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Trends in the
Skills Landscape
and How You Can Prepare

2022

Contents

Trends in the skills landscape and how you can prepare

In this white paper, we explore how skills are changing, and how your organisation can prepare for the future. First, we look at the trends affecting the skills landscape. Next, we determine the skills needed to future-proof your workplace. Then, we discuss skills gaps and the future of learning. Finally, we address how your organisation can meet the talent demands of the future.

Trends driving the changes in skills and competencies

The world is transforming. The rise of automation, computerisation and new work modes affects how corporations conduct business. We have pored over the latest research on current and future trends. Below, we provide a summary of the trends shaping the world of work.

> "Skills that make you human will make you employable."
>
> (Cognizant 2021b)

Human trends

Demographic changes and longer lifespans mean different and more diffuse careers. The modern labour market requires more flexibility from workers, particularly as the careers of today may not even exist tomorrow. Already, you see older generations preferring to remain in the labour market, working into their 70s or even 80s.

Organisational structures are shifting as technology allows - in line with latent human needs and desires. Notably, the pandemic boosted remote work to a great degree. It is here to stay. The changes force old businesses and stuffy government organisations to evolve. New workplaces unshackled by convention arise. The radical work modes they invent gradually spread by osmosis.

New communication tools require new communication skills. Entry-level writers are supported or supplanted by AI. Nevertheless, the ability to write clearly and powerfully is more significant than ever. New customers raised in the hyper-direct internet age demand personalisation in everything. Augmented reality tools are already here. Livestreaming has grown popular in retail, and will eventually spread to more sober industries. The quality of your content determines the perceived quality of your business.

Employees are no longer viewed as mere labour resources. They are now an integral part of their chosen teams. At the same time, many workers grow disillusioned—one cause of the great resignation. As a result, demands for workplace inclusion rise, and employers should take care that employees in all life stages can live whilst working. The future of humanity is becoming more interesting by the minute.

Technological trends

For the online white-collar workforce, digital is here and has been for a while. For the rest, it is coming. As we write, software eats the world.

"Digital transformation is the #1 priority in Australia and top two in all other regions."

LinkedIn Learning 2021

The ability to adapt to the combined effects of technological and societal changes has become extremely important, and our world grows ever more interconnected.

Despite considerable strides, the full impact of artificial intelligence and the big data that feeds it has not yet arrived. But business processes are being redesigned. AI and automation are now a means to optimise human performance. And collectively, humans and machines are achieving work standards never seen before.

The new reality is not machines replacing workers entirely. Instead, workers learn to work with and supervise machines. Often, this causes fractional replacement of workers. Before, palleting six hundred crates an hour with a vacuum crane might have taken three workers. Now, one robot and one human supervisor can handle twice that.

Due to the sheer potential and human effort involved, manufacturing has been at the forefront of innovation for years. But it is not the only industry being disrupted. Content agencies are using GPT-3-based AI tools to research and generate raw content that needs human editing. Intelligent machines are—often fractionally—pushing human employees out of increasingly complex tasks.

Together, humans and machines can create previously unobtainable value. The businesses that harness deep skills and the ability to deploy AI strategically are poised to out-compete those who do not.
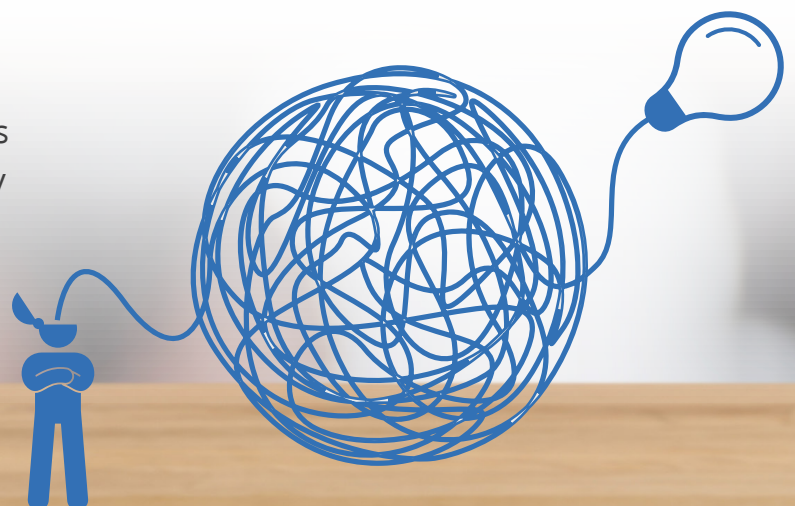
"While fewer think that killer robots will overwhelm mankind, fewer also think 'digital' is a silver bullet. Rather, respondents more fully understand not only the power of the tools in their hands but also the hard work ahead for those hands."

