no managerial responsibility to middle and senior managers) have tended to receive less research attention on how they are preparing for upcoming job changes.

¹ BCG, Digital Insurgents, emerging models, and the disruption of CPG and retail, 2017; BCG, To See Where Retail Stores Are Heading, Look to China, 2018; BCG, Going Digital: Five Strategies for Corporate Banks, 2018; BCG, The 2018 Insurance Value Creators Report: A New Boldness Pays Off, 2018

Our study looks at nine countries that are globally representative (large and small, developed and developing) and that represent key hubs of activity for the industries being examined: China, France, India, Italy, Japan, Singapore, Switzerland, the UK and the US.

To address the role of all stakeholders, our research is built on a survey and interviews from three key perspectives: workers, companies and public institutions

The acquisition of new skills is often positioned as one of the 'must dos' in adapting to the advance of technology and the growing speed of change in the workplace. Yet today much uncertainty surrounds what will be required to close future skill gaps. We therefore need to explore the barriers to acquiring new skills fast enough to match the speed of change.

To offer a multifaceted view of the challenges, our research examines the skills challenge through three lenses. To fully understand the workers' perspective, we surveyed approximately 4,700 white-collar workers across the two focus industries and nine focus countries, and conducted follow-up interviews with some of the respondents. To understand the corporate mindset, we conducted a series of interviews across the two industries with senior executives who have reached different levels of maturity in their approaches to closing the skills gaps. (In addition, we have referenced some interesting examples from outside our two industries, given that the changes are not limited to our two industries). Finally, to find out what public institutions are doing to accelerate new skills acquisition and what actions they are prioritising, we conducted interviews with governments, educational institutions, labour and economic organizations and others.

THE WORKER PERSPECTIVE

For workers, the profound impact of technological changes on the nature (and existence) of their job is creating a wide range of concerns

Workers see advances such as artificial intelligence (AI), automation or digitalization as having a major impact on their current and future jobs. Two-thirds of survey respondents see their job changing significantly at least every five years because of technological advances. Of this group, 10% believe the frequency of changes to their jobs will make it hard to keep up, expecting changes to their jobs to be more frequent than every two years, while one quarter expect changes in their jobs every two-to-three years. Differences in the expectations of the speed of change are seen between the finance and insurance industries (where 70% anticipate significant change at least every five years) and the consumer goods/retail industries (61%). Unsurprisingly, younger people expect faster rates of change than their older peers (72% of the 25-34-year-olds expect their job to change significantly at least every five years, versus 58% of the 54-65-year-olds). Even in Japan, where workers are experiencing changes the slowest, 42% of respondents see their job changing significantly at least every five years. We also observe a difference between hierarchy levels: the more senior the worker, the faster the changes experienced (77% of the middle management level expect their job to change significantly at least every five years, versus 53% of unskilled office workers).

In both consumer goods/retail and finance/insurance a significant minority (one-third) of respondents are not confident that they can adapt to these changes and are concerned

(either somewhat or very) about losing their job because of technological changes (see exhibit 1). Workers in India and Singapore are especially concerned (54% are either somewhat or very concerned). While workers in Japan are seeing less rapid change, they are as worried about losing their job as their global peers (25% are either somewhat or very concerned).

While there is concern about the impact of technological changes on jobs across age groups, older age groups are less concerned about losing their job because of technological changes than younger age groups. The most worried age group are 25-34-year-olds, with 37% somewhat/very concerned, whereas 23% of 55-65-year-olds and 3% of those over 65 are somewhat/very concerned. This is likely explained by the fact that they are coming closer to the age of retirement.

But many workers are optimistic about their ability to acquire new skills

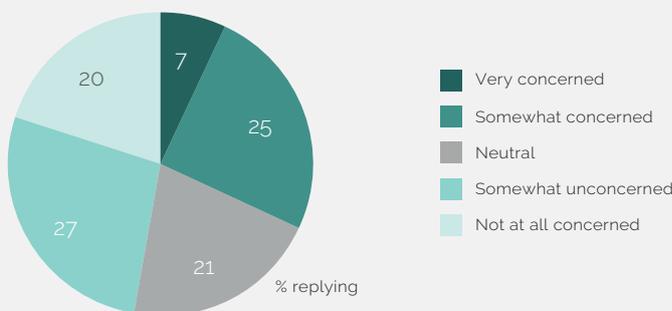
Even if the skills that need to be acquired vary depending on the objective for the worker (for example, management skills are needed to take on responsibility for larger teams while technical skills are needed to build specific expertise), acquiring new skills is seen as important for all career changes, whether through internal moves or by changing jobs. Some 71% of respondents consider the acquisition of new or up-grade skills important, while 68% want this to acquire a new job in a current field and 72% believe it is important to be promoted. Acquiring new skills is also considered as a way to secure a pay raise, to increase busi-

Exhibit 1: Workers' perception of the speed of change and concerns about its impact

How quickly are technology trends (e.g., artificial intelligence, automation, digitization) changing your job?²



How concerned are you about losing your job because of technological changes (e.g., artificial intelligence, automation, digitization)?¹



² Question asked only to people currently working, therefore excluding the retired, homemaker, student, not employed and other respondents, n=4,494

ness and to boost personal satisfaction—a phenomenon seen across our two target industries.

Across countries, too, a significant share of respondents has considered acquiring new skills: some 87% of respondents have considered acquiring new skills in the past 10 years. (We notice a divergence in Japan compared to other focus countries, where only 63% of respondents have acquired new skills.) When it comes to the consideration of skills acquisition, similar divergences between industries emerge as with the speed of change experienced by workers. Slightly more workers in the finance and insurance industry (89%) have considered the acquisition of new skills in the past 10 years than those in the consumer goods/retail industry (84%). Younger age groups consider more the acquisition of new skills (95% for 18-24-year-olds) than older age groups

(83% of 45-54-year-olds). In addition, the higher the hierarchy level, the greater the acquisition of new skills (93% acquired new skills in middle management versus 74% in unskilled office workers).

Not enough is being done to evaluate skills gaps or prepare workers for the upcoming changes

Today, skills are evaluated through performance reviews (44%), through workers' own research (38%) or through feedback from peers (25%). However, the survey results reveal a lack of systematic evaluation of potential gaps between the skills that workers now possess and those they would need to be fit for the future. In addition, even if most workers have acquired some new skills in the past 10 years, this appears to be limited, with the skills acquired often insuf-



How employees learn today, what they hope for in the future and what companies and governments are planning to develop as part of their skills strategies

Employees are generally satisfied by their learning experience, with 80% of respondents across the nine focus countries and two focus industries rating their experience as somewhat good or very good. Most strongly agreed that their learning experience made a difference, offered them a new perspective, was a source of motivation and was fun.

To continue having a good learning experience, respondents consider hands-on training (34%), easy content access (18%) and flexible timing (17%) to be most important. In France, significant value is also given to regular updates (22% versus 12% globally) and customized offering (17% versus 11% globally)

Workers in different countries focus on different types of skills. While the majority of skills acquired are around ways of working³, with 64% of respondents globally saying they acquired these types of skills, China, India, Italy and Singapore have a strong focus on data and analytics (57%, 63% 52% and 42% respectively versus 39% as the global average). Switzerland and Japan are lagging behind other countries in the acquisition of digital skills (19% and 18% respectively versus 39% globally).

Overall, the younger the population, the more likely that the skills acquired during significant skilling are digital skills, with 56% of 25-34-year-olds having acquired digital skills while 40% of 45-54-year-olds have. On the contrary, the older the generation, the more ways-of-working skills acquired, with 66% of 25-34-year-olds having acquired ways-of-working skills while 78% of 45-54-year-olds have.

Today, more than 50% of the acquisition of new skills is organised by companies and government. Universities and professional associations do not play a large role in the acquisition of new skills (only 5% and 9% of respondents respectively have experienced sessions organised by universities and professional associations).

Overall, the expectation for companies and institutions is that learning will become increasingly based on data and technology as a means of offering personalized training. For example, the government of Singapore is looking into the development of voice-activated devices that will provide career and skills development advice. And in order to adapt and personalize its offering, ING is planning on using IBM Watson to analyse the training that is most requested.

³ For example: management, computer literacy, self-management, team working, project management tool, collaboration tool, agile

ficiently different from existing skills. While three-quarters of respondents have acquired new job-related skills in the past 10 years, only 13% spent the equivalent of three days or more in training and only slightly more than half (54%) acquired skills somewhat or entirely different from their previous skill set. This means only a tenth of respondents have undertaken what we classify as 'significant skilling' (that is, acquiring skills that are somewhat or entirely different and undertaking at least three days of training).

