Microsoft

Unlocking the UK's potential with digital skills

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Insights for UK leaders on how to close the skills gap and achieve more in the new world of work

Unlocking the UK's potential with digital skills

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Conducted in the summer and autumn of 2020, this new academic study from Microsoft and Goldsmiths, University of London, explores the current state of digital skills in UK organisations and sets out a roadmap for the journey ahead.

Featuring a combination of quantitative research and commentary from subject matter experts and UK business leaders, this report assesses the nation's strengths and weaknesses when it comes to digital skills investment, as well as the opportunities that upskilling presents for individuals, organisations and the UK as a whole. The report also outlines a series of practical recommendations for how business leaders can scale their workforce's digital skills capabilities, accelerate progress and successfully navigate the road to recovery.

Click on the icons below to discover the topics we cover in this interactive report:

1

The UK skills gap

A snapshot of the current state of digital skills in the UK, which identifies a persistent skills gap, and the obstacles organisations face in addressing it

2

The bottom line opportunity

Quantified insights into the precise impact of digital skills investment on company competitiveness, and the key focus areas that drive transformation

3

Rise of the Next Gen Worker

Introducing organisations' untapped resource, a new generation of productively skilled people, enabled by low code and no code technology

4

Act now

The practical steps leaders must take to address the skills disparity and prepare themselves, their people and the UK economy to lead in the digital age

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Case studies

Hear directly from world-class subject matter experts and business leaders at the University of Lincoln, Cumbria Police, Lloyds Banking Group and GSK

Foreword

As Benjamin Franklin said, out of adversity, comes opportunity. And more than two centuries later, his words still ring true, even if they may make for cold comfort in such challenging times. Certainly, it is true that COVID-19 has dramatically accelerated the UK's digital transformation, placing remote working and technology solutions at the heart of organisations up and down the country.

Yet as well as powering much-needed progress, this has thrown some of our nation's collective shortcomings into sharp relief. Right now, more than two thirds (69%) of leaders surveyed say their organisation is currently facing a digital skills gap and this could significantly impair their ability to recover and grow in the current economic climate. The challenge is to close that gap – and quickly.

"More than two thirds of UK leaders say their organisation is facing a digital skills gap. The challenge is to close it – and quickly."

In drawing upon the findings of a joint research project between Microsoft and a team of independent researchers led by Dr Chris Brauer at Goldsmiths, University of London, this report explores the state of digital skills in UK organisations across a variety of sectors and locations. And even more importantly, it seeks to **lay out a clear and practical roadmap for how organisations take action** to position themselves and their people to succeed in the digital age.

There is unquestionably much work to be done. But amidst the inevitable challenges, we find a great deal to be positive about too. Leaders are increasingly aware of the need to address the skills gap, viewing enhanced technical capabilities and a digitally diverse talent pool as essential to economic recovery. Meanwhile, employees understand how crucial digital competencies will be to their future employability and are keen to develop them. We also reveal that when harnessed correctly, digital skills can contribute a boost to a company's bottom line.

As for what these skills look like, our researchers draw a clear and important distinction between consumptive skills, which allow people to use digital tools and systems built by others, and productive skills that enable them to create those tools and process for themselves – the latter of which can deliver twice the impact on overall organisational performance. We also identify an emerging generation of workers who, enabled by low code and no code technologies and supported by empathetic, inclusive leadership, have the potential to be both consumptive and productive, thus leading their organisations into a more competitive future.

Unleashing these Next Gen Workers and equipping all employees with strong digital skills is not just a commercial imperative but a societal one. A way to overcome barriers of inequality and regional imbalance while also fostering greater diversity, inclusion and economic growth.

At Microsoft, we strongly believe in creating a brighter, fairer, more prosperous future in which everyone can achieve more. Which is why through our technologies, research and education initiatives such as the recently launched **Get On 2021** campaign, we are committed to helping UK organisations navigate the current challenges and build the workforce the country needs to recover and thrive. For individuals, organisations and the UK as a whole, digital skills will play a vital role in unlocking the way forward.

SIMON LAMBERT,
CHIEF LEARNING OFFICER,
MICROSOFT UK.

1

The UK skills gap

Executive summary

The UK skills gap

Despite accelerated digitalisation in response to COVID-19, a clear digital skills gap persists in UK organisations:

- 69% of UK leaders surveyed believe their organisation currently has a digital skills gap, 70% expect to experience one over the next year.
- More than two in five UK leaders (44%) fear the current lack of digital skills within their organisation will have a fairly negative impact on their success in the next year.

However, business leaders recognise the urgency:

- 32% of C-level executives from large UK firms say that upskilling employees is a top priority in the next six months according to data from LinkedIn.

And employees are eager to learn:

- 59% of employees say developing their digital skills will be important to their employability after COVID-19.

Cost (37%) and lack of skills strategy (28%) are identified as the main barriers to digital skills investment by leaders surveyed.

Business leaders lack faith in both the education system and government to resolve the UK digital skills gap:

- Just 28% of UK leaders believe the education system offers adequate digital training for pupils.
- Only 24% are confident that the UK government is doing enough to tackle the UK's digital skills gap.

The UK skills gap

If there was ever a time to reflect on the importance of digital skills, it is now. Even before COVID-19 struck, digital tools and experiences were becoming ever more woven into the fabric of our world – from the mobile devices in our pockets to the cloud technologies and collaboration tools at the heart of organisations in every sector. Now, as the virus continues to re-write the rules of how we live, learn, work and play, our march towards a new digital normal is accelerating.