Cognizant 2021c

Increases in sensors and processing power make programming available virtually everywhere. But most organisations lack the competencies to deal with the possibilities of today, let alone the emerging technology of tomorrow. Generalists will need more than digital literacy, as well as the skills to get the most out of software and hardware.

The ability to think laterally about how to get the most out of technology, utilising automation and customisation options in software and even basic programming skills will be valuable. Outside a few high-tech businesses, these skills are sorely lacking. And all but the most glamorous of those have trouble gaining the talent they need. Increasingly, companies are turning to no-code and low-code solutions that allow people with limited programming skills to create software. The Excel Macro Builder has been around for a long time, but the news is that the options are more abundant and advanced than ever. For example, entire start-ups are now developed around no-code principles.

"Digital literacy is no longer enough. When organisations first started to introduce personal computers, few knew how to use them and some resisted the training. As word processing software replaced secretaries and typists, basic IT skills became essential. As more work is digitalised and automated, the need for digital literacy accumulates. Now, basic digital literacy is no longer enough. The organisations that succeed in the future will be those with deep technical skills in a broad set of employees."

Jon Windust, CEO, Cognology

Societal trends

The world urbanises. As a result, new hotbeds of talent rise in global cities—specialised, competent and expensive. But do not make the mistake of confusing accessibility with quality. Workers are more autonomous, and you can no longer expect all top talent to gravitate to the most prestigious firms with the biggest price tags. Just as easily, your next star hire could be a freelancer living in the countryside. Paradoxically, the global demand for talent and its accessibility are both higher than ever.

Inequality is increasing in many areas, but we foresee that the automation revolution will have an asymmetric impact. Some occupations will cease to exist. Jobs with low complexity and high repetition are likely to be automated. Educated workers like market researchers, proof-readers and bookkeepers may apply their skills to other applications, but what about those who have performed a single manual task all their lives? Eventually, the only jobs left to low-skill workers will be service professions.

Competition for top specialists is rising to nigh unbearable levels. Even now, employers in some fields have to adapt to labour shortages that have no end in sight. This is true in technical fields, where these under-supplied skills can seem irreplaceable. It is not so. There is an enormous potential for reducing load on critical talent. Any organisation that gains this capability will have a competitive advantage.

Workers seek increased flexibility. This trend was apparent even before the pandemic, but it has sped up due to the remote work revolution. In certain situations, flexibility means fewer person hours are available. In others, workers may free themselves to work only on their most necessary tasks. The flexibility trend can affect skill availability both positively and negatively.

Younger workers demand more than money and status from their work. They want work to matter. This will cause talent to move to industries, organisations and roles that are perceived as more meaningful.

Customers, workers and society at large require corporations to take social responsibility. Particularly, the responsibility for displaced workers increasingly falls on employers. Gone are the days when you could close a factory and take no responsibility. Today, forward-thinking companies are expected to set up career centres and collaborate with local authorities in repurposing workers made redundant by automation or outsourcing.

Skills and competencies needed to future-proof your workforce

In this section, we discuss the importance of human-machine skills, as well as the hard and soft skills that are most in demand in the future.

Human-machine skills

Skills that enable human-machine cooperation are already in demand, but they will only increase in importance. Businesses will require specialists to build and implement machines. Generalists will need the skills to cooperate with them.

> "Organisations with the skills to customise and configure technology for better process design will outpace those who merely use pre-defined processes."
>
> *Jon Windust, CEO, Cognology*

More and more people will need to learn technical skills, and understand what a piece of technology means for their work. As physical and digital machines perform an increasing share of work, it is critical that even first-line workers can tweak parameters to optimise output. This need exists on the factory floor and in the legal office, as there will not be enough specialists around. Successful automation depends on the company's ability to ease cooperation between man and machine and leverage the best strengths of both.