While the level of significant skilling experience is lower in the US, China, France and Japan (5%, 6%, 7% and 8% respectively), the share is higher in India and Italy with 19% and 22% of respondents respectively having undertaken significant skilling. This difference could be due to respondents in India and Italy experiencing faster change than in most other countries in the survey and/or to the recent introduction of government programmes to develop the skills needed at a country level. For example in India, which is concerned about outsourced jobs becoming automated, the government's *Skill India* programme, set up in 2015, aims to train more than 400 million people in different sectors by 2022 and focuses on younger age groups (the focus of our Indian sample). More recently, a commitment was made to achieve

mutual recognition of UK and Indian qualifications and to facilitate exchanges for students to experience other learning methods.

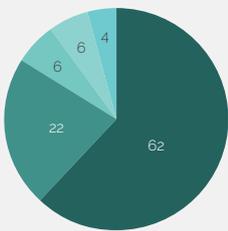
Employees are not taking ownership of their skills—a particular concern for employees who need to transition to new roles

The survey reveals a disconnect between employees' perceived responsibility for acquiring new skills and the degree to which they act on that responsibility. Some 62% of employees consider themselves as primarily responsible for acquiring the right skill set. In addition, 48% would like their companies to run the sessions while 28% expect to take on the training themselves through, for example, self-service content. There are interesting country differences here: 78% and 72% of employees in the US and UK respectively see themselves as primarily responsible, compared to 58%, 53%, 51% and 50% in France, Italy, India and China, where employers or universities are expected to take more responsibility. (See appendix for more details).

In even larger numbers, older people see their company as responsible. Among 45-54-year-olds, 62% consider their em-

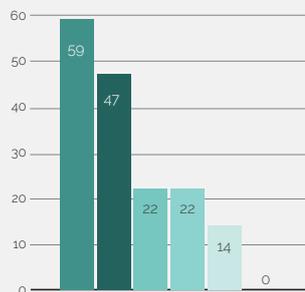
Exhibit 2: Difference in responsibilities for re/upskilling between skill set, developing opportunities and running the sessions

Who is the most responsible for your acquisition of new skills?⁴



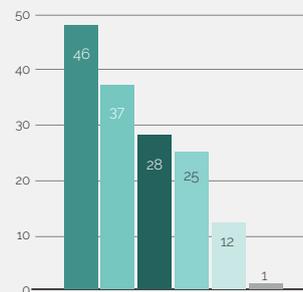
% of respondents who said yes

Who should be responsible to develop training opportunities?⁴ (Multiple selection)



% of respondents who said yes

Who should be responsible to run the training sessions?⁴ (Multiple selection)



% of respondents who said yes

- Myself
- Companies
- Universities
- Governments
- Public institutions

- My employer/company
- Myself (i.e. look for interesting training independently)
- Specialized reskilling provider
- Online course provider
- Government institution
- Other

- My employer/company
- Specialized skilling provider
- Myself (i.e. self-service content)
- Online course provider
- Government institution
- Other

⁴ Sample size: all respondents

ployer responsible for reskilling and 48% see themselves as responsible. This compares with 48% and 47% respectively of 18-24-year-olds. Younger age groups have higher expectations of government, with 22% of 18-24-year-olds seeing government institutions as responsible for providing opportunities to acquire new skills, while of 45-54-year-olds, only 11% held this opinion (see exhibit 2).

Today, employees expect support from their company in acquiring new skills, with 77% stating that the training policies of an employer influence their choice when taking a new job. Younger age groups feel this even more strongly. Interviews with workers and the institutions related to workers support these findings, suggesting that even if workers are increasingly aware of the importance of skills acquisition, only a few have changed their learning mindset: most do not yet consider it part of their job to keep up with the changes and to ensure that they have the right skills.

Workers see the main obstacles to acquiring new skills as the lack of time and the cost of training

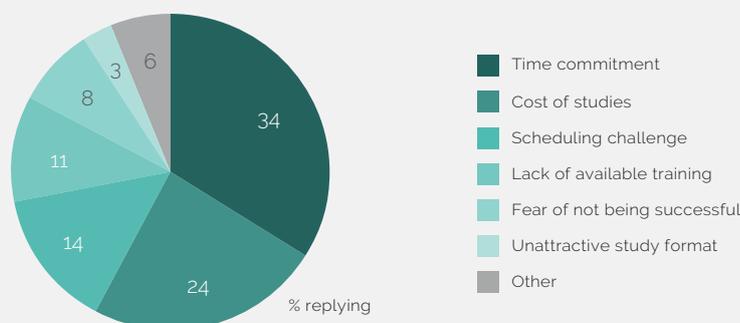
Even if workers understand the importance of working on their skills and are willing to acquire new skills, a number of hurdles prevent some from doing so. In the survey, half

of the respondents who did not acquire new skills had considered the acquisition of new skills, but were unable to overcome the hurdles to acquiring them. Of respondents who considered acquiring new skills but had not taken action, the primary reasons cited were lack of time (34%) and training costs (24%). In finance/insurance, time is the primary barrier (37% time and 21% cost) while in consumer goods/retail, time and cost were equally important (31% time and 27% cost). There is also a difference between seniority levels, with time a bigger obstacle for more senior levels (36% for middle management versus 27% of unskilled office workers), while cost is more important for more junior workers (32% of unskilled office workers versus 13% of middle management) (see exhibit 3).

Differences across countries could be explained by varying attitudes to skills acquisition between governments and individuals. This might be, for example, the level of financial or information support given to workers, the level of experience with adult learning and the cultural mindset of workers. Respondents who did not consider acquiring new skills tended to see no major change in their job profile (39% of respondents), were satisfied by their current skill set (25%) or felt safe in their job (24%), with similar results across the two focus industries.

Exhibit 3: Time and cost of studies are the main reasons not to undertake re/upskilling

What was the main reason for not acquiring new skills?⁵



⁵ Question only asked to respondents who have not reskilled but who considered it, n=573



How independent workers learn today

Independent professionals see less rapid changes ahead (58% expect significant changes to their job at least every five years compared with 67% for part and full-time employees) and are less concerned than corporate employees about losing their jobs because of the technical changes (27% are somewhat or very concerned compared to 32% for part and full-time employees).

Independent professionals have a more proactive approach to developing their skills, with 74% considering themselves primarily responsible for acquiring new skills and 63% expecting to be responsible for developing their own learning opportunities. The preferred format for the acquisition of new skills is self-service training (66% versus 33% for part- and full-time employees) enabling them to be more flexible and to learn while on the job.

THE COMPANY PERSPECTIVE

Most companies (within the industry/country scope) understand the importance of giving their workers opportunities to acquire new skills

Companies are in no doubt that, to keep up with current and future changes, having the right skills is critical. As interviews confirm, they regularly make assessments of which skills will be most important in the future and decide how to bridge potential gaps in employees' skill sets.

Most companies see themselves as playing a role in helping their employees to acquire the right skills. First, they help employees identify skills that will best support the company's long-term objectives and the level of advancement in these skills that will be required. To do this, companies often define target skills based on their business strategy, in three main categories: the skills needed as a foundation, those needed to catch up with competitors and those that will give them competitive advantage.

Once these target skills are defined, they support their employees in setting the required level for each of the skills, based on their job profile (however, most often there is no integrated process of mapping the skill needs).

Second, most companies believe they should provide their employees with the necessary support both to increase their awareness of the upcoming changes in their work and to help them acquire the skills needed to meet these changes. This is usually done through, for example, the sharing of written materials or videos, providing gamified learning, use of electronic or mobile technologies or organising working sessions or job experiences.

But the vast majority of companies only see their responsibility as being to give their own employees the right skills, and only if this does not involve too much effort or cost

Our research reveals an increasingly important debate among companies about their social obligation to reskill employees and to future-proof those that, as a result of future changes, may not be able to continue working at the company. Few companies are yet taking this path and most are focusing their efforts on ensuring that they have the right skills mix internally to meet today's challenges. However, they are increasingly aware of the importance of facilitating the transition to new job roles for employees they may have to let go. Interest is therefore increasing in training programs that give employees a certification. For example, EY gives 'badges' to employees, certifying their digital credentials, which they expect can be used to differentiate themselves across the wider labour market. Similarly, the Amazon Career Choice programme offers certified training to employees with more than three years' experience in any field of interest for their career development inside and outside Amazon.

Before considering how to close skills gaps internally, companies first evaluate whether the skills are sufficiently important to invest in developing them internally or if they can outsource tasks that require certain skills. Only if skills are important enough will they consider bringing those skills in through recruitment or developing them internally.