Figure 1. UK skills gap

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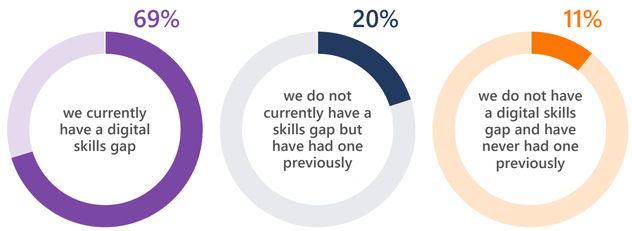
UK leaders on their organisation's digital skills gap



Source: Microsoft – *Unlocking the UK's potential with digital skills*

Circumstances aside, this surge in our collective digital transformation presents an opportunity. When harnessed correctly, technology has the potential to improve people's lives, create jobs, address social inequalities and unlock growth. It can also play a critical role in our ongoing economic recovery. Yet, while the speed with which many organisations have moved to adapt their operating models to a 'remote everything' approach during COVID-19 has been commendable, the real work is just beginning.

To continue the digital journey, organisations must equip their people with the digital skills they need to navigate life, succeed in their career and achieve their potential in a technology-led future. Skills that Tom Ravenscroft, Founder and CEO of non-profit, The Skills Builder Partnership, describes as "*the nuts and bolts of how you interact with digital tools.*"

Divided not conquering

It is here the ground gets shaky. In 2019, The Open University's Bridging the Digital Divide report found that 88% of UK organisations reported a shortage of digital skills and that this was harming their ability to compete internationally. In the same year, a study by global professional services firm, Deloitte, showed that only 25% of the country's executives felt their talent pool had the capabilities required to deliver their digital strategies.

Fast forward to today and the world may be a very different place – but the same challenges remain. Microsoft UK's own research, conducted earlier this year, reveals that over two thirds (69%) of UK leaders surveyed believe their organisation currently has a digital skills gap while nearly three-quarters (70%) expect to experience one over the following year. More than two in five (44%) fear the current lack of digital skills within their organisation will have a fairly negative impact on their success in the next year.

Employees share their concerns. Nearly two-thirds (63%) of those we spoke to during our research did not agree that they have the appropriate digital skills to fulfil new and emerging roles in their industry, while only 38% have the appropriate digital skills to benefit from the digital economy. Little over a third (36%) believe their industry is placing enough investment in digital skills training and education.

> 69% of UK leaders believe their organisation has a digital skills gap

In the words of Peter Cheese, CEO of the Chartered Institute of Personnel and Development (CIPD): "*As an economy, we are dominated by the knowledge and services industries. We have a well educated workforce. We are proud of our educational systems. And yet when it comes to the world of work, we do not actually fare terribly well. We underinvest in our people in the workplace and now need to strengthen alignment between education, employment and lifelong learning.*"

This widening gap between necessity and capability is a cause for concern, first because it stymies innovation and progress, and second, because it risks leaving people unequipped to

thrive in a technology-led future. Only by closing the divide between the digital skills their workforce currently possess and the ones they will inevitably need can UK organisations – and thus the nation's economy as a whole – expect to triumph on the global stage.

Acting up

The good news is that awareness is the first step to action. By acknowledging this gap exists, UK leaders are giving themselves a chance to step up and address it, both by reskilling their existing staff and by investing in the recruitment of a new generation of digitally-savvy workers.

According to recent research from LinkedIn, around a third (32%) of C-level executives from UK firms that employ 1,000+ people and have an annual turnover of £250+ million say that upskilling employees is a top priority in the next six months. Meanwhile, three-quarters (74%) of those who had to place staff on furlough due to COVID-19 have provided resources to help employees learn new capabilities during that time.

Data from LinkedIn's Economic Graph, which tracks global labour market trends around the future, also underlines a growing focus on digital capabilities among UK organisations across industries. In the period between June and August 2020, the top trending skills in Financial Services include data analysis, digital marketing and machine learning. Likewise, in the Construction industry, digital marketing and Computer-Aided Design (CAD), featured in the top 20 trending skills. Such findings highlight a growing recognition among leaders that digital skills can and must be pervasive across their organisation rather than only confined to traditional 'tech jobs' or the IT department.

> "People want to be reskilled. They know they need to learn new things to be relevant."
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> 
>
> CAROL STUBBINGS,
> GLOBAL LEADER,
> TAX AND LEGAL SERVICES
> FOR THE PWC NETWORK.

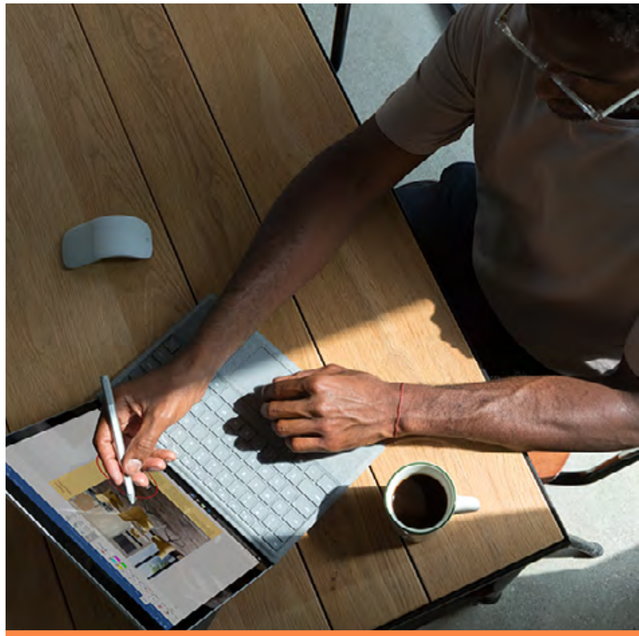
Equally positive is the fact that employees are eager to learn and develop. Three in five (60%) told us they would advise school children today that knowing how to use technology will be fundamental to their future success, while a similar number (59%) say developing their digital skills will be important to their employability after COVID-19. Nearly three-quarters (70%) feel access to digital skills is vital for economic, social and financial inclusion and more than half (54%) agree that digital skills training will present new opportunities for them in their career.