'Humanness' may become a premium skill. Companies will value talent who adapt, and who are self-motivated, creative and communicative. These skills will offer a competitive advantage when working with intelligent systems.

Hard skills

Employers require employees to have digital and tech skills. However, digital competency levels are not at all where they should be. Only a minority of organisations report addressing skills gaps in basic and advanced digital skills. The gaps, and the lack of attention given to them, are not coherent with the demand for digital skills. Bridging the divide will take effort, and the market will reward organisations that make it.

"Today, businesses and higher education institutes estimate that only about one-quarter of their total staff and students have the skill base to work and interact with emerging digital technologies. Respondents expect this figure to double in the next five years."

Cognizant 2020

"People who can extract rich and meaningful data from systems will help organisations make quality decisions. Individuals who can do this and communicate their findings are twice as valuable."

Jon Windust, CEO, Cognology

Demand for employees with a purely analytical skill-set is falling, as demand for analytical talent who can both crunch the numbers and communicate and collaborate about them rises.

In demand IT skills include cybersecurity and information security skills. For non-IT roles, digital literacy-requiring skills include digital marketing and data analysis.
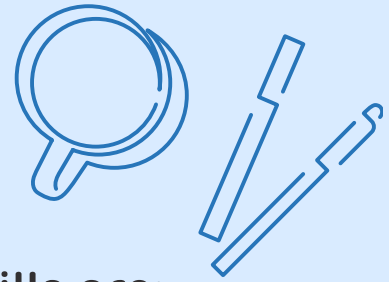
The essential future technological skills are:

- Complex problem solving
- Cybersecurity and information security
- Data analysis
- Digital marketing
- Domain skills, including mathematics, engineering and law
- Robotics/AI skills such as mechanical design control and robotic vision
- Systems evaluation and analysis
- Technical skills such as web design, app development and UI/UX design
- Technology design and programming
- Technology use, monitoring and control
- Troubleshooting and user experience

The current most trained specific technical skills are:

- Python programming
- Algorithms
- Artificial neural networks
- Cloud computing
- Deep learning
- General statistics and regression

Bakshi et al., Cognizant 2021a,
World Economic Forum 2020
WEF 2020
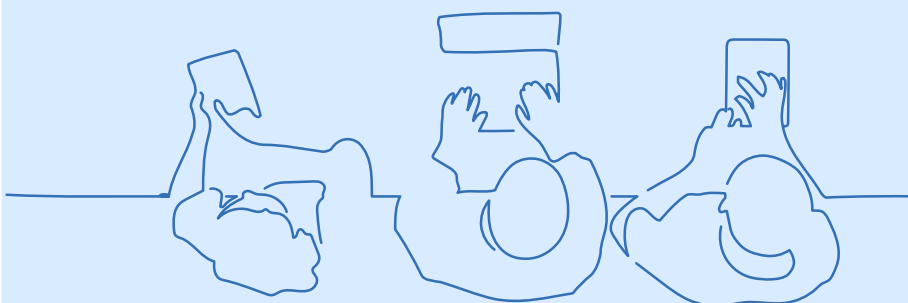
Human skills

In the future, soft skills such as innovation, decision-making, creativity, empathy and leadership will be in high demand (PWC 2018).

But developing empathy and skills like it is hard. Empathy is a big factor in leadership, coaching and other interpersonal tasks. For those who do not come naturally to it, becoming empathetic is hard work. It is even harder for employers to induce empathy in employees. Solutions include role modelling, mentoring and celebrating human skills (Cognizant 2021b).

"Process design is elusive but incredibly valuable. Take Google Maps. The value to the user is enormous. People use maps to go places where they can do things. You don't search for directions on Google Maps, then exit, search for restaurants, navigate their web pages and manually call their phone number. Instead, you have everything relevant in one place. You see the restaurant with all relevant information and go straight to booking. Coding creates value, but thinking up new ways to do things creates fortunes."

