

# LEARNING TO WORK, WORKING TO LEARN

Attitudes towards training, education and flexibility

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## Executive summary

**T**he term “fourth industrial revolution” has become ubiquitous among those seeking to put a label on the constellation of changes occurring in the workplace and society as a whole, due to technology. Often discussed with equal parts trepidation and hope, this catch-all has fuelled debate about the skills that workers across a variety of fields will need to maintain—or learn for the first time—in order to stay relevant in the labour markets of tomorrow. Though no one can predict with complete certainty what will be the most in-demand skills in five, ten or 20 years’ time, many have proffered reasonable guesses, as well as a pathway to learning them.

With this context in mind, The Economist Intelligence Unit conducted a survey, sponsored by Microsoft Philanthropies Asia, of executives in five Asian countries: Australia, India, Japan, Singapore and South Korea. All respondents work in middle management and hail from one of three industries: retail, manufacturing or public sector/government. The survey asked them about their expectations for future skills-development and their views toward professional training and education.

The main findings are as follows:

- Creative thinking and problem solving will be the skills of most value to future workplaces. These are often considered a necessary component of science, technology, engineering and mathematics (STEM) education, which has received increased emphasis by schools and governments in recent years.
- Only about one-fifth of respondents said they would be willing to spend five or more hours a week in training. Respondents in India are far more willing to invest time in professional education compared with those in other countries, likely due to India’s rapid pace of industrial change.
- Respondents understand that their industries are undergoing profound changes and will likely change more in future. Yet they also appear to be wearing rose-tinted spectacles about their own jobs: 86% believe their education and training has prepared them for their current job, a finding which suggests they consider their skills as up-to-date as necessary to stay employed.
- Flexible working—in terms of “when” as well as “where”—is popular. Seventy-four percent of respondents said they would be interested in working outside of normal business hours; a nearly-as-high share said they would be interested in working remotely.

What is clear from our study is that concerted attention and action will be needed from a variety of stakeholders. Individuals will need to show initiative and drive in learning new skills. Companies should help accommodate lifelong education and flexible working where they can. Governments should facilitate this process on a macro-level, by providing incentives and encouragement for training. Only via a multi-faceted approach can large-scale job redundancies—and the potential unemployment that may follow—be avoided.

#### Country highlights

**INDIA:** Of the five countries surveyed, India had the highest percentage of respondents (78%) answering that continuing education and training are “very important” to having a successful career in their industry or field. Respondents in India were also keenest on various forms of flexible work arrangements, including working remotely (65% answered they were “extremely interested”) and working outside of their firm’s normal working hours (60%).

**SINGAPORE:** Nearly 90% of respondents in Singapore answered that they had enrolled in education or training provided by their employer and 59% found that education or training to be “very helpful”, with an additional 41% answering it was “somewhat helpful”. Singapore was also just behind India in terms of the percentage of respondents (78%) who believe that creative thinking and problem solving skills “will be the most important over the next five years”.

**JAPAN:** Japanese respondents were the most negative or pessimistic about continuing education, training and flexible ways of working. Forty per cent answered that they were not willing

to undertake any training or education outside of work, a full 15% higher than the response rate in Australia, the next highest among the five countries. On flexible work, no respondents answered that they were “extremely interested” in collaborating with teams outside their country or region and only one expressed that level of interest in changing teams on a project basis.

**AUSTRALIA:** Australian respondents largely (75%) believe that leadership skills, such as managing teams, will be the most important skill over the next five years, followed closely by creative thinking and problem solving (68%). They also expressed the second-highest level of interest—behind India in most cases—in flexible ways of working, with 40% of respondents saying that they were “extremely interested” in working remotely and 38% expressing the same level of interest in working flexible hours.

**SOUTH KOREA:** Fifty-eight per cent of South Korean respondents answered that they believe their education and training has prepared them for their current role, the highest among the five countries surveyed. They were also the most likely (35%) to answer that their current profession will “not be very different” ten years from now.

## Introduction: the rhymes of history

**W**e've been here before. At the beginning of the 19th century, with the advent of the cotton gin and later steam power, there were widespread concerns about the coming obsolescence of labour. One hundred years later, when assembly lines and Fordism were ascendant, those same concerns were raised again, at least in the West. Two world wars were then fought, followed by a prolonged Cold War. During the Cold War, which lasted from 1945 until the late 1980s, technology continued to advance, as did globalisation. The latter gained force in the 1990s with the founding of the World Trade Organization, yet another step forward in global economic integration that was welcomed by many but feared by some for its estimated capacity to destroy jobs in the developed world.