As Carol Stubbings, Global Leader, Tax and Legal Services for the PwC Network, points out: "*Companies that have invested in upskilling have seen better employee satisfaction. Because do not forget, people want to be reskilled. They know they need to learn new things to be relevant.*" Organisations therefore need to step up and satisfy their people's appetite to learn.

All together now

So, what is stopping them? Why, with all these good intentions, does a digital skills gap persist within UK organisations across sectors?

Often, it comes down to cost. When asked to list the top barriers to investing in digital skills for their workforce, more than a third (37%) of leaders surveyed pointed to a lack of budget, making it the most common reason given. This was followed by having a lack of digital skills investment strategy (28%) and a lack of knowledge on which initiatives to focus upon (23%). See Figure 2. Learning blocks.



> "Skills are the currency of digital transformation."
>
> SIMON LAMBERT,
> CHIEF LEARNING OFFICER,
> MICROSOFT UK.

Get On 2021

To help address the UK's digital skills gap, Microsoft has recently launched a five-year campaign to help 1.5 million people build careers in technology. The campaign, which is called Get On 2021 and is being supported by KPMG, Unilever and the Department of Work and Pensions, calls on other UK businesses to help create the technologically-enabled workforce the country needs to recover and thrive in a digital, post-pandemic future.

Read more about **Get On 2021** here

Yet leaders also insist it is not simply down to a lack of funding or knowledge within their own four walls. Our research reveals a distinct lack of faith in both the education system and policymakers when it comes to helping them along the journey. Just 28% of UK leaders believe the education system offers adequate digital training for pupils right now, while even fewer (24%) are confident that the UK government is doing enough to tackle the UK skills gap. Two-thirds (67%) feel there should be greater UK government investment in digital skills training and education.

Clearly, then, there is no single silver bullet that can close the UK's digital skills gap. Rather, it will take a new era of investment, collaboration and commitment from employers, employees and government alike.

Yet, as we continue to recover from one of the most socially and economically challenging periods in modern history, there are some clear steps organisations can take to evolve the capabilities of their workforce, address any structural limitations and set themselves up to succeed in a digital future. As Simon Lambert, Chief Learning Officer for Microsoft UK, explains: "*Skills are the currency of digital transformation.*" Now is the time to spend them wisely.

Figure 2. Learning blocks

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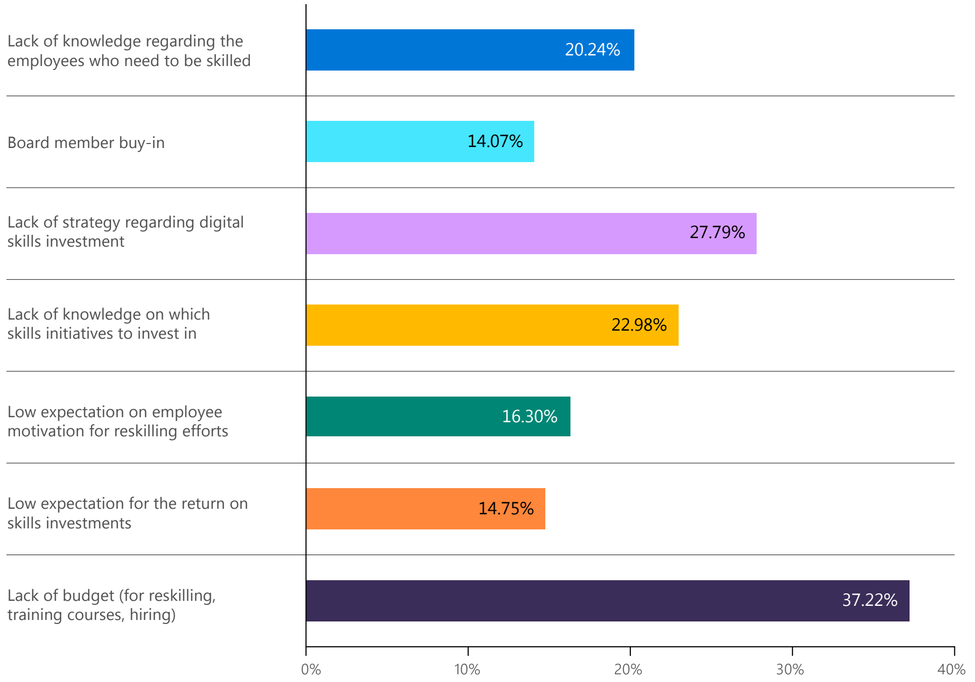
UK leaders' top barriers to investing in digital skills



Source: Microsoft – *Unlocking the UK's potential with digital skills*

The bottom line opportunity

2

Executive summary

The bottom line opportunity

Digital skills have a clear and valuable impact on bottom line performance:

- Digital skills hold the key to 2.4% minimum of a company's bottom line. For an organisation with an annual profit of £1 billion, this equates to £24 million every year.