Jon Windust, CEO, Cognology
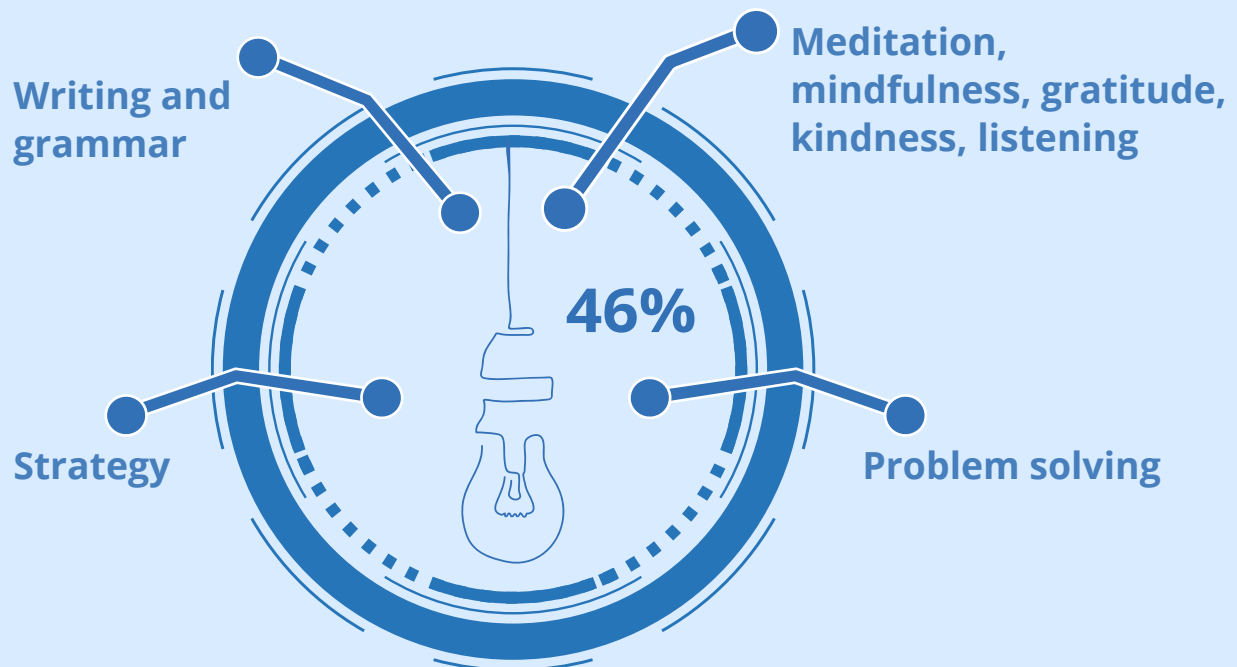
The most in-demand human skills are:

- Active learning and training strategies
- Creativity, originality and initiative
- Critical and computational thinking and analysis
- Cross-cultural competency
- Deductive analysis
- Domain skills like psychology, sociology and anthropology
- Educating, training and instructing others
- Ethics
- Judgement and decision-making
- Leadership and social influence
- New-media literacy
- Novel, analytical thinking and innovation
- Originality and fluency of ideas
- Persuasion and negotiation
- Process design
- Project planning and management
- Reasoning, complex problem-solving and ideation
- Resilience, stress tolerance and flexibility
- Self-management
- Sense-making
- Service orientation
- Social and emotional intelligence
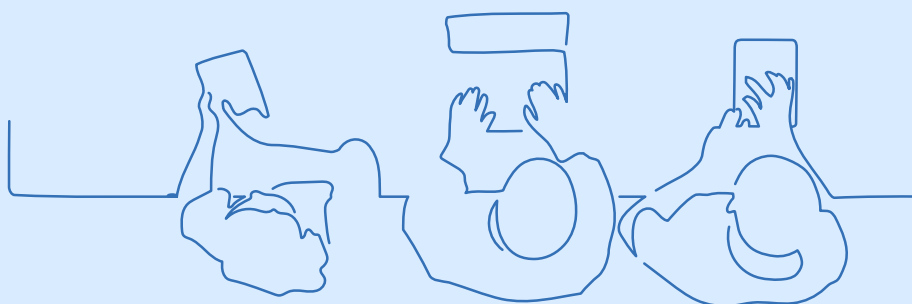
Bakhshi et al., Cognizant 2020, Institute for the Future 2020, WEF 2020)

The current most trained human skills are:

Writing and grammar

Meditation, mindfulness, gratitude, kindness, listening

46%

Strategy

Problem solving

WEF 2020

Management of customer experiences and customer relationships are vital for client-facing roles. The nature of customer service stands to change a lot in the future. With chatbots already handling first-line response in many organizations, humans will spend an increasing fraction of their time on more complex service tasks. High-service individuals will be in high demand, and we could see a movement of talent from high-end restaurant and hospitality occupations to client nurturing positions in business and beyond.