The quote "History doesn't repeat itself but it often rhymes" is often attributed to the American writer Mark Twain. Whether the quote is apocryphal or not is less important than the truth it gets at. From time to time, history does appear to rhyme. Like the first industrial revolution, and the three revolutions that followed, there are now concerns that automation, both in hardware and, with advances in artificial intelligence (AI), increasingly in software, is going to roil labour markets, dooming a large portion of the world's population to a jobless future where the best most can hope for is a basic income provided by the state.

The main solution proposed now is the same as in the 1990s when the era of hyper-globalisation was just beginning: education and training. The idea is that workers displaced by advances in automation can be taught new skills that will enable them to work in new jobs or even entirely new fields. A factory worker who has lost his job on the assembly line to a robot, or an office worker whose administrative tasks can be done by a machine learning algorithm, should in theory be able learn another occupation, thereby ameliorating the disruptive impact of advancing technology.

But for this to work in practice there needs to be both a supply of education and training as well as demand for it. On the supply side, governments, the private sector and schools are engaging in varying levels of cooperation; some countries are further along in their cooperation than others. Singapore's programme is often held up as a model of success. The government offers its citizens a SG\$500 (\$367) "SkillsFuture" credit that they can put towards the more-than 23,000 available courses. The courses are curated based on an "Industry Transformation Map", says Soon Joo Gog, chief futurist and chief research officer at Skills Future Singapore, a statutory board under Singapore's Ministry of Education. "Every three years, multi-stakeholder councils for key industries meet in order to create, among other documents, a 'skills framework' to use as a reference point," Ms Gog says, "and that is used to consult with education providers about course development." Other actors are working in this space as well, in countries across the region. A professional organisation for accountants in Australia characterises its training courses as upskilling to meet changing industry demands.<sup>1</sup> In India, an information technology trade body recently launched an upskilling platform in conjunction with national officials.<sup>2</sup>

<sup>1</sup> CPA Australia official website, <https://www.cpaaustralia.com.au/employers/upskill-your-team>

<sup>2</sup> Priyankar Bhunia, "Future Skills' platform launched to upskill technology professionals in India", OpenGov, February 20th 2018, <https://www.opengovasia.com/articles/future-skills-platform-launched-to-upskill-technology-professionals-in-india>

## The demand side

But programmes like Singapore's and others, well-designed and targeted though they may be, only succeed if there is a willingness among the labour force to adapt to changing ways of work and to undertake the necessary education and training required. To that end, The Economist Intelligence Unit, with sponsorship from Microsoft Philanthropies Asia, fielded a survey of middle management across five countries—Australia, India, Japan, Singapore and South Korea—and three sectors: retail, manufacturing and public sector/government. Respondents were asked ten questions, ranging from how important they believe education and training are to a successful career in their field and which skills they believe will be most important for their careers in the next five years to the amount of time they are willing to spend on education.

The results are both encouraging and discouraging. In the first section of this paper, we discuss skills and the tension and complementarity between STEM skills and creative thinking and problem-solving. The majority of respondents identified creative thinking and problem solving as key skills for their careers, but at issue is whether modern corporate structures foster those skills or not. The next two sections concern education, lifelong learning and the amount of time that respondents are willing to dedicate outside of normal working hours to improving their skills. The results here are less encouraging, and suggest that even as our respondents generally acknowledge the change coming to their industries, they do not necessarily appreciate how much their own work arrangements or employability could change. The final section looks at attitudes towards more flexible work environments, including different hours, working remotely and working on project-based teams. The results were mixed, with respondents in some countries expressing clear preferences for some types of flexible work over others.