Today, companies find it difficult to make the right decisions on which of these two approaches to use to close the skills

gaps. Leadership teams tend to think of a 12-month horizon in terms of the impact on their workforce and return on investment. However, developing the skills that companies need usually requires a projection over a three-to-five-year time horizon. This short-term perspective means the acquisition of new skills through training is often seen as too costly, given the uncertain or long-term returns (employees might leave or skill needs might evolve), and so most choose the recruiting option.

Therefore today, companies spend a significant amount of money on hiring candidates with profiles that meet their skill needs. For example in the US, ARK Invest, an investment management company, estimates that an average of \$240 billion a year⁶ is spent on recruiting the right people. This spending includes the use of external recruiting platforms, the internal costs of assessing potential candidates and the costs of on-boarding new employees.

Nevertheless, soon to be published analysis of recruiting costs across reskilling clients from General Assembly, a professional training provider, has shown that if companies decide to reskill and redeploy employees instead of laying off and rehiring, they could save up to \$136,000 per person. This takes into account direct costs such as severance costs, recruitment, training and relocation costs and indirect costs such as 'on-boarding', employee retention, severance and hiring costs.

Even if the business case to grow skills internally has been made, many companies encounter an additional challenge: identifying the right candidates to reskill. This often means they limit their selection of individuals to those whose skills already closely fit the target profile and who work in the same part of the organization (geographically and/or in the same topic area).

According to General Assembly experience, companies generally look for an overlap of approximately 80% between the current and the target skill set of upskilling. This means, for example, that most companies would not consider an employee with a human resources profile if they need to build AI skills. Examples beyond this are few and far between (Capital One is investing in six-month trainings through its developer acad-

emy where it trains young graduate with no technical background to become front end developers).

In addition, most companies do not leverage their scale to find the right candidates. From our research, it seems that most companies look for candidates in the same area of the organization or at a country level. This could be explained by a lack of clear understanding of the skills they have at a global level. By contrast, some companies do use their scale to ensure they find the right talents to reskill. For example, Boeing looked across the organization to identify employees from different teams to be reskilled to become user experience designers and to create an innovation platform team.

Case study: BNP Paribas Cardif

BNP Paribas Cardif is going through a large reskilling programme with the aim for 10% of their workforce to acquire new skills by 2022. They are not concerned about finding the right candidates to acquire the target skills because when looking for the right candidates they consider all the employees at a global level in their organization. During our interview, they mentioned that their "worldwide pool of employees is large enough and showed, during the pilot phase they are in, encouraging enthusiasm to be reskilled. Thus, they are positive to find the right profile to learn the required skills.

When struggling to find talent to fill a position, some companies are looking into acqui-hiring: the buyout of a company to recruit expertise, and which has, according to a recent study by BCG and the international recruitment company The Network⁷, become more common when looking for digital talent. Some other companies have started to train the individuals they hire to fit their needs. For example, Adobe's Digital

⁶ Korus, S. (2015, November 12). The Steep Cost of Labor Market Friction: \$630 Billion, Retrieved from <https://ark-invest.com/research/labor-market-friction>

⁷ BCG and The Network Decoding global talent 2018

Academy exists to recruit talent directly from diverse backgrounds and teach them the skills they need for their future job.

Companies still have work to do in developing their overall skill strategy

While awareness of the need to fill skills gaps is growing, most companies are reacting to the changes as they occur rather than taking a long-term approach or being more strategic in their thinking. External factors such as the pace of technological change, regulatory developments, and rapid economic cycles might combine to create a stronger call for action.

This means companies need to set a long-term time horizon for their overall skills development strategy. However, many companies are struggling with this. While most are thinking of a 12-month horizon, developing a skill strategy that is fit for the future means projecting across a three- to five-year horizon. It is also critical for companies to focus on the target skills that are appropriate to their overall strategy and business model, whether that means prioritizing top down, management level skills, or bottom up skills, including those needed by workers on the shop floor.

One approach is strategic workforce planning, which is more proactive and tries to predict the skills that will be needed in the future. This involves making a detailed assessment of current skills and capabilities based on the overall business strategy, and developing a plan for the development of skills over a long-term horizon. For example, DXC, a technology company, formed a Technology Transformation Team to identify the technology skills of the future. From the analysis of both internal and external data (such as labour markets, their investment portfolio and their skills inventory system), the company developed learning guides tailored to different experience levels, from beginners to those with advanced knowledge and skills.

Perhaps most challenging of all, companies need be prepared to act in the face of an uncertain future. While it may be hard to predict what skills will be needed in the years ahead, companies cannot afford to

Case study: ING

ING, the bank, developed a detailed plan of its 'capability' needs for the upcoming five years. (These capabilities could be further broken down into knowledge, skills and behaviours.) Starting from its global strategy, ING determined the capabilities needed across three categories:

- Distinctive capabilities: those that differentiate ING from its competitors
- Competitive capabilities: those that need to be at least at the same level as those of competitors
- Foundational capabilities: those needed at a minimum in order to reach its objectives

Once the capabilities were identified, ING create a detailed plan of when they would be needed and what level of expertise would be required in each to match the different job profiles in the organization. With all these information pieces, it created a detailed plan to acquire the identified skills, leveraging both hiring and developing the capabilities in-house.

make decisions only when the trends are clear. Holding back on planning and investment because it is too difficult to predict the future leads to paralysis, which could negatively affect the business.

One way of tackling this paralysis is by becoming more flexible and not setting out to define a rigid or granular skills plan. This allows the design and execution of training plans and objectives to react to changes as they materialise. Another approach is to set an objective for a certain percentage of the workforce to have acquired new skills over a set time frame but without specifying the skills types. Based on the overall strategy of the company, this might mean offering a menu of skills, which can be adapted as needs evolve, while adjusting the volume

of skills training according to demand. For example Wipro, an India-based service company, has set an objective of preparing its workforce for the upcoming changes in customer service, without establishing detailed learning paths. Employees can choose which skills they want to acquire from the available learning modules.

Companies do not have to adopt one strategy or another. Both workforce planning and a more flexible approach can be used simultaneously. For example, it is possible to take different approaches in different parts of the organization or with different types of skills.

Companies must define the skills employees need to acquire and identify individuals who should be learning these skills

Most companies do not know what roles will be needed in the future but they understand the overall capabilities that will be crucial to success. These include both the hard skills needed in the digital economy (such as capabilities in user experience design, data analysis, and AI) and soft skills (such as communications and negotiations abilities), as well as the skills needed for new ways of working (such as agile, lean, and lean start-up methodologies). Across our industries, all these are expected to be in increasing demand in the upcoming years.

Once companies have defined the skills they want in their organization, they need to look for candidates who can acquire those skills. This requires candidates to have both the right starting skill set and the right learning mindset. Therefore, companies need to increasingly consider candidates aptitude to learn new skills and look for an 'agile mentality' during their hiring process.

Companies are using a number of best practices to identify the right candidates. One approach is to use comprehensive skill assessment tests to determine in detail the starting skill set of their employees. This enables them to evaluate the skills of their employees beyond the information collected in CVs, job profiles, and performance reviews, in order to find a better training candidate. Another type of skills assessment is that used by Unilever: instead of tradition-

al face-to-face recruiting discussions, the company assesses candidates' skills by asking them to play 12 neuroscience-based games and to take behavioural tests.