How to deal with skill gaps

The visibility of skills gaps and how to tackle them are crucial to success. But organisations do not tackle them fast enough. Speed up the process. It's time.

"Although the 'skills landscape' has never been as complex and important as it is today, the majority of HEIs (72%) and businesses (56%) are still identifying future skills. Businesses are further ahead, with 41% of respondents identifying and building future skills in parallel, compared with only 26% of HEIs doing so."

Cognizant 2020

The three most significant barriers to adopting new technologies are local labour market skill gaps, inability to attract specialised talent, and leadership skill gaps.

The literature suggests the following model to address skills gaps with (The Conference Board 2015, BCG):

1. Find the capabilities that the company will need in the future.

2. Let human resources help business leaders elaborate on which skills and competencies the organisation needs to develop those capabilities.

3. HR delivers data on talent demand and availability prioritised according to business impact.

4. The organisation creates a strategy to build capabilities by leveraging and investing in existing resources and gaining new ones as needed.

5. Translate the strategy into an operational plan.

6. Launch programmes designed to gain talent, up/reskill employees and reduce the demand for existing talent as needed.

7. Develop a learning culture.

8. Take responsibility for training the employees of the future, besides those of today.

When confronted with a skills gap, the most common solution is to train existing employees. However, this is less likely in companies where a generalist HR department handles learning (CIPD 2021), possibly because HR generalists are less focused on learning and more focused on admin/recruiting tasks. Regardless, companies should evaluate their learning practices and make sure they are not only working, but nurtured.

The most productive firms are more likely than others to respond to a skills gap by training their employees (CIPD 2021). The benefits of this are manifold—from a positive ROI on homegrown talent to better employee retention and internal mobility. But upskilling cannot stand alone.

You should take great care not to squander talent. Take the issue seriously and look at it in the broadest possible sense. Are your most valuable employees bogged down in work that an office assistant could have handled? If you have 80 engineers on staff who each waste 5 minutes a day doing paperwork or waiting for meetings to start, you lose a whole day's worth of work, every day. Are your processes wasteful? If your daily management meetings focus on information over action, you are wasting time. Does your culture promote mediocrity or skill stagnation? This will drive away the most driven and coddle the low-medium performers.

When drafting your plan, talk to your talent in person and ask what holds them back. If you are not doing this already, the results may surprise you. The adage that management pays external consultants to come in and tell them what their employees know is often true. Talk creates shared meaning.

"Employees who move into new jobs internally are 3.5 times as likely to be engaged employees."

LinkedIn Learning 2021

On the future of skill acquisition and learning

In this section, we establish what Generation Z means for skill development and learning, and why it matters whether leaders care about learning. We then evaluate the impact of new methods of learning delivery and the importance of upskilling and reskilling. Finally, we discuss whether you should acquire or develop talent.

Generation Z

Generation Z has gone all-in on its own learning. It is well that they have. As businesses automate entry-level jobs away, new jobs will have to be created for Gen Z and beyond to enter the workplace. Already, many European countries are suffering from high youth unemployment, and the race is on to stop the creation of a lost generation (Euronews).

84%

of university educators worry about preparing the workforce for the future

- Cognizant 2020

In addition, as skills become more domain-specific than before, having dedicated entry paths allows you to tap into blue ocean talent and develop it to meet your needs.

Generation Z will demand new learning methods, both before and after entering the workforce. Weaned on responsive media, textbooks and lectures alone will not sate their hunger for learning—learning must be available on their terms. Businesses and other education providers will personalise platforms for learning using AI, and augmented reality will be common (Cognizant 2020).