## Chapter 1. A question of balance

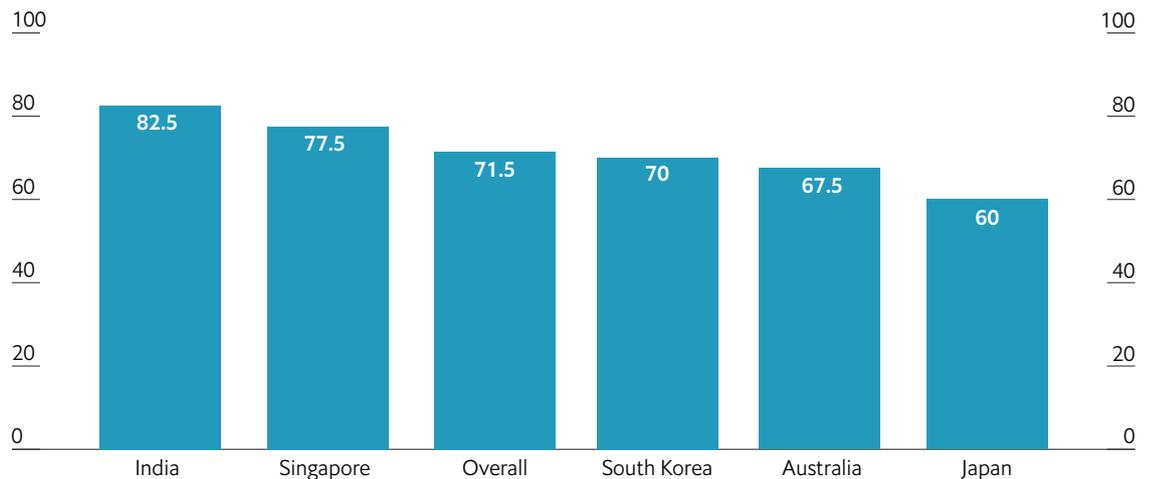
**W**ith all the attention and resources devoted by corporations, governments and educational institutions to improving STEM skills in the labour force, it would be understandable if workers assumed that such technical capabilities are vital to protecting their jobs today, let alone for building a long-term career.

The results of our survey defy those expectations somewhat.

When given a range of six skill sets to choose from in terms of order of how important respondents believe they will be over the next five years, the top answer was “creative thinking and problem-solving skills”, which received 72% of responses. At the country level, respondents in India selected this skill set as being the most important at the highest rate (83%); the lowest response rate was in Japan (60%), where “interpersonal skills, such as relationship management” was the most popular answer (75%).

### **Which of the following skills do you believe will be most important over the next 5 years?**

Share selecting creative and problem-solving skills (%)



Source: The Economist Intelligence Unit

In part, this result is likely indicative of a widespread recognition that, as technology pervades more of our work and personal lives, the ability to interpret data and make informed decisions is becoming more important. The problem, says James Hutchin, senior research fellow on the faculty of risk and healthcare management at Temple University’s Fox School of Business, is that the organisational structure of firms doesn’t always encourage this way of thinking, especially in middle management positions. Mr Hutchin uses the example of making furniture to illustrate his point. “In the 19th century, if I was making furniture, I might learn how to make a table one day and a chest or a drawer the next day. If a customer came along and said they wanted a desk, I could figure it out [based on my experience and knowledge].”

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You have to add something to the work of machines.

- Lynda Gratton, author, *Work Shift*

That is no longer case for workers in most industries, not just manufacturing. Even service sector jobs have been broken down into tasks. This has resulted, in the estimation of Mr Hutchin and others, in large swathes of the labour force no longer learning on the job in the ways they once did, or gaining skills as they progress in their careers. And in a system that no longer produces generalists, workers struggle to approach problems holistically or to use inferential thinking, both of which are approaches in the creative-thinking/problem-solving mindset.

Lynda Gratton, author of *Work Shift* and a number of other books on the future of work, believes that some form of creativity is increasingly vital. “You have to add something to the work of the machines,” Ms Gratton says, “and that will mean combining STEM or technical skills with an artistic bent or design capabilities or the ability to understand networks. Stand-alone skills will be less in demand.” She cites the Yale Computing and the Arts programme, which is an interdepartmental major between the computer science department and one of five potential art disciplines: architecture, art, history of art, music or theatre studies.<sup>3</sup> Computer programming or coding alone should not be the sole aim of upskilling; rather, it should focus on a combination of various disciplines that can complement the technical aspects of innovations like AI.