UK business leaders realise how vital this is right now:

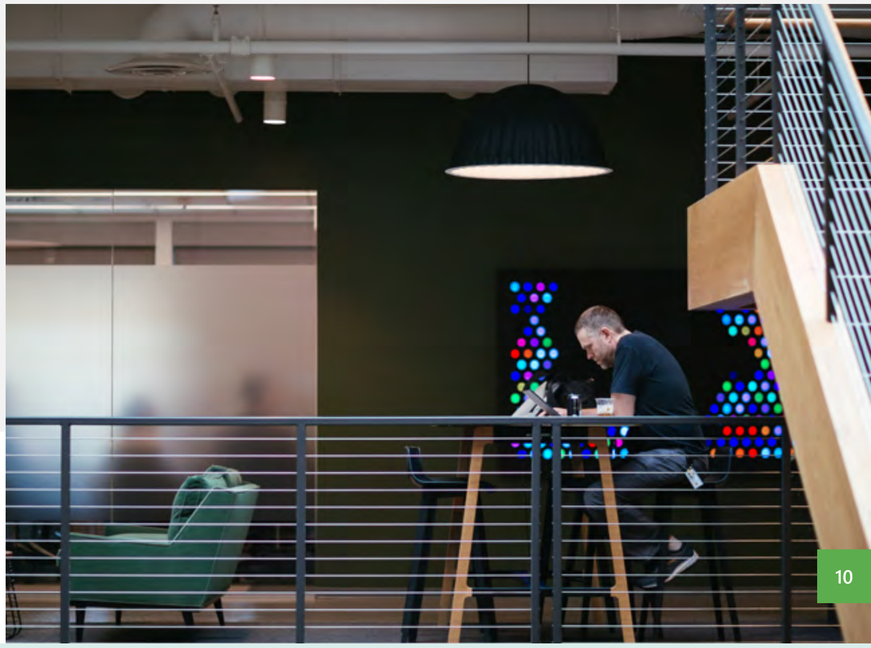
- 80% believe investment in digital skills capabilities will be important to the country's economic recovery following COVID-19.
- 78% see having a large digital skills talent pool as essential to driving UK competitiveness on the global stage.

Six key skill areas comprise an individual's overall digital capability:

- These are: information, data and media literacy, alongside digital creation, research, problem solving and innovation abilities.

Productive digital skills are twice as valuable as consumptive digital skills:

- Productive digital skills, which allow someone to create new digital tools and systems for others to adopt, deliver nearly double the impact on business performance as consumptive skills, which enable people to use digital solutions that have been built by others.



The bottom line opportunity

One of the things we have found in our recent Leading in a Digital Age report," says Jane Dickinson, Digital Skills Lead at The Open University, *"is that a commitment to digital skills at a leadership level creates a positive impact on the performance of the organisation and the engagement of employees, who are given vital new skills to drive future success."*

Dickinson's words should grab the attention of UK leaders. At a time of near-unprecedented disruption, they point to a possible path to recovery and growth. One that, unlike many of the challenges thrown up during the last 12 months, is ostensibly under their control.

Better still, our research serves to underline this positive potential. Based on a detailed analysis of organisational performance, we found that digital skills hold the key to 2.4% minimum of a firm's bottom line performance. For a company with an annual profit of £1 billion, this equates to £24 million every year. **Rollover to find out** how we arrived at this figure.

In an economic climate defined by the challenges of COVID-19, Brexit and accelerated digitalisation – one that has seen 54% of UK organisations report a net decrease in revenue this year, according to **recent research from Microsoft** – such an impact should not be underestimated. Coincidentally, the UK Government **has committed** to increase the share of GDP spent on research and development (R&D) by public and private sources to 2.4% by 2027. In our recent report, ***Creating a blueprint for***

UK competitiveness, we found that R&D spend and skills development both impact the competitiveness potential of an organisation. In fact, this effect is made even stronger when investment in both is combined, illustrating the synergy between strong digital skills and impact from R&D. This is a process of leveraging knowledge and new ideas to drive innovation and deliver a stronger economy.

Organisations that commit to building a more digitally-enabled workforce can look forward to a brighter, more competitive future.

Digital definitions

This fact is not lost on UK leaders. Four in five (80%) believe investment in digital skills will be important to the country's economic recovery following COVID-19, while a similar number (78%) see having a large digital skills talent pool as essential to driving UK competitiveness on the global stage. Yet vital, of course, is understanding exactly what these new digital capabilities look like – and how to cultivate them.

To help answer that question, we centred our research around the Building Digital Capability model developed by Jisc, a not-for-profit organisation that provides digital solutions for UK education and research institutions. It describes six skill areas that together comprise an individual's overall digital capability. *They are:*

1. **Information literacy** — the ability to find, evaluate, manage, curate, organise and share digital information.

2. **Data literacy** — the ability to collate, manage, access and use digital data in spreadsheets, databases and other formats, and to interpret data by running queries, data analyses and reports. A skillset necessary to progress into areas like cloud computing and AI.

3. **Media literacy** — the ability to critically receive and respond to messages in a range of media and to curate, re-edit and repurpose media, giving due recognition to originators.

4. **Digital creation** — the capacity to design and/or create new digital materials such as apps, code, interfaces and web pages alongside an understanding of the digital production process and the basics of editing and coding.

5. **Digital research and problem solving** — the ability to use digital evidence to solve problems and answer questions, collect and collate new evidence, evaluate the quality and value of evidence, and to share evidence and findings using digital methods.

6. **Digital innovation** — the ability to use digital technologies in developing new ideas, projects and opportunities.

Crucially, we then ranked these skills according to their impact on overall business performance. And top of the list: data literacy. See Figure 3. Skill levels.