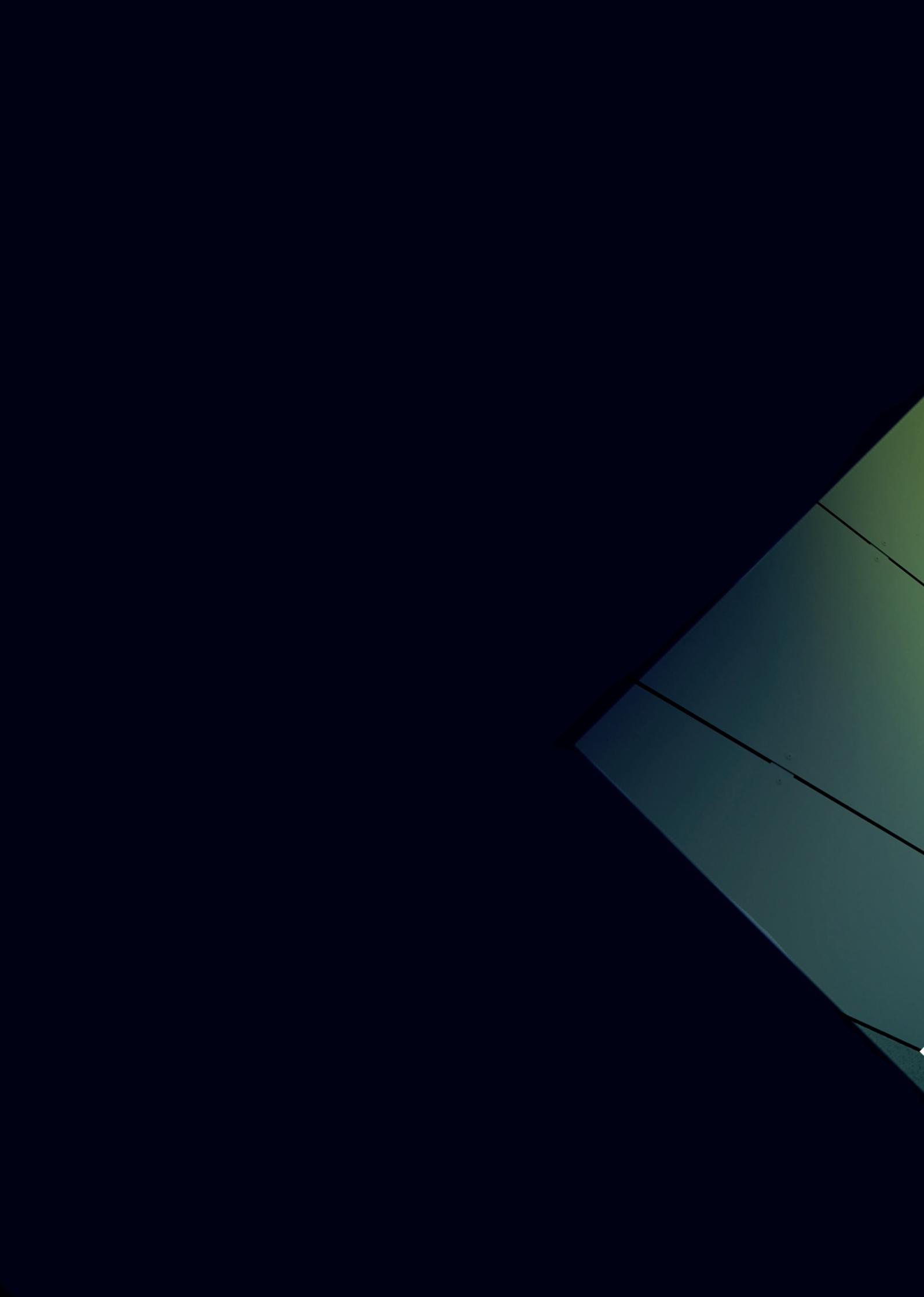
L'Oreal is an example of a company that uses an assessment of digital marketing skills. This assessment model has been used by more than 100 companies to evaluate the abilities of more than 25,000 marketing professionals, as well as by thousands of applicants pursuing employment opportunities. The data collected through the assessment is then used to guide priorities in training, to provide individual learning paths for training and to measure improvements post-training.

Some companies use existing data and advanced analytics to determine the skills available in their organization. Based on data from employees' background, performance, CV, and job description, they apply natural language processing to the documents to identify mentions of the targeted skills and to determine how many of these skills they currently have in the organization. This enables them to take a more holistic approach to the availability of skills, particularly if they are scattered across the organization. For example, ING harnesses data to understand what individuals can already do, versus what they need to learn.

To ensure that employees participating in training are sufficiently engaged, some companies require their employees to apply for the training, asking them to describe their motivations for learning this new skill set and how they see its application in their job. Others require future trainees to undertake some pre-training work as part of the selection process. For example, the MiSK Foundation, which provides training to Saudi nationals, was finding that many of their applicants had only applied because it was free of charge. By asking the training candidate to undergo some short exercises, it was able to assess both motivation and capabilities.

Companies are innovating in the way they support employees as they learn

Companies are experimenting with different forms of training support for employees, both in terms of formats and of cultural





environment. These range from use of technologies such as artificial intelligence to introducing new learning modes and new performance rewards, and new forms of flexible working to accommodate training time.

Artificial intelligence is being used to customise learning, with several companies transforming their training offerings by moving from traditional curriculums to a more self-paced, user-centric and digital training offering. Based on the skill gaps they have identified and information collected on the content watched by users and their peers, some companies use artificial intelligence algorithms to create training recommendations that match the user's needs. The data collected is also used to analyse how and what training is being taken up and to improve the overall offering continuously. For example, Edcast, a centralised learning platform, is compiling companies' learning content across a number of different channels and knowledge experts. Using an artificial intelligence-based targeting engine, the teams receive continuous learning recommendations that correspond to their needs.

Companies are also using a variety of new learning formats that are increasingly digital and employee-centric to improve the learning experience. For example, Walmart uses games to distil safety information and virtual reality to train its employees in preparation for black Friday in the US (the day after Thanksgiving that is considered the start of the holiday shopping season). However, even if learning increasingly takes place online, most companies are still using in-person interactions that add specific value to training. For example, L'Oréal uses a variety of formats to offer a more flexible and interactive learning experience. These include study trips, immersions in start-ups, practical workshops, and reverse mentoring, in which older executives are paired with younger employees.

Companies are also leveraging job rotation and secondments to immerse their employees in a new environment in order for them to learn new skills. This can be done both internally between different functions or geographic location and between different companies. For example, over the last ten years, P&G and Google have created an employee exchange programme between

their two organizations to foster innovation and the development of digital talent. It was also intended as a way of opening up their corporate cultures to new ideas in general.

To encourage people to learn new skills, companies need to create a culture of rewarding those who are proactively developing their skills set. Some are using financial incentives, for example, and adapting their bonus structures so that they reward the acquisition of new skills and the building of expertise. Others are adapting their career development paths, including requiring employees to develop one area of expertise in order to get promoted. This is the case at Wipro, where employees receive points for the skills they learn. This creates a competitive mindset when it comes to acquiring skills and is linked to career progression.

Today, most companies are offering training in parallel to work in a continuous learning approach. But while this reduces business interruption, employees often find it challenging to find the time at work for training. One approach is to introduce two-level training. This involves longer, more intensive courses for people who will use their skills as part of their daily work and shorter, one-week courses for those who simply need to understand a skill to that they can improve the way they interact with experts. To facilitate both models, a modular training approach with different levels and formats is needed.

To ensure that training candidates have the necessary free time to attend training, some companies are making whole training days a mandatory part of the job. For example, at Unilever employees are given a set number of days per year to upgrade their skills through mandatory training. Managers have also a key role prioritizing skills acquisition, giving employees a stronger incentive to spend time in training.

Disparities exist between small/medium size enterprises (SMEs) and large enterprises in the ability to offer employees the opportunity to reskill

According to the OECD⁸, a very significant gap exists between what small and medium companies offer their employees and that

⁸ OECD, Skills Development and Training in SMEs, 2013

offered at large companies. This research showed that (across OECD countries), small and medium companies offer half as much training as large firms.

Two factors could explain this disparity. While large companies often have stronger internal training capabilities, a broader people strategy and can afford to invest some of their employees' time in learning new skills, SMEs find it hard to define the skills they need, to spread the financial cost, and to free up time from their employees' day-to-day work for training.

While making a short-term assessment of skill needs is a more frequent practice in large companies than in SMEs, both company types struggle to think about training beyond a two- to five-year time horizon.

Even with additional financial incentives put in place (usually from government), only a limited share of SMEs take advantage of them because they are unable to free up their employees' time. The time factor also makes it hard to plan large transformation programmes that would see a significant share of the workforce undergoing training. And unlike large corporations, SMEs lack the financial resources and scale needed to develop their own learning centres or learning platforms.

Larger companies are able to do this. For example, Capital One, the financial services provider, has created an in-house developer academy to build the skills it needs. In order to create the scale necessary some SMEs join forces to develop training aggregators in a similar manner than shared back office services. In France, with the support of the French Textile and Clothing Institute, SMEs from the textile industry joined forces to define the needs of the future and develop the workers' skill sets.

In some places, government support programmes have been set up to address the financial, human resources, and capability challenges SMEs experience. Companies can also share training costs with others. In the UK, small groups of firms in the same industry and geographical area have formed training organizations through which to collaborate to increase their training capabilities. For example the Southampton Engineering Training Association (SETA) was

created to train engineering apprentice for the local industry needs but provides now training courses for adults. And in South Korea, the government developed the SME Training Consortiums Programme which encourages SME to group together and through which they provide SMEs with financial support to hire training managers.

Even so, the pressure to achieve faster results at large companies can lead to short-term decisions and lower levels of investment in people. By contrast, leaders at small companies are often closer to their workforce and feel more responsible for giving their workers the right skills.

THE PUBLIC INSTITUTION PERSPECTIVE

Public institutions have a role to play in supporting companies (particularly smaller ones) in providing skills to their employees

To address the gap between large and smaller companies' ability to manage workforce skills, public institutions can provide different forms of support. This includes providing tools to assess skills needs, helping smaller companies to form industry clusters to benefit from economies of scale, and acting as a platform for knowledge sharing and collaboration.