"Gen Z learning is speeding up, both in terms of total learners and hours viewed per learner (50% more than average)

76% of Gen Z learners believe learning is the key to a successful career."

LinkedIn Learning 2021

"Mobile learning that delivers bite-sized micro-learning on a continuous basis is a great way to build [...] essential skills."

CIPD 2020b

Leaders who care matter

There is a startling difference between practices in organisations where leaders care about learning and development (L&D) and where they do not. For example, twice as many organisations where leaders value L&D report having systems to capture and share learning.

When leaders do not appreciate L&D, employees have less faith in the organisation's ability to address skills gaps. Conversely, organisations where leaders value learning and development are much more likely to develop staff in response to gaps. They are also more likely to factor in the impact of automation and how it changes roles (CIPD 2021).

New methods of learning delivery

Broadly, businesses and higher education institutions agree on most things, but HEIs do not perceive developing human skills as their responsibility. In the future, on-the-job learning will only become more important, and companies will constantly re-evaluate their curricula. Less than half (47%) of UK employees agree their job offers good opportunities to develop their skills (CIPD 2019).

Face-to-face training will become less relevant in the business domain. Today, still the top approach, it will lose ground to various remote and digital learning solutions within the next five years. As a result, AI-driven training, in particular, will triple in importance (Cognizant 2020).

Examples of providers delivering learning in new ways include:

- Mursion—VR training for people skills from leadership to diversity.
- Guild Education—an education platform for upskilling workers and keeping their development aligned with your career pathways.
- Elephants Don't Forget—bite-sized learning to maximise retention.

"Businesses now carry a growing share of learning, recognising that skills need frequent upgrades. Yet, while 43% of companies update their learning content every 12 or 24 months, 71% of HEIs change their curriculum only every two to six years."

Cognizant 2020

Best in class organisations adopt the learning methods of the future. For example, they are 93% more likely to utilise social learning, 94% more likely to use user-created video content, and 119% more likely to have mobile learning solutions in their learning strategy. (The Competency-Based Management Blog).
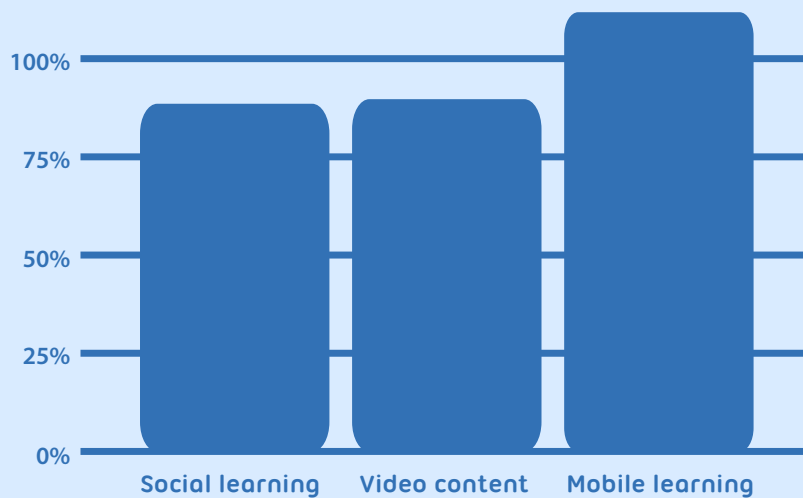
Source: (The Competency-Based Management Blog).

Upskilling and reskilling

Upskilling and reskilling are both on an upward curve, driven by changing job requirements, digital transformation, and the rise of automation. The full effects of the latter are still out of sight, but you can expect massive changes.

Despite increasing demographic pressures, limited public funds exist for upskilling and reskilling initiatives. Businesses should expect to bear the brunt, whether fair or not.

What happens, for example, when three out of four workers on a workshop floor become obsolete, replaced by robots, cobots, and other innovative solutions? Management can upskill some to manage the new machines, but must reskill and repurpose the rest for other work. The same is true when white-collar tasks such as legal or writing work are replaced by AI. The responsibility for finding new work or employment for displaced employees will fall on the organisation.

Smaller businesses focus more on upskilling and reskilling than larger organisations, who should start getting after it. One exception is AT&T, who is amid a massive $1 billion reskilling program. Management discovered that almost half of the company's quarter-million employees lacked necessary skills, and took action.