Figure 3. Skill levels

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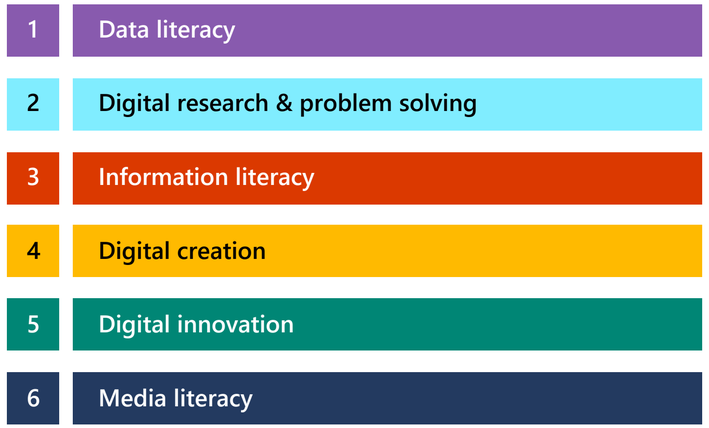
How Jisc's six types of digital skills rank for business impact



Source: Microsoft – *Unlocking the UK's potential with digital skills*

The reason for this is relatively straightforward: focusing on data literacy skills opens the door to greater digital development among employees, helping them build competencies in areas like data governance and ethics, social science and creative innovation. This, in turn, makes them more confident and capable when using data to make better decisions. Or, as Carol Stubbings, Global Leader, Tax and Legal Services for the PwC Network, puts it: "*to see through the blizzard of data and drive relevant, meaningful insights for business change.*"

CASE STUDY

University of Lincoln

Derek Foster, Professor of Computer Science at University of Lincoln, explains why data literacy must come first for a new generation of problem solvers.

Read the case study here | View video

"Productive digital skills deliver nearly double the impact on business performance of consumptive digital skills."

Create vs. use

However, now more than ever, simply knowing the different types of digital skills is not enough; organisations have to go deeper. At the crux of our analysis is the notion that each of these six skill areas can – and must – be split further in order to unlock their true value.

Specifically, they need to be separated into two distinct categories: **productive skills** that allow someone to create digital tools and systems that colleagues adopt; and **consumptive skills** that let them use digital solutions that others have built. In simple terms, it is the difference between create and use. See Productive and Consumptive Digital Skills Box Outs.

Unquestionably, both are important on any journey of digital transformation – both to organisations themselves and to workers hoping to improve their employability in a technology-led world.

Yet, crucially, we found that productive skills deliver nearly double the impact on business performance of consumptive ones. Understanding this distinction and building their learning and development programmes to match can therefore help organisations upskill employees in the areas that will deliver the greatest value for their business and, ultimately, boost their competitiveness at home and abroad.

Productive digital skills

CREATE

- Training and developing AI and algorithms for machine learning programs in addition to knowing how to apply them to overall business objectives
- Creating digital materials using coding or digital editing techniques
- Developing and/or working with mixed reality interfaces, such as wearables and haptic touch technology
- Analysing and understanding collective data and databases
- Database development and maintenance
- Computer science modelling
- Hardware, robotics and mechanical engineering
- Security and risk management

Consumptive digital skills

USE

- Proficiently using, accessing and interpreting business software tools and platforms that organise and share electronic information, such as Office 365
- Evaluating, understanding and employing systems to store, query and retrieve online information
- Knowing best practices for evaluating the safety and quality of online communications
- Using digital information effectively to determine its credibility and solve problems
- Adopting new technologies and innovations with ease
- The competent use of collaboration software such as Microsoft Teams

Yet, we also discovered that 81% of UK leaders believe consumptive capabilities are important compared to just 69% who think the same about productive ones. If the UK's digital skills gap is to close, this trend must be reversed – and quickly.

As for how that future of work looks, no-one can yet predict what the long-term effects of COVID-19 and Brexit will be. But amidst the uncertainty, one thing is beyond doubt: it will require a new generation of worker.

3

Rise of the Next Gen Worker

Executive summary

Rise of the Next Gen Worker

Few employees are ready to deploy productive digital skills:

- Just 17% of employees currently feel able to create digital tools and systems for other workers to adopt.

Significant productive skills inequality remains between sectors and regions:

- Financial services and London see the greatest prevalence of productive skills while retail and Wales report the lowest.

Gender imbalances persist here too:

- Productive skills are more common in men than women (17% vs. 13%), due, in part, to only 19% of females currently pursuing higher STEM education.

But the good news is organisations have the opportunity to harness an untapped resource:

- 73% of UK workers are Next Gen Workers: people who possess a combination of high consumptive skills as well as emerging productive skills.

Rise of the Next Gen Worker

"The divide between regions has never been bigger. More wealth sits in London and the South East right now and that acts as a magnet for skills. This leaves a significant vacuum of both skills and opportunities in many other parts of the country."

CAROL STUBBINGS,
GLOBAL LEADER,
TAX AND LEGAL SERVICES
FOR THE PWC NETWORK.

So who are these new workers? The people who can fuel their organisations' recovery today and drive them forward to even greater heights tomorrow. Before answering that question, we must consider how the UK is faring in equipping employees with the productive skills they need to thrive in the digital age.

As you might expect given the digital skills gap, the answer to that question is a resounding 'could do better'. Overall, just 17% of employees currently feel able to create digital tools and systems for other colleagues to adopt – a capability that our research has shown delivers twice the overall business impact of simply being able to use them.

As we see in Figure 4, there is also considerable variation between sectors and regions when it comes to the prevalence of productive skills, with financial services and London leading the way in their respective categories thanks to scores of 18%. Meanwhile, at the other end of the scale, are retail (12%) and Wales (12%). In every case, the number of people exhibiting consumptive skills far outstrips those reporting productive capabilities.