In assessing skills needs, public institutions have a role to play in gathering data on the labour market and mapping skills gaps. The OECD does this through its Survey of Adult Skills (PIAAC), which assesses the key cognitive and workplace skills needed for individuals to participate in society and for economies to prosper at a country level. And in Spain, a programme has been developed in to help SMEs assess their training needs.

Even with different industry environments (caused by different objectives and regulation for instance) there are many instances of less than optimal cross-industry collaboration. Public institutions can also act as a neutral point of contact and liaison between companies and industries.

Education institutions also have a key role to play in providing skills both before and after workers' entry in the labour force. To provide training opportunities that match companies' needs, partnership between education institutions and the private sector is paramount. For example, in Singapore, universities are partnering with companies

to define and develop the training programmes. Alibaba Group and the Nanyang Technological University created a joint research institute bringing together researchers to look at how artificial intelligence can improve the service delivery, which led to building of capabilities and development of training programs.

However, even when they have put incentive structures in place, public sector institutions need to help SMEs that cannot afford to lose a worker, often for even a few days' training. In Denmark, through the 'job rotation' programme, companies receive a public subsidy in order to hire a replacement worker while the incumbent is receiving training. The company receives the subsidy only if the replacement worker is unemployed or a recipient of social assistance. In 2013, more than 10,000 unemployed people were able to gain work experience through "jobrotation"⁹. The programme benefits both the company, which can afford to train an employee, and the unemployed person, who can learn new skills by executing a new set of tasks.

Public institutions can support workers who have exited or are about to exit the formal employment labour force

To support those not employed formally—who tend to receive less support in acquiring new skills—public institutions can help workers to understand both why they need to acquire new skills and what skills they need to acquire. This encourages workers to be more proactive in acquiring new skills and helps to reduce the gap between employees already receiving this type of sup-

⁹ Centre for Policy on Ageing, Foresight Future of an Ageing Population - International Case Studies, 2016

port from their companies and people who have exited the workforce or independent workers, and so are not receiving support through an employer.

First, by sharing labour market insights and explaining what jobs trends might mean for workers, public institutions can increase awareness of labour market trends and of the need for workers to acquire new skills. Second, they can provide skills assessments and career guidance. Finally, they can guide workers in finding the right training providers and can act as a guarantee for the quality of their courses.

Governments and NGOs have created platforms through which to share what they have learned from their data skills needs. One example is New Zealand's platform *Skills*, on which industry knowledge and trends is shared through infographics. However, these platforms can be difficult to navigate and are only effective if people are aware of their existence and of the need to upgrade their skills. To address this, Belgium and the Netherlands send some people career guidance vouchers giving them a session with an expert on upcoming trends, how they need to adapt and the opportunities available to them.

Specific institutions have an important role in protecting workers' interests during changes in the nature of work and skills acquisition

In a disruptive environment, certain institutions can ensure that access to skills acquisition is equitable. Here, trade unions have a key role to play as the advocates of employees, including freelancer workers and in promoting training standards. In the UK, Unionlearn—the learning and skills organization of the Trades Unions Congress (the umbrella body for trades unions in England and Wales)—promotes learning, provides support for workers in accessing learning and works to improve the quality of learning opportunities.

Unions also have a role in ensuring that all workers across all levels are given the opportunity to acquire new skills. Often, it is the most skilled workers who have the best training opportunities, widening the gap

between lower skilled and the higher skilled workers. Finally, unions act as intermediaries between the private and public sectors, especially in areas such as skilling.

Public institutions can help reduce inequalities between workers and provide a framework for the promotion of new skills acquisition

As well as reducing inequalities between workers of different levels, public institutions can ensure under-represented groups of society have equal access to training by creating a 'right to learn' or by establishing a minimum numbers of hours that must be spent in training. Several governments have created a regulatory environment that will make learning a fundamental right. For example, in France all workers have a personal learning account giving them up to 24 hours of training per year to use on training that they choose from among a list of approved courses. Originally created for full-time employees, access to these accounts has been extended to all workers. In Singapore, the government's SkillsFuture Credit programme¹⁰ gives all citizens over the age of 25 regular subsidies to use for training.

However, the challenge for governments is how to finance such programmes and whether employees receive compensation for time spent in training. When it comes to funding, individual learning accounts are one solution since they provide a source of income to cover costs related to training through contributions from states, companies or individuals. Another solution is the development of models such as the Adecco Group 'bench model', which is based on income sharing. The Group hires individuals, pays for their living costs and for their three-month training staffs individuals out to Adecco clients or institutions. In return, the individuals commit to work for in this programme for at least two years.

While many see potential in establishing a 'right to learn', the challenge will be engaging all stakeholders (companies, institutions and governments) in creating systems that support this.

¹⁰ Skills future (2018.11.01) Retrieved from: <http://www.skillsfuture.sg/Credit>

CONCLUSION

Across sectors, the right incentives need to be in place to create opportunities for access to the right amount and type of skills acquisition

While workers, companies and public institutions have developed many effective skills acquisition methods, the challenge remains ensuring that incentives are in place to deliver the right amount and type of training. This is particularly difficult for companies since they may be paying for the training of workers who will leave before the company can realise the benefits of this re-skilling/upskilling. To optimise skill acquisition, therefore, more effective co-operation is needed between each of society's stakeholders and the right incentives must be created, whether financial (to help internalize the externalities that skill acquisition grants workers) and/or non-financial.

Public institutions can fill the gaps by supporting the skills acquisition of SMEs or self-employed workers. Incentives can create a continuous learning mindset but for this mindset to become established, individuals need to have the right support in knowing what skills they need and where they can acquire them.

The final section is designed to offer some concrete ideas on how best to encourage the right incentives.



GUIDANCE & POLICY RECOMMENDATIONS

1. UNDERSTAND THE URGENCY AND DARE TO TAKE ACTION

- *Move from awareness to urgency:* Consistently across our research, we find that at a worker, company and industry level, the urgency to act is still limited, even if awareness is increasing.
- *Act despite the absence of standards:* The fact that there is no 'gold standard' for re-skilling does not mean companies should do nothing. In fact, they need to deliberately develop a portfolio of changes that require new skills, and experiment with forms of training.
- *Do not become paralysed by uncertainty:* If a company has a high-level strategic direction but is unable to identify skills gaps, it can still move forward by giving greater responsibility for business units and employees to manage some of the curriculum.
- *Go beyond small skill improvements:* To build their target skill set, companies should think more broadly about potential training candidates and provide more support to those in need of significant skilling.

2. ENABLE WORKERS TO TAKE ACTION

- *Awake a sense of responsibility in workers:* All workers should be responsible for acquiring new skills at all ages and stages in their career and should turn this responsibility into concrete action.
- *Free up time for training:* Significant differences exist between the needs of

certain types of workers. For employees, the buy-in of leadership is critical to ensure there is momentum behind training plans and that time is freed up from work to spend on learning. For independent workers, financial and other support structures will be needed so that they free up time for training.

- *Support decisions on the skills to acquire:* Companies should give workers guidance so that they can understand what skills will be needed in the future, both from a company perspective and for the overall industry and labour force.
- *Offer training options:* Workers require support in knowing where to acquire the required skills but also in terms of determining the quality of the training (particularly for self-employed workers).
- *Incentivise financially:* To overcome the cost barrier to acquiring new skills, financial incentives such as tax reduction, tax free training benefits, training grants or paid training leave could be used. Portable individual learning accounts, similar to a bank account, that can be used to buy training, can support individuals on their skill acquisition journey. They reduce the cost hurdle, give workers more control over their training and often come with guidance on the skills to acquire and the training offering.

3. SUPPORT COMPANIES IN THEIR SKILLING APPROACH

- *Incentivise increased spending:* Tax incentives can be used to promote corporate spending on training. For example, The

Aspen Institute has proposed a Worker Training Tax Credit¹¹ whose value would be 20% of the difference between an employer's current year spending on qualified training expenditure and an established base expenditure level, and would cover employer-provided training leading to an industry-recognised credential. Meanwhile, legislation introduced by two US senators¹² aims to incentivise apprenticeships through the creation of a \$5,000 tax credit for companies that hire workers enrolled in apprenticeship programmes. Another possible lever is the creation of new accounting models that would consider training as an investment, rather than as an expense.