<sup>3</sup> Computing and the Arts, Yale College Programs of Study 2018–2019, <http://catalog.yale.edu/ycps/subjects-of-instruction/computing-arts/>

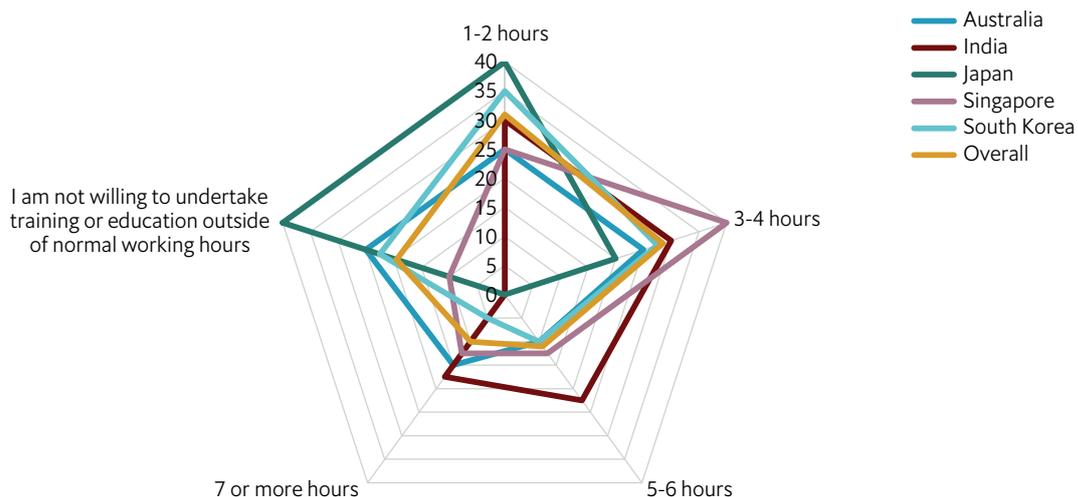
## Chapter 2. Time out of mind

**S**kills and knowledge cannot be downloaded over the course of an afternoon, a week or, in many instances, even a month. Most may not require the 10,000 hours research/practice popularised by US writer Malcolm Gladwell in his book *Outliers*, but serious time and effort short of that figure are nevertheless involved.

The results of our sample suggest that significant parts of the workforce in the countries and industries covered might not be up for it. Asked how much time they would be willing to undertake training or education outside of normal working hours, one-fifth of respondents said they are unwilling to spend any time at all. The plurality of respondents (31%) chose “1-2 hours” per week, followed by “3-4 hours” per week (29%). Only 21% in total responded that they would be willing to spend five hours or more.

### How many hours a week would you be willing to undertake training or education outside of normal working hours?

(%)



Source: The Economist Intelligence Unit

Among the individual countries covered by the survey, two stand out. One is India. There, no respondents answered that they are not willing to undertake training outside of normal working hours, the only one of the five countries where that was the case. This may be a product of India’s level of economic development and the pace with which various industries in the country are undergoing change. But some observers, like S Y Shah of the International Institute of Adult and Lifelong Education in India, argue that “Indian religious tradition and culture” have long promoted lifelong learning; the concept was even highlighted in a 1966 report by the Indian Education Commission, one of the earliest mentions of the concept in an official public policy document.<sup>4</sup>

<sup>4</sup> S Y Shah, “Lifelong Learning in India: A Policy Perspective”, ASEM Education and Research Hub for Lifelong Learning, <http://asemllhub.org/policy-briefs/lifelong-learning-in-india-a-policy-perspective/>

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The other country that stands out is Japan, albeit for the opposite reason. Forty per cent of Japanese respondents answered that they are not willing to undertake training outside of normal working hours, by far the highest rate among the five countries surveyed. Moreover, none of the Japanese respondents answered that they would be willing to do more than five hours of training per week; the remaining 60% either answered “1-2 hours” (40%) or “3-4 hours” (20%).

The explanation here, as with India, is likely cultural, but with a twist. Japan has a system of “lifetime employment.” It’s more of a “gentlemen’s agreement” than contractual, which is to say that its conditions are implicit. In exchange for not quitting and moving to another firm, workers in Japan don’t need to worry about being made redundant and can expect to move up the corporate ladder based on their seniority rather than the results of their work.<sup>5</sup> Although the system is gradually being eroded by the demands of the 21st-century economy, it remains in place in most Japanese firms and that, along with its legacy, appears to have bred a measure of complacency in the workforce.