Figure 4. Divided nation?

The prevalence of productive skills by UK region and sector

Percentage of employees with overall productive and consumptive skills by region:

Region	Employees surveyed	Productive skills	Consumptive skills
North East	82	16%	47%
North West	253	16%	53%
Yorkshire	210	14%	51%
East Midlands	160	16%	48%
West Midlands	149	15%	48%
East of England	124	13%	49%
London	230	18%	54%
South East	307	16%	49%
South West	187	15%	52%
Wales	85	12%	49%
Scotland	228	14%	33%

Percentage of employees with overall productive and consumptive skills by sector:

Sector	Productive skills	Consumptive skills
Financial Services	18%	58%
Health & Social Care	16%	51%
Manufacturing	17%	53%
Retail/Wholesale	12%	39%
Government	16%	57%

Source: Microsoft – *Unlocking the UK's potential with digital skills*

73% of UK employees are Next Gen Workers who have a combination of high consumptive skills and emerging productive skills

Productive skills also tend to be more frequent in men than women (17% vs. 13%). This is, in part, due to the fact that only 19% of females currently pursue higher STEM education, thereby creating a smaller talent pool. Without active interventions to encourage more females into STEM careers – as well as BAME people and those from financially disadvantaged backgrounds – this discrepancy is likely to get worse, not better.

"*There is a real digital skills challenge here,*" says Susannah Odell, Senior Policy Advisor at the CBI. "*A challenge of access, motivation and information. We have to ensure we are supporting everyone to upskill on digital, including those at the more vulnerable end of the labour market.*"

Conflicting voices

Addressing the gender, regional and socio-economic disparities are, of course, key – both economically and ethically. But it is not the only issue at hand. Worryingly, there appears to be significant disagreement between leadership and staff when it comes to the predominance of productive digital skills in their organisation.

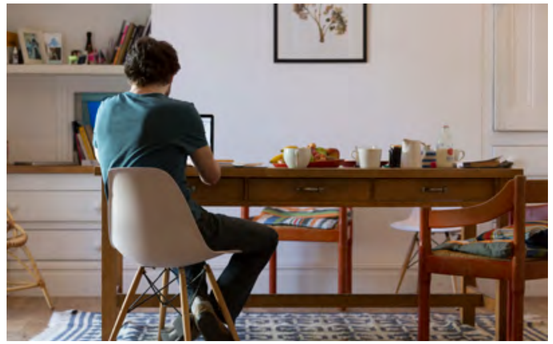
As we saw, only 17% of employees feel capable of creating new digital tools and systems yet 30% of leaders believe these capabilities exist in their workforce. This trend is played out across all six of the **Jisc skill areas**, with the greatest gap in data literacy (30% leaders vs. 10% employees).

So, while it is encouraging that 41% of UK leaders surveyed see reskilling the existing workforce as the most effective action to close the digital skills gap, any misperception of how pervasively and urgently those training programmes are required will severely limit the speed at which progress is made – not to mention the ultimate impact on the organisation's performance and bottom line.

Whether it is through greater communication between organisational levels or by creating a dynamic culture in which employees are empowered to experiment, fail and learn on the job, alignment between leadership and staff on the way to boost productive skills is therefore imperative.

Enter the Next Gen Worker

It is far from all doom and gloom, though. Yes, there is much work to do to bake in productive skills at an individual, organisational and societal level. But, to return to our original question, many of the experts we spoke to pointed to a very human solution to the UK's digital challenges.



Enter a new generation of workers who, enabled by low code and no code technology, are armed with both high consumptive skills and burgeoning productive capabilities. Previously known as the power users, these Next Gen Workers are now becoming creators. And they are just as comfortable working from their own kitchen table as they are from a desk in the office.

As Vinous Ali, former Associate Director of Policy for techUK notes: "*There has been a surge in the number of job offers that do not have a location attached. Whilst that could be a positive development, it makes it more important that the right skills are available broadly across communities so that they remain competitive.*"

Even more positive is the fact that the existence of the Next Gen Worker is by no means an expert's hunch; it is borne out in the data. During our research, we examined the proportion of UK workers who exhibit the necessary combination of high consumptive skills and emerging productive ones. And we found that three-quarters (73%) of respondents fit the bill.

This is a great cause for optimism – and a clear blueprint for leaders when developing their talent planning and development strategies. By focusing their energies on Next Gen Workers within the workforce, they can ensure their productive skills become fully integrated across the organisation's ecosystem rather than confined to traditional silos. This, in turn, will allow them to act as the driving force behind greater cross-functional collaboration, agility and innovation. Or as Glen Robinson, National Technology Officer at Microsoft UK, puts it: "*to become the conductors of the orchestra, creating platforms that connect talent around the world to contribute big thinking and big programmes of work.*"