Known internally as Future Ready, the initiative includes online courses and a career centre that helps employees find the jobs that the company will demand in the future. Today, 180,000 employees have taken part in the program and spent a total of 2 million hours—equivalent to an entire workday per employee.

"Upskilling and reskilling is the top priority for L&D pros globally."
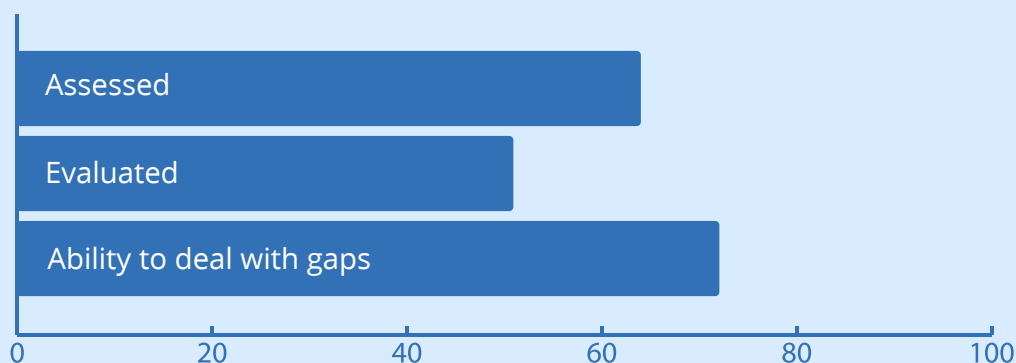
LinkedIn Learning 2021

64% of organisations said they had assessed how to reskill employees in the face of changing roles.

51% of organisations agreed they had evaluated reskilling options because of automation.

72% believe their organisation can deal with the identified skill gaps (CIPD 2021).

Assessed

Evaluated

Ability to deal with gaps

0   20   40   60   80   100

Currently, upskilling focuses on technical skills, with a comparatively lesser focus on human skills (WEF 2020). However, the difference in emphasis is not ideal. As we showed above, human and human-machine skills are just as vital to the future. So, leaders should ponder how best to develop human skills alongside technical ones.

Employers will reskill employees more frequently in the future, moving from annual reskilling programs to continuous reskilling, supported by new automated tools. Frequent reskilling will take time and resources. So, most businesses expect to increase their annual investment in learning and training substantially (Cognizant 2020).
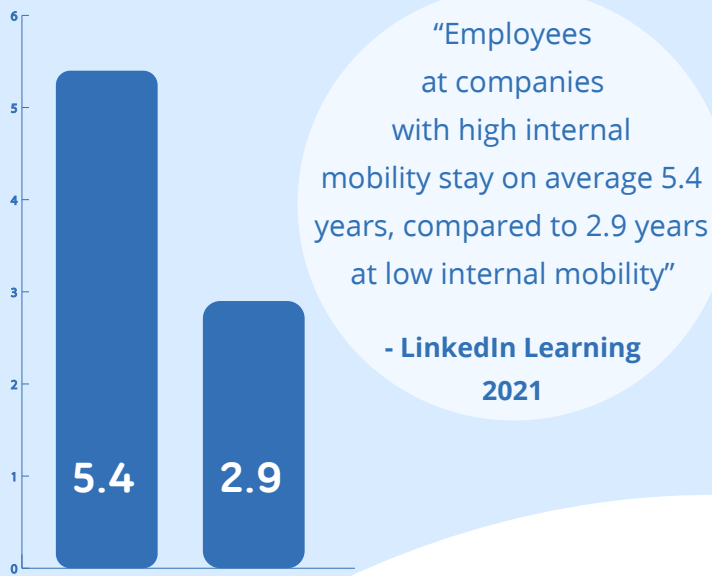
Employers need to develop and use metrics to measure their efforts. These will align with organisational goals and focus on business performance, including improved operations and reduced human error. Also, businesses should link employee performance metrics with the new initiatives (Cognizant 2020).

"The people profession will need to reskill and provide for reskilling. L&D would need to improve its own digital capability and digital instructional design. Learning design will have to become agile. HR would need to truly partner with business to understand the real challenges and areas that employees need to be developed."