Which isn’t to say that the results elsewhere were much more encouraging. The survey revealed a potentially broader disconnect in the labour force—at least in the five countries surveyed—between acknowledgement that their profession is going to change and their willingness to adapt to that change (as discussed above). When asked to assess how different they believe their profession will be ten years from today, 32% of respondents across all countries answered “very different” and 45% answered “somewhat different”. Only 3% of respondents answered that it would “not be different at all”. Respondents in India (58%) and South Korea (35%) selected “very different” at the highest rates, while Japan (18%), Singapore (23%) and Australia (25%) were the lowest, reflecting a difference between rapidly-developing economies such as India and those with slower rates of change, such as Japan. South Korea, whose high-tech sector has already embraced robotics to a fairly high degree, may be somewhat insulated from future transformations: one study ranked it at the bottom of a list of 29 countries whose jobs are most at risk from automation.<sup>6</sup> Australia, meanwhile, is grappling with a rise in insecure labour arrangements; one study found the proportion of men working part-time increased to 18% in 2016 from 14% in 2001.<sup>7</sup>

From an industry perspective, some striking differences in attitudes reflect the different nature of work between two of the key sectors we explore, manufacturing and retail. Over half of manufacturing respondents said that continuing education and training is very important to a successful career in their industry, versus only 39% of those in retail. This likely reflects the growing preponderance of robotics and automation in manufacturing, a field known for rapid changes in recent years. In terms of which skills will be most in-demand in five years’ time, technical skills were relatively more popular among manufacturing respondents (40% v 28% for retailers), while retailers chose leadership skills and interpersonal skills to a higher degree (65% v 50% and 52% v 38%, respectively). Both fields rated creative thinking and problem-solving skills highly.

<sup>5</sup> Kazutoshi Koshiro, “Lifetime employment in Japan: three models of the concept”, *Foreign Labor Developments*, August 1984, <https://www.bls.gov/opub/mlr/1984/08/rpt4full.pdf>

<sup>6</sup> John Hawksworth, Richard Berriman and Saloni Goel, *Will robots really steal our jobs? An international analysis of the potential long term impact of automation*, PwC, February 2018, <https://www.pwc.fr/fr/assets/files/pdf/2018/02/impact-of-automation-on-jobs-international-analysis-final%20report-feb-2018.pdf>

<sup>7</sup> Jessica Smart, “Australia’s welfare 2017: Changing trends in workforce participation and home ownership”, Australian Institute of Family Studies, February 27th 2018, <https://aifs.gov.au/cfca/2018/02/27/australias-welfare-2017-changing-trends-workforce-participation-and-home-ownership>

## Chapter 3. Confidence and confusion

<sup>8</sup> Employment by education level, OECD website, accessed May 15th 2018, <https://data.oecd.org/emp/employment-by-education-level.htm>

<sup>9</sup> Mona Mourshed, Diana Farrell and Dominic Barton, *Education to Employment: Designing a System that Works*, McKinsey Center for Government, <https://www.mckinsey.com/~/media/McKinsey/Industries/Social%20Sector/Our%20Insights/Education%20to%20employment%20Designing%20a%20system%20that%20works/Education%20to%20employment%20designing%20a%20system%20that%20works.ashx>

<sup>10</sup> *Worldwide Educating for the Future Index: A benchmark of the skills of tomorrow*, The Economist Intelligence Unit, September 2017, <http://educatingforthefuture.economist.com/>

<sup>11</sup> "Lifelong learning is becoming an economic imperative", *The Economist*, January 12th 2017, <https://www.economist.com/news/special-report/21714169-technological-change-demands-stronger-and-more-continuous-connections-between-education>

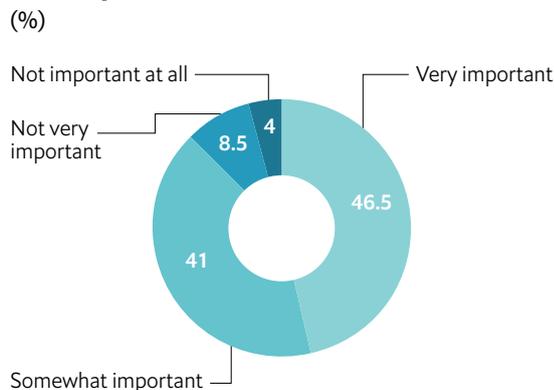
It should come as no surprise that better-educated people find jobs more easily. Across the OECD, a club of mostly-rich nations, 84% of those with a tertiary education are employed, versus only 57% of those who have completed only secondary school.<sup>8</sup> Recently, however, some have called into question the link between education and employment, particularly given that skills which once proved a sure-fire route to a good job may become obsolete in the not-too-distant future. In one survey by McKinsey, a consultancy, four in ten employers across nine countries said a skills shortage is a main reason for entry-level vacancies.<sup>9</sup>