Figure 5. Rise of the Next Gen Worker

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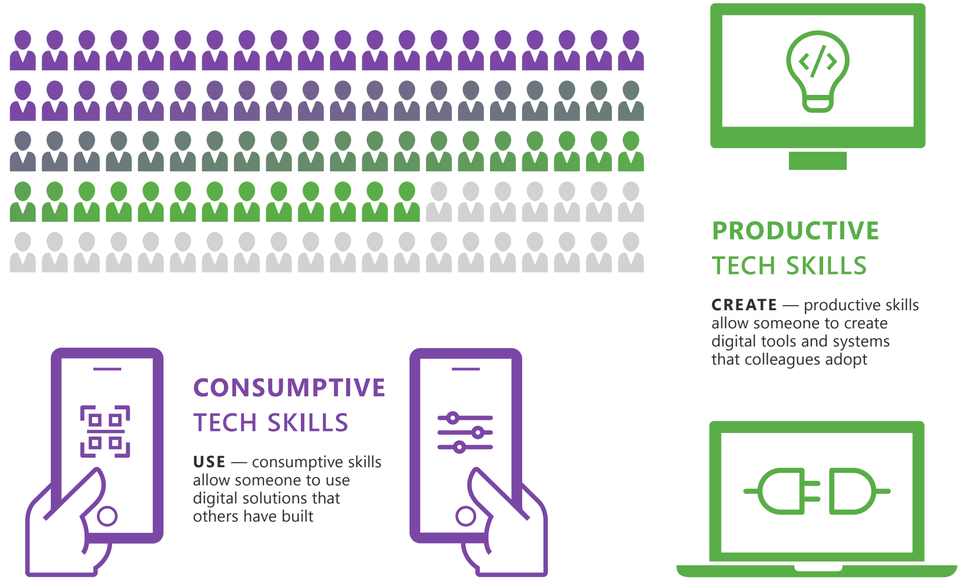
73% of UK workers have both high consumptive – and emerging productive – tech skills



Source: Microsoft – *Unlocking the UK's potential with digital skills*

From the top

And therein lies the rub. Unleashing the undoubted potential of this new generation of workers is as much a task of leadership as it for the employees themselves. There is a pressing need for leaders to create the right conditions for the Next Gen Worker to thrive.

As we explored in detail during our recent report, **Creating a blueprint for UK competitiveness**, a large part of this comes down to a responsive and dynamic approach from those at the top – something that is becoming ever more important as job roles and employee expectations around the future of work are reshaped by rapid digitalisation in light of COVID-19.

We found that leaders in organisations that provide digital training exhibit greater empathy, empowering their people to collaborate and solve problems in teams. They are also more adept at building resilience, making fast and decisive decisions in the face of disruption. And they tend to do better at earning trust, carefully managing their organisation's reputation and security risks.

CASE STUDY

Cumbria Police

Chief Superintendent Jonathan Blackwell, describes how Cumbria Police is integrating digital skills across the force's entire operations.

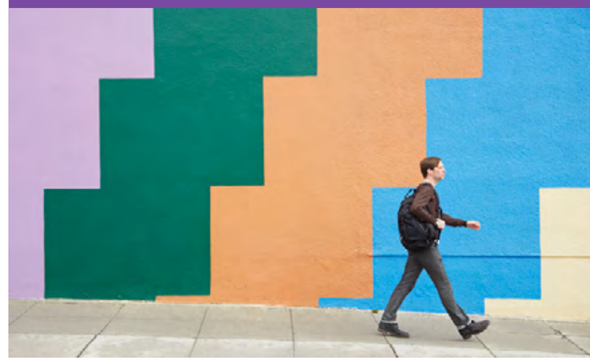
Read the case study here

As Sean Farrington, Senior Vice President for EMEA at workforce development company, Pluralsight, explains: "*Organisations that do really well with digital transformation at scale have engagement from senior leadership. The most profound level of permission you can get is when somebody at the top says: 'I am drawing a line between the success of our business in terms of how we grow our revenues and the importance of you as an employee spending time improving your skills.'*"

In other words, the path to closing the UK's digital skills gap is both operational and cultural. It is both economic and social. And it is both individual and collective. In the final section of this report, we will lay out exactly how organisations tread it.

"The most profound level of permission you can get is when somebody at the top says: 'I am drawing a line between the success of our business and the importance of you as an employee spending time improving your skills.'"

SEAN FARRINGTON,
SENIOR VICE PRESIDENT,
EMEA, PLURALSIGHT.



4

Act now

Executive summary

Act now

Digital upskilling is a social responsibility as well as a commercial edge:

- Democratising tech, helping workers increase their own employability and opening STEM-based careers to underrepresented groups can help build a better, fairer society.

Integrate digital:

- Leaders must evaluate their technology stack and talent pool, then create an integrated, cross-functional digital team that can enhance performance throughout the organisation.

Unleash the Next Gen Workers:

- They must also evolve their learning and development programmes to offer more advanced digital training for Next Gen Workers while encouraging teams to think digitally all the time.

Empower people:

- They need to support employees in developing softer skills while fostering a dynamic, diverse and inclusive approach to talent management and recruitment.

The way forward

"It is completely inappropriate to worry about digital upskilling and only think about it as a source of revenue. It is also a social problem we have to work on."

BLAIR SHEPPARD,
GLOBAL LEADER FOR STRATEGY AND LEADERSHIP FOR THE PWC NETWORK.

As we have seen, there is an increasingly urgent need to close the gap between the digital skills most UK workforces currently possess and the ones they will require in the future. As organisations seek to recover and grow amidst ongoing economic challenges and uncertainty, they must find ways to upskill employees to achieve more in a post-COVID, post-Brexit world.

In particular, their ability to remain competitive – both domestically and internationally – relies upon the success with which they can unlock the productive skills that enable people to not only use digital tools and systems but to create them. And that means harnessing the exciting potential of a Next Gen Worker with the capabilities and motivation to do both.