- *Create a long-term vision for return on investment:* Providing the workforce with the right skills should be considered as a long-term investment, particularly since the cost of developing the workforce is often lower than the cost of talent acquisition (through poaching, bonus and severance payments and hiring costs).
- *Open up work-based training solutions:* By offering apprenticeships, companies, together with learning institutions, can develop a workforce through both on-the-job learning experiences and regular acquisition of new skills. Companies can also bring advanced (university-style) training opportunities to the workplace. For example, the Amazon Career Choice programme is offered through on-campus training sessions.
- *Adopt skills-based hiring:* Using skills assessments—rather than proxies such as college degrees or social networks—to identify high-potential job candidates can make the process more open and equitable as it is based on a common assessment for all candidates. In the UK, EY made the shift to skills-based hiring following an internal audit that found limited correlation between academic credentials and workplace performance.
- *Build a learning culture:* To enable the organization to invest the time and resources for everyone in the organization to learn new skills, learning should be considered as part of a job requirement both for employees and at a leadership level.

4. TRANSFORM THE LEARNING EXPERIENCE

- *Offer a personalized experience:* Artificial intelligence can be used to offer workers a personalized training experience that is linked to their specific job and the demand for new skills. By analysing the content users watched and using information on the skills they need to acquire for their current job profile, algorithms can determine the most relevant content for each user.
- *Increase willingness to learn through engaging formats:* Applications, gamification, virtual reality and augmented reality are a means of attracting the attention of training participants.
- *Lower time constraint barriers:* By making training more flexible, and modular through micro-learning and e-learning, it will be easier for employees to find the time for training

5. PROMOTE COLLABORATION BETWEEN DIFFERENT STAKEHOLDERS

- *Incentivise collaboration:* Strong potential exists in collaboration between corporations, governments, education institutions, skills institutions, unions and others. These groups have different perspectives and can accelerate initiatives by working together through employee exchange programmes and sharing knowledge and resources in developing tailored curricula. For example, the Global Apprenticeship Network (GAN)—a coalition between companies, international organizations and federations—aims to support young people entering the labour market and acquiring the skills they need.

¹¹ Fitzpayne A. and Pollack E., Worker training tax credit: Promoting employer investments in the workforce, 2017

¹² Apprenticeship and Jobs Training Act of 2014, U.S. Senators Susan Collins and Maria Cantwell

RESEARCH METHODOLOGY

The Adecco Group and BCG conducted a survey in summer 2018. Approximately 4,700 workers answered the online survey, conducted through a research agency. The population covered white-collar workers, defined as those with responsibility levels ranging from employees with no managerial responsibility to middle managers.

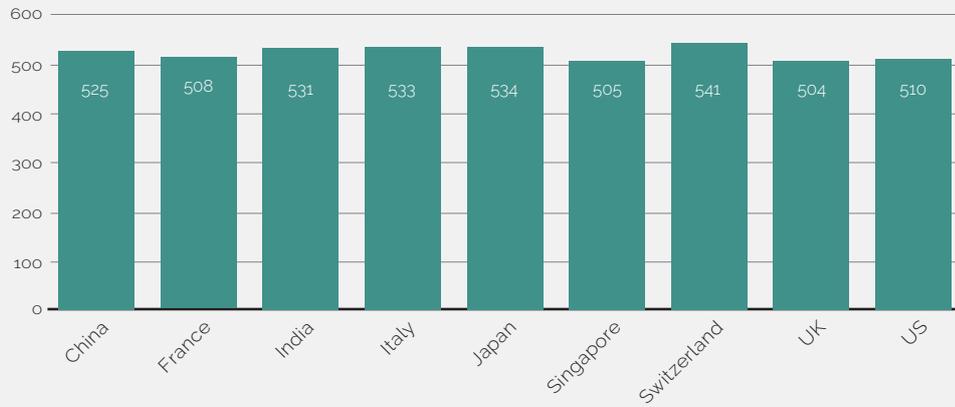
The 43-question survey elicited workers' perspectives on a variety of topics, including the speed of change and its impact on their jobs, their experience in acquiring new skills, the time spent on training, their level of responsibility for adapting their skills and their expectations from future training.

The survey gathered and segmented demographic information, making it possible to analyse respondents' attitudes along a number of parameters, including nationality, age, education level, industry, employment type, years of experience and level of hierarchy in an organization (see Exhibit 4).

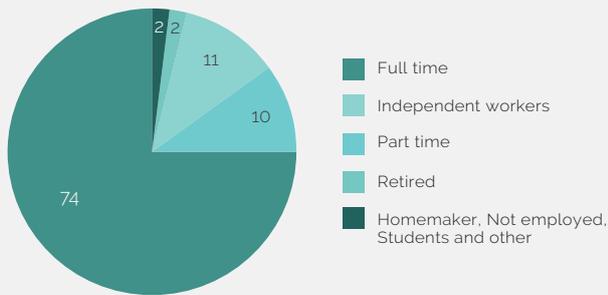
The Adecco Group and BCG also conducted a series of interviews with executives from both industries and public institutions. These were selected to ensure a global representation among respondents and to highlight best practices in the skilling of the workforce of the future. These interviews also provided insights into the perspective of upper management level executives, which were not the focus of the survey.

Exhibit 4: A survey of 4'691 white collar workers across 9 focus countries

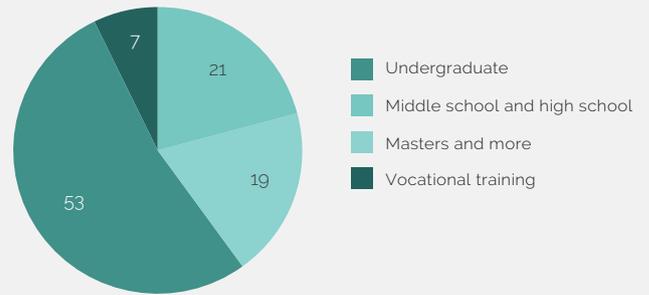
Nine globally representative countries



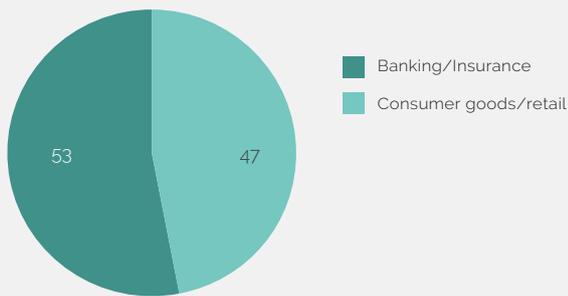
Large majority of part time and full time employees



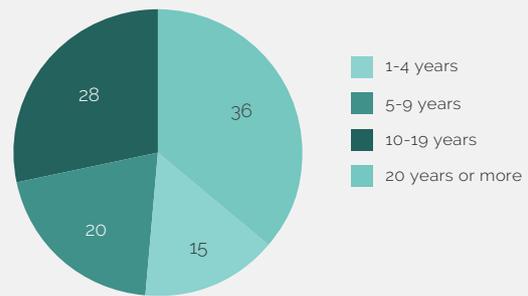
Educational attainment around bachelor level



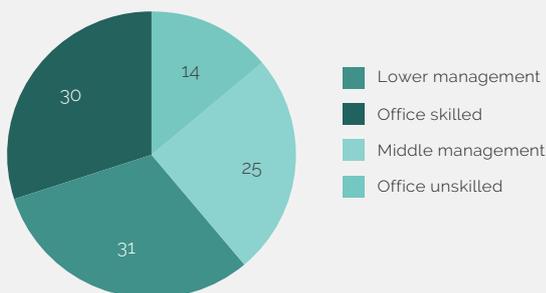
Across two industries



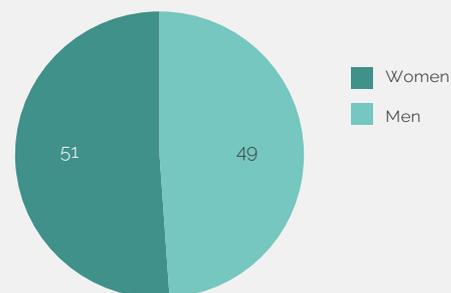
Broad range of work experience across respondents



Broad range of seniority level across respondents



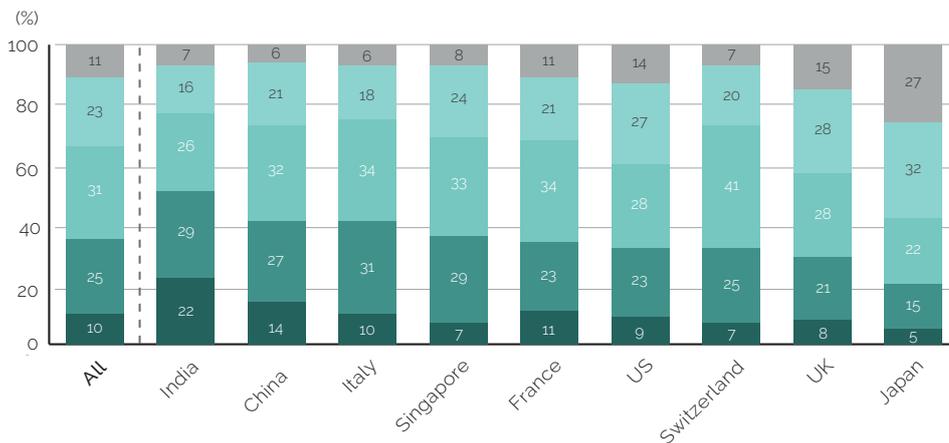
Gender split



APPENDIX: COUNTRY COMPARISONS OF KEY SURVEY DATA

66% of respondents expect their job to change regularly, with quickest change experienced in India, and slowest in Japan