Bridging this "skills gap" has thus become a prominent component of education reform around the world. In a recent EIU study assessing the extent to which global education systems are teaching the skills needed for today's young people to succeed in future, many countries are falling behind. This suggests that traditional classroom learning is not preparing people for the needs of a modern workforce.<sup>10</sup>

This is where lifelong learning comes in. According to a recent special report in *The Economist*, "A college degree at the start of a working career does not answer the need for the continuous acquisition of new skills".<sup>11</sup> Yet people are not necessarily adding to their skill set in ways that could shield them from coming disruptions. Jennifer Van Dale, a Hong Kong-based lawyer who specialises in employment issues, says that people often understand that technology will make an impact on the job market in a general sense, or on their field, but don't consider themselves particularly at risk. "If someone said, 'Is being a lawyer going to change in the next ten years?', they would say yes, but then they might also say, 'Oh, but me? Well, what I do, only a person could do what I do,'" she explains.

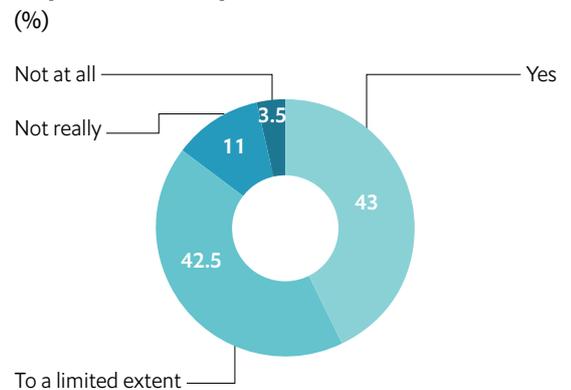
Our survey supports Ms Van Dale's viewpoint. When asked, "How important is continuing education and training to a successful career in your industry/field?", nearly nine in ten respondents

**How important is continuing education and training to a successful career in your industry/field?**



Source: The Economist Intelligence Unit

**Do you believe that your education and training have prepared you for the requirements of your current role?**



Source: The Economist Intelligence Unit

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Entrepreneurship and innovation matter not so much as part of classroom curriculums, but as natural bi-products of conducive working environments.

answered “very” or “somewhat important”. This supports the notion that people acknowledge, to an overwhelming degree, the coming waves of change. Yet when asked specifically, “Do you believe that your education and training have prepared you for the requirements of your current role?”, the vast majority (86%) also agree, at least to an extent. This suggests that people view themselves as insulated from whatever disruption might roil their industry, even as it heightens the need for lifelong learning more broadly.

This finding also reinforces the notion of Japan being an outlier among Asian countries: only 10% of Japanese respondents gave an unqualified “yes” to the question of whether their education and training have prepared them for their current roles, versus a survey average of 43%. Yet Japanese respondents also showed less willingness than respondents in other countries to take courses outside normal working hours, suggesting either that skills development is less important to career success, or that Japanese jobs are less likely to be made redundant by technology. The answer is, unfortunately, more likely the former rather than the latter, supported by the fact that only about two in three Japanese workers believe that continuing education and training are important to successful careers in their field, the lowest share of all countries surveyed.

### Learning how to learn

Regardless of whether one sits in a classroom for a specified number of hours outside their regular work lives, many of the most important workplace-of-tomorrow skills are not likely those that one can glean from rote memorisation or test-taking; as noted previously, the majority of survey-takers rate “creative thinking and problem-solving skills” as the most important to success in five years’ time. Perhaps it would be better to call these factors “qualities”, rather than “skills”: Mr Hutchin notes that vital yet amorphous traits like entrepreneurship and innovation matter not so much as part of classroom curriculums, but as natural bi-products of conducive working environments. “Entrepreneurship is fundamentally risk-taking behaviour,” he says.