- CIPD 2020b

"Employees at companies with high internal mobility stay on average 5.4 years, compared to 2.9 years at low internal mobility"

- LinkedIn Learning 2021

Skills are more perishable than ever before. After 2-3 years, upskilling will be necessary, and in certain domains such as PLC programming, yearly updates may be required. Lifelong learning will characterise the near-future labour market.

Combined with transforming workplaces and longer lifespans, the idea of a 'career for life' will diminish to near non-existence. Instead, people will base their careers on skills and experiences that translate into different domains.

74% of the general population believe that updating their skills is their responsibility, not an employer's.

- PWC 2018

To build or not to build

How to address a skills gap is an important strategic decision for any organisation. Take care to weigh and measure the relative merits of each option.

Also, organisations should take care not to let their internal organisation determine which approach they choose, but approach it from a purely strategic perspective. When faced with a skills gap, organisations where a generalist HR department handles learning are the least inclined to build and the most likely to do nothing (CIPD 2020a).

Organisations with a specialised learning department within HR are comparably more likely to buy, borrow or bot. However, they are less likely to be able to elaborate on what they do and why. Organisations where L&D is close to operations are most likely to build or outsource work (CIPD 2020a).

"Organisations typically adopt a 'build' approach to address skills gaps. Dave Ulrich's 'build versus buy versus borrow' resourcing approach is about whether an organisation prefers to develop skills internally ('build'), or via recruitment from outside the organisation ('buy') or from a contingent labour supply ('borrow'). Increasingly organisations are turning towards a fourth option: 'bot', that is, to automate tasks or roles affected by skill gaps."

CIPD 2020a

In one of PWC's visions of the future, "Larger organisations scour the world to 'acqui-hire' talent and intellectual property using specialist talent strategists in combination with AI to identify the specialists they want."

PWC 2018

It is important that businesses do not limit themselves when thinking of skills gaps.

Equal to the options above, other ways to free up skills include:

- Redesigning business processes to reduce the need for critical talent.

- Redesigning the organisation to allow employees to deliver skills together.

- Moving low-skill tasks away from crucial workers, so they have more time for meaningful work.

- Capturing essential knowledge and making it available to all employees when they need it.

As demand for critical talent skyrockets, it will drive 'buy' costs to unseen heights. Companies must not compete on wages only—that will cause a negative spiral that only benefits the ultra-talented, who will be free to pick employers, wages and conditions, and leave both organisations and other workers by the roadside.

"The supply of skills like cloud computing and cybersecurity can't satisfy [...] demand. Executives have this idea that 'as my people become obsolete, I'll just hire new people.'

Well, they won't be there"

- Paul Daugherty, Chief Technology and Innovation Officer at Accenture.

Conclusion

This paper explored the future of work. We identified the key trends in the talent marketplace, such as man-machine collaboration. We then determined the key skills of the future.

Next, we provided a universal framework for addressing skills gaps. We then considered Gen Z and new learning technologies, as well as the impact of upskilling and reskilling.

Finally, we discussed one of the key future challenges that employers face:

How to ensure that your organisation can meet future talent demands. We presented the basic strategies for acquiring talent above. Do not undertake any of them blindly.

Instead, streamline processes. Keep the need for expensive talent down.

At the same time, identify human potential. Look inside and outside the organisation.

Finally, develop employees so they have the skills you need. These three steps are the key to reshaping your workforce and getting the skills of the future.

The world of work is changing at an unprecedented pace. Preparing for tomorrow requires both strategic thinking and process optimisation.

At Cognology, we build systems that help you automate and optimise your people management.

The key difference in our approach is that we employ experienced HR professionals who help you through the challenges of implementation. We know what it is like to handle difficult HR issues and we will guide you in the right direction.

Our online competency management system was created to help your employees build the capability you need. All your competency management needs are right at your fingertips:

Automated competency assessments. Rich reports. The data you need to assess skills and identify and address skill gaps. A roadmap for your skill development that updates as you go along. All in one place.

The system comes with a built in, customisable competency library, and a full suite of reporting and analysis tools that give management the information they need.

Reach out to our team for more information, a demo of our solutions,
or just to share your thoughts on the future of work.

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