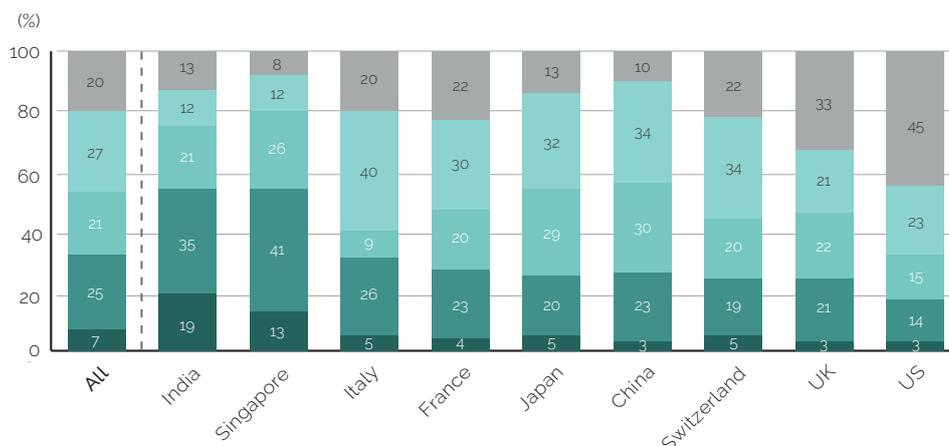
How quickly are technology trends (e.g., artificial intelligence, automation, digitization) changing your job?¹³



- Very quickly, some aspects of my job are in constant flux and it is challenging to keep up
- Quickly, I expect some aspects of my job to change every 2-3 years for the rest of my career
- Somewhat quickly, I expect some aspects of my job to change every 5 years for the rest of my career
- Slowly, I expect some aspects of my job to change 1-2 times over the course of my career
- Not at all, my job will not change long-term

Workers in India and Singapore are the most concerned about the impact of technological changes

How concerned are you about losing your job because of technological changes (e.g., artificial intelligence, automation, digitization)?¹³

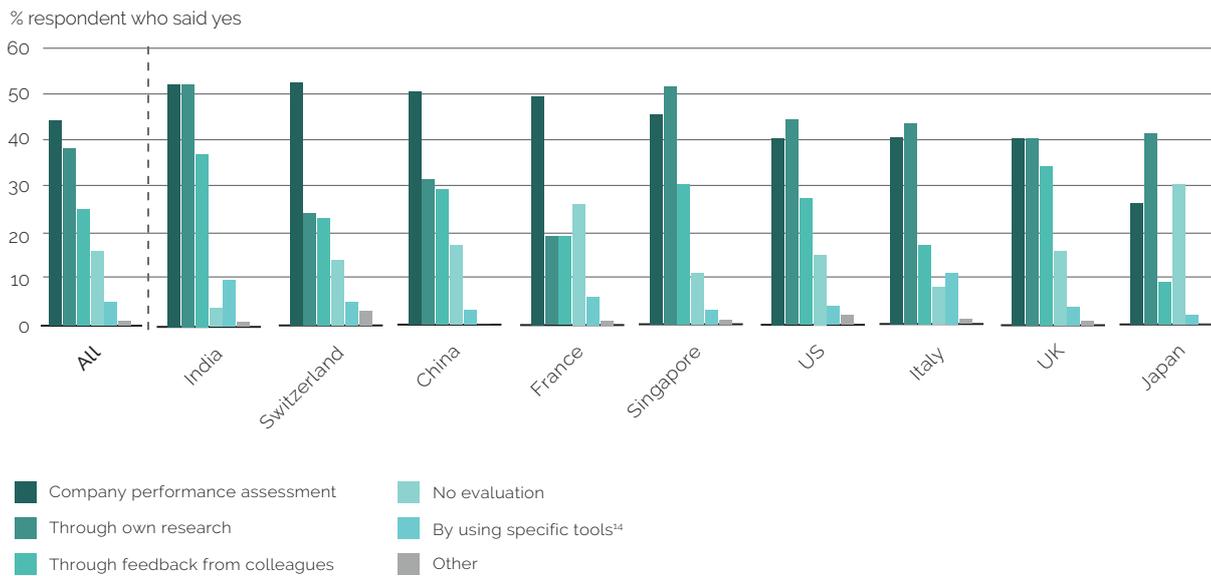


- Very concerned
- Somewhat concerned
- Neutral
- Somewhat unconcerned
- Not at all concerned

¹³ Question asked only to people currently working, therefore excluding the retired, homemaker, student, not employed and other respondents

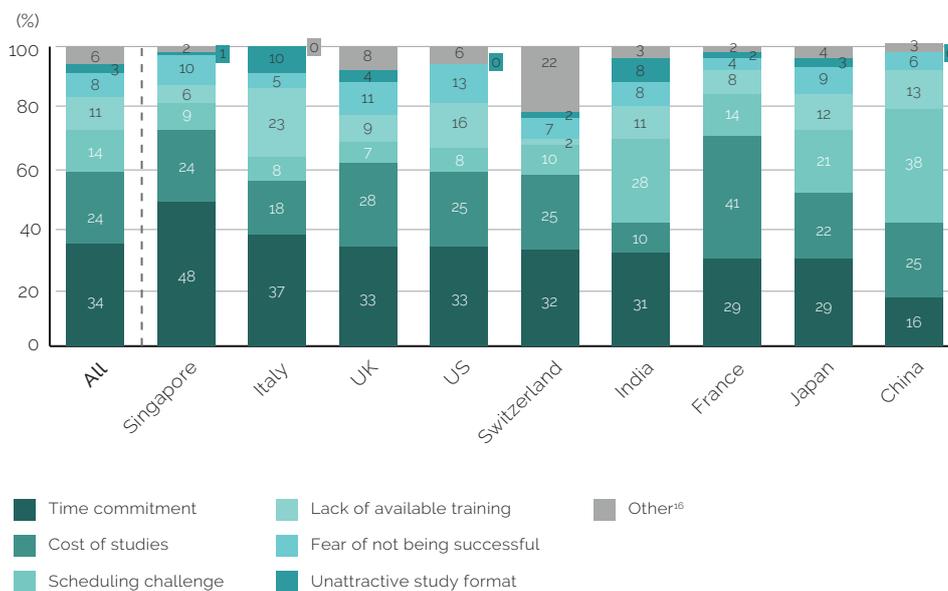
A company performance assessment is the most used mechanism to determine skills gaps, but workers' own research is also important in some countries

How do you evaluate if there is a difference between the skills you have and the ones you need to achieve your career goals? (multiple selection)



The main barriers to acquiring new skills are the lack of time and the cost of studies. In India, Japan and China, scheduling challenges are also a hurdle

What was the main reason for not acquiring new skills?¹⁵



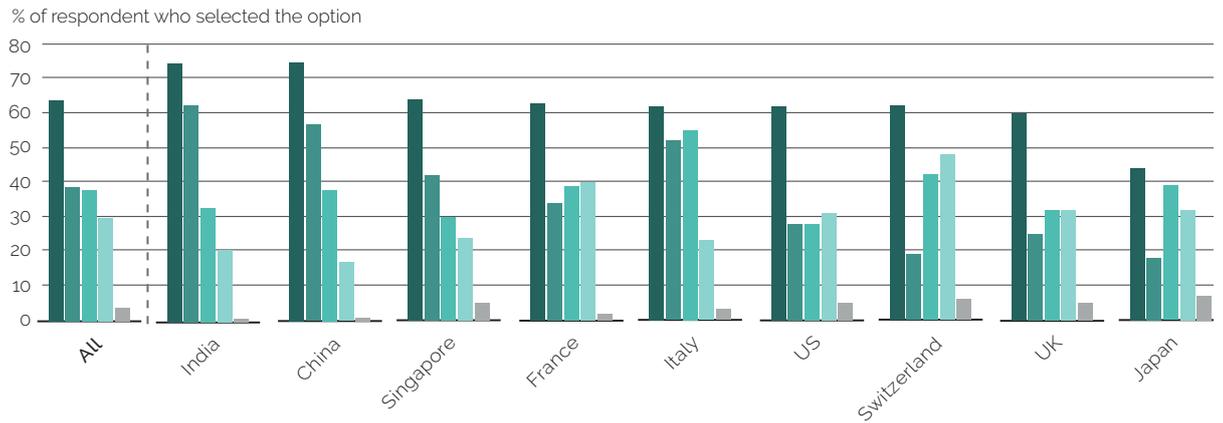
¹⁴ No specific tool mentioned: internet search, proprietary tool, computer based tool, skill assessment/survey, end of training test, client satisfaction, social network