In this sense, the definition of lifelong learning may need to be expanded to include the inculcation of qualities that can only occur via new and challenging situations. Another way to put it might be “learning how to learn”. The *Economist* report cited above explains how difficult it can be to gauge success in teaching skills like intellectual curiosity. What can be instilled, however, is more awareness over one’s own thought process, which can facilitate the acquisition of “soft” traits such as creativity.<sup>12</sup>

<sup>12</sup> “What employers can do to encourage their workers to retrain”, *The Economist*, January 14th 2017, <https://www.economist.com/news/special-report/21714171-companies-are-embracing-learning-core-skill-what-employers-can-do-encourage-their>

## Chapter 4. Flexible preferences

**T**he future of work is supposed to be defined, in large part, by flexibility. Flexible hours, flexible locations, flexible teams, flexible co-workers, flexible projects. The models for this kind of work are many and varied. The best known one is the “gig economy”, which is essentially freelancing facilitated by online platforms such as Uber (driving) and Task Rabbit (various). There is also the so-called “Hollywood model”, which is a more formalised version of the gig economy wherein a large group of people with various talents and skills gather to work together on a single project and when that project is complete, they move on to work with another group on a different project.<sup>13</sup> It’s the way most movies are made, hence the name.

The extent to which these models will be presented to large swathes of the labour force as a fait accompli is up for debate. Some employers could gain in the race for talent by offering more flexible work environment, with a trade-off in potentially decreased oversight over workers. However, the speed with which they are or are not adopted, both within in companies and externally, will depend at least in part on the level of acceptance among workers. To that end, we asked our survey sample to rate their interest, on a scale of 1-5, in five ways of flexible working:

- Working remotely, eg from home
- Working outside of normal company hours
- Working as a freelancer or independent contractor
- Changing teams on a project basis
- Working regularly with teams outside their home country or region

Among the respondents, there was a clear preference for two of the five choices. Seventy-four per cent answered that they would be “very” or “extremely” interested in working flexible hours outside of their firm’s normal working hours; 71% also answered that they would be “very” or “extremely interested” in working remotely. Among the remaining three choices, and by the same measure, freelance work (58%) and working with other countries/regions (50%) were the most popular, followed by “work on a project basis” (42%), the only option to receive a response rate below 50%.

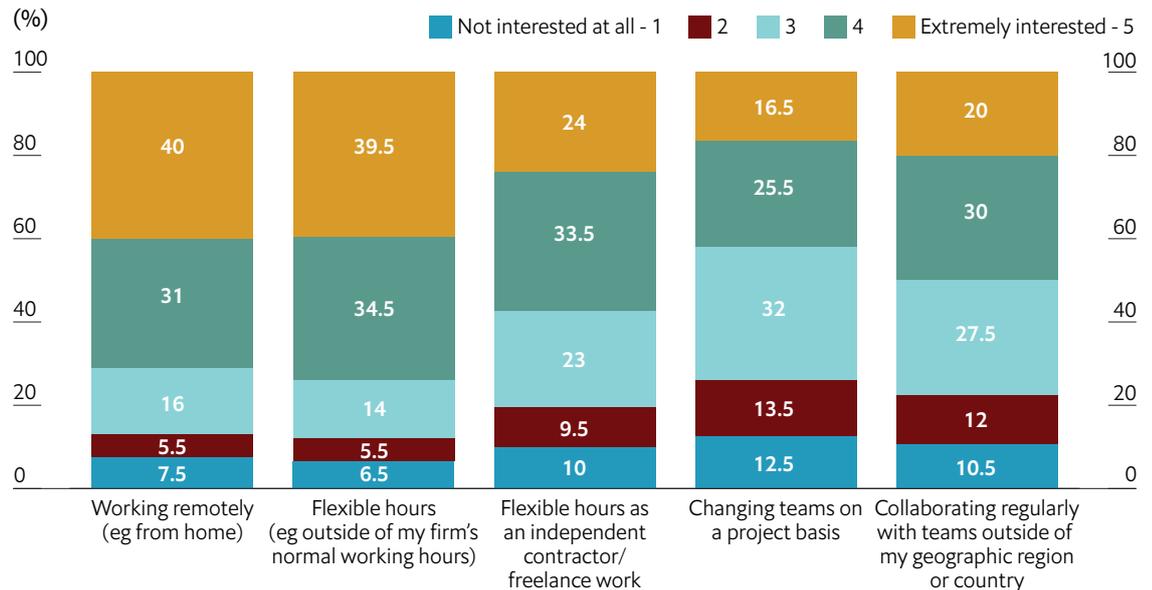
Once again at the country level, respondents in India and Japan were on opposite ends of the spectrum. In Japan, with its traditionally rigid work culture, there was little enthusiasm for most forms of flexible work, with the exception of the flexibility to work outside of normal office hours, which is understandable given the long hours expected, at least among the corporate labour force. But even for that option, only 52% were “very” or “extremely” interested. In India, however, there were high levels of enthusiasm for all varieties of flexible work, save for one: changing teams on a project basis. That option received 53% of “very” or “extremely” interested, as opposed to the other four, which all were 80% or above by the same measure.