¹⁵ Question only asked to respondents who did not acquired new skills but considered it

¹⁶ Not the right timing, not allowed by company, location

Indian and Chinese workers are the most digitally oriented in their acquisition of skills, while Swiss and Japanese workers are the least digitally oriented

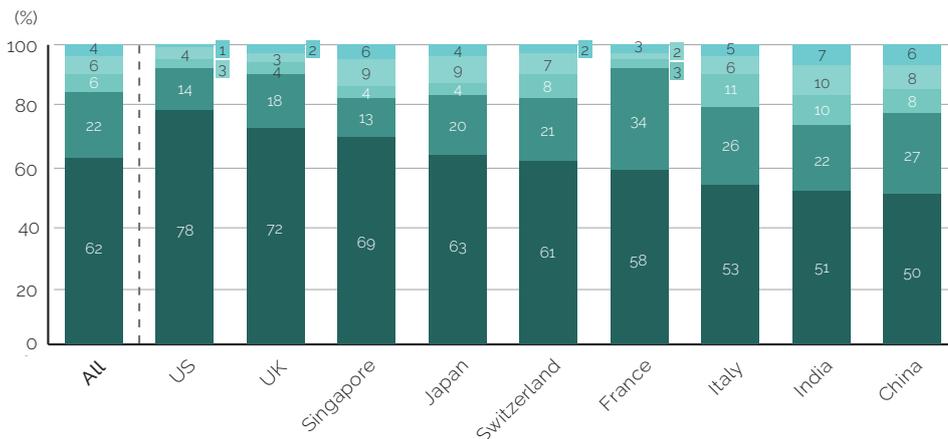
Which skillset did you acquire most recently?¹⁷ (Select up to 3)



- Ways of working (e.g. management, computer literacy, self-management, team working, project management tool, collaboration tool, agile)
- Data analytics and digital (e.g. artificial intelligence, machine learning, data analytics, data mining, design thinking, digital design, digital marketing, programming, data analysis)
- Communication skills (e.g. customer handling, oral and written communication, languages)
- Technical, practical or job-specific (e.g. accounting, marketing, finance, human resources, analysis, IT)
- Other

In China, Italy and India, workers see less responsibility to develop training opportunities themselves, than in the US and UK

Who is the most responsible for your acquisition of new skills?

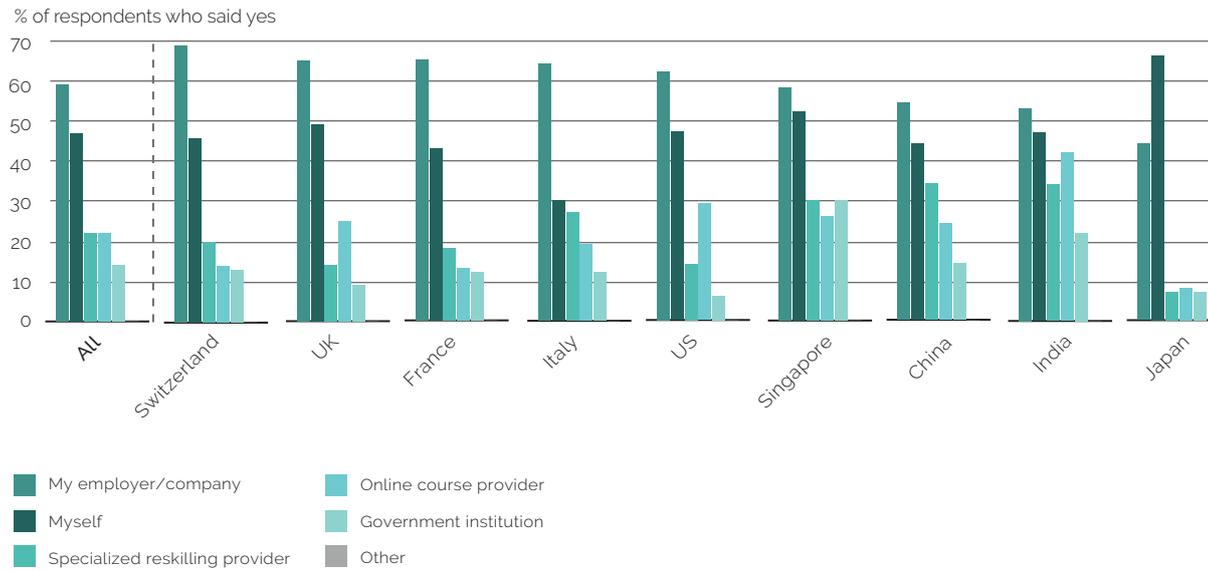


- Myself
- Companies
- Universities
- Governments
- Public institutions

¹⁷ Question only asked to respondents who have acquired new skills

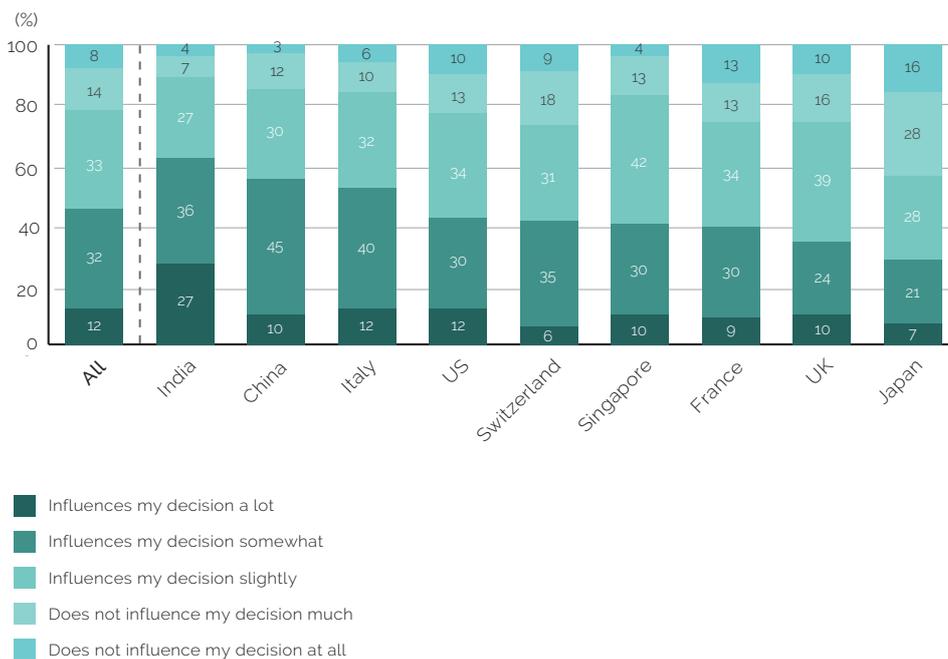
Across countries, workers expect mainly their employers to run training sessions, except in Japan

Who should be responsible to develop training opportunities? (Multiple selection)



The skilling policy of an employer influences respondents choice when taking a new job

When choosing an employer, how much does their support in acquiring new skills weigh in your decision?



ACKNOWLEDGEMENTS

This report is the first in a series on the Future of Work, produced in collaboration between the Adecco Group and the Boston Consulting Group.

Contributors

THE ADECCO GROUP

Jean-Christophe Ravaux

Head of Global Sales, Adecco Group

Jake Schwartz

CEO, General Assembly

Ranjit DeSousa

President, Lee Hecht Harrison

THE BOSTON CONSULTING GROUP

Judith Wallenstein

Senior Partner and Managing Director,
BCG Munich

Andreas Liedtke

Partner and Managing Director,
BCG Zurich

Theodore Roos

Principal, BCG London

Agathe Renard

Associate, BCG Geneva

The field survey was conducted by SSI.

We would like to thank Michelle Anthony, Delia Fischer, Cynthia Hansen, Vince Molinaro, Tom Ogletree, and Bettina Schaller from the Adecco Group as well as Lola Kinder from BCG for their contributions to the report. We would also like to thank Sarah Murray for her assistance in copy-editing this report as well as Maria Marchis and Francesco Camillo for the design and production contributions.