<sup>13</sup> Adam Davidson, “What Hollywood Can Teach Us About the Future of Work”, *The New York Times Magazine*, May 5th 2015, <https://www.nytimes.com/2015/05/10/magazine/what-hollywood-can-teach-us-about-the-future-of-work.html>

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### On a scale of 1-5, how interested would you be in the following?



Source: The Economist Intelligence Unit

Elsewhere among the economies surveyed, the results varied. In Singapore, for example, there is a clear preference for flexible hours (88%), working remotely (83%) and freelance work (75%), with less interest in changing teams on a project basis (53%) and working with teams outside their region (53%). Although the survey data doesn't provide gender breakdowns by country, Rupum Biswas, CEO of Sendhelper and Sendjobs, two online job matching platforms, says in his experience women tend to be more interested in flexible work than men in Singapore and he believes that holds true elsewhere in Asia. "Women tend to take more advantage [of flexible work opportunities] than for a number of reasons, but mainly it's because they tend to take responsibility for the children and for visiting relatives and maintaining the home, so they see more value in flexibility." Flexible working may provide opportunities for other groups which may suffer from under-representation in the workforce, such as rural residents or people with disabilities, since it decouples the idea of work with the need to be physically present in the office.

## Conclusion: dealing with uncertainty

The fundamental skill most needed by middle management is dealing with uncertainty.

- James Hutchin, senior research fellow, risk and healthcare management, Fox School of Business, Temple University

As technology advances apace and the possibilities presented by AI become all the more apparent, it is easy to make sweeping generalisations about the future of work. Turning a critical eye to one's own capability to learn for tomorrow is much more difficult. As our survey shows, middle managers across Asia firmly acknowledge that continued learning will be crucial but are less certain about how much time they themselves are willing to commit to it. This may partly reflect entrenched barriers within the workplace; it also likely relates to how intangible many of the skills needed most in future, like creativity and critical thinking, will be.

Some of the contradictions reflect cultural differences among our survey sample. India's particular bullishness over lifelong learning—perhaps a reflection of the country's rapid economic transformation in recent years—contrasts with Japan's relative indifference, likely a result of its deeply entrenched corporate hierarchies. Respondents in mile-a-minute India are also most likely to believe that their jobs will be significantly different in ten years' time, while complacency is more widespread in Japan, Australia and Singapore.

Yet technologically-advanced countries like these must not expect their comparative advantages to last forever. At the broadest level, whole societies are poised to lead or lag based on the way their workers address the skills gap. Potential fixes like universal basic incomes, in which every person receives a wage from the government regardless of whether they have a job or not, is to many a less-desirable solution than keeping people employed in innovative fields. In order to accomplish this, however, policies must be put in place that encourage or mandate retraining on a massive scale. Singapore, for one, is starting to develop a framework for this, with other places beginning to follow suit.

Companies have their part to play as well, perhaps even more so than governments. They can offer paid time off for staff to take courses in subjects that will be crucial in next-generation workplaces. They can collaborate more closely with education systems to ensure that "soft" qualities like creativity—which might be a challenge to teach as a lifelong learning skill—are being instilled from an early age. Flexible working, defined by the parameters of the gig economy, will also likely become a fixture of future business life, which will present both a challenge and an opportunity for companies who know how to capitalise on it. Most of these shifts will require a greater investment in human resources, as technological disruptions roil the potential labour pool.

Individuals, however, will need to maintain a level of intellectual nimbleness and flexibility that may prove challenging in these changing times. For those who can adapt, this new era may present opportunities to transition to more value-added roles and attain a greater level of satisfaction from work. But this will entail more than simply adding a few technical skills to their repertoire—just as important will be continued intellectual curiosity and a willingness to take risks. As Mr Hutchin puts it: "The fundamental skill most needed by middle management is dealing with uncertainty."

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