The performance benefits of doing so are clear; digital skills hold the key to 2.4% of a firm's profits minimum. Yet the path to progress must not be driven solely by the bottom line. As Blair Sheppard, Global Leader for Strategy and Leadership at the PwC Network, says: "*It is completely inappropriate to worry about digital upskilling and only think about it as a source of revenue. It is also a social problem we have to work on.*"

Indeed, by democratising technologies, by supporting workers in increasing their own employability and by doing more to open the door to STEM-based careers to women, the BAME community and previously overlooked socioeconomic groups, organisations can lead the way into a more profitable and competitive future and a better, fairer society too.

CASE STUDY

Lloyds Banking Group

Jemma Waters, Head of Responsible Transformation, and Peter Davies, Engineering, Capability and Culture, discuss how Lloyds Banking Group has created a culture of digital learning for employees – no matter what their background or job role.

Read the case study here

CASE STUDY

GSK

GSK discusses how the global healthcare company is creating a digitally and technically skilled workforce in the pursuit of technology-assisted scientific breakthroughs, and driving appreciation of the value of upskilling throughout the organisation.

Read the case study here

Time for action

But how? What steps must leaders across sectors take to address the skills disparity and prepare themselves, their workers and the UK economy as a whole to lead in the digital age?

Here are three areas to focus on – starting now:

Step 1. Integrate digital

At the moment, most organisations are using productive skills far less than consumptive ones. However, as a proportion of an entire workday, they are employing both relatively little. This means there is a lot of capacity to introduce additional digital capabilities to the workforce – whether through recruitment and upskilling initiatives or via change programmes that place technology at the heart of the organisation's structure and operating practices.

Act now

- Evaluate your technology stack and talent pool to identify areas where you can boost consumptive and productive skills. Discover hundreds of modules and learning paths at Microsoft Learn.
- Focus on developing employees' data literacy, problem solving and information literacy first, then move onto more advanced capabilities, such as digital innovation and edge computing.
- Create an integrated, cross-functional digital team with responsibility for driving the effective use of digital skills and solutions throughout the organisation.

EXPERT VIEW

"You can't just have a management structure that is embracing digital transformation. It has to be enabled, embraced, supported and recognised from top to bottom. The responsibility falls on everybody."

DANNY BIRKS,
DIRECTOR,
PEOPLE SOURCE.

Step 2. Unleash the Next Gen Workers

Not everyone is a superstar coder or programmer but, in most modern UK workforces, the majority of employees now fit the profile of the Next Gen Worker, capable of combining a high level of consumptive skills with emerging productive ones. If these capabilities can be built upon and harnessed, the potential benefits for organisations and society as a whole will be significant.

As Microsoft UK CEO, Clare Barclay, explained during Microsoft Envision UK: "*The shape of the UK economy and its workforce is changing; a change only accelerated by the rapid move to digital working in the wake of the disruption we have seen this year. With hundreds of thousands of people losing their jobs and some traditional sectors heavily impacted, we urgently need to invest in UK technical capability to help realise our competitive potential.*"

Act now

- Evolve your learning and development scheme beyond the basics of five or ten years ago. Focus on a more advanced digital training befitting of a more digitally advanced workforce. This includes considering non-traditional learning opportunities for your current and future workforce, such as digital apprenticeships.
- Identify and encourage the Next Gen Workers in your organisation by creating opportunities for employees to hack problems, encourage others to develop their skills, participate in innovation initiatives and be rewarded for going above and beyond in the development of new digital solutions.
- Think digitally all the time. Constantly ask yourself: how could digital acceleration positively impact our business strategy, market and ability to meet the needs of our stakeholders.

EXPERT VIEW

"Digital skills training can sometimes be too generic and has not moved fast enough to keep pace with industry changes. This means there is a mismatch between what people have been trained in versus what the industry requires. It is critical that skills programmes become more agile in adapting to industry needs, which will continue to evolve."

MICHAEL HOULIHAN,
CEO, GENERATION UK&I.

Step 3. Empower people

Our research shows organisations that offer digital skills training create a more empathetic and inclusive environment for employees than those that do not. When you empower people with digital skills they become interpersonally stronger too, leading to greater critical thinking, collaboration and decision-making. This improves performance and helps them build their own employability in a digital world.

Act now

- Re-think the way your organisation approaches talent acquisition now and over the next five to 10 years. This includes identifying skills gaps, then looking outside traditional talent pools to fill them such as apprenticeships and inclusive recruitment programmes. Watch a panel of industry leaders discuss how to think differently about talent in an on-demand session from Microsoft Envision here.
- Offer training that goes beyond technical capabilities to help workers develop professional skills such as creativity, collaboration, emotional intelligence and adaptability, which all rank in the top five of LinkedIn's most in demand soft skills for 2020.
- Take action to foster a dynamic culture that embraces difference and encourages your people to experiment, fail and innovate. In addition, support workers in improving key social-emotional skills, such as relationship building and self-awareness to support learning and wellbeing.

EXPERT VIEW

"More people need to develop skill sets around technology in order to make better decisions. But they also need those critical people skills as well. So, we are always looking at how to develop our students' mental agility, their interpersonal skills and their commercial knowledge. They also need to comprehend the importance and impact of global and social issues on work and skills. We are also pushing them on creativity and imagination to understand these challenges."

DR NAEEMA PASHA,
DIRECTOR OF CAREERS & PROFESSIONAL DEVELOPMENT, HENLEY BUSINESS SCHOOL

Skilling up

SIMON LAMBERT,
CHIEF LEARNING OFFICER,
MICROSOFT UK.

"At a time when digital innovation is constant, relentless and accelerating, we see it as our responsibility to help people acquire the right skills to succeed – be that for their own benefit, to boost the performance of the organisations they work for or to future-proof the UK's competitiveness on the global stage.

Through our digital skills programmes, we help customers build their people's confidence and competence in a variety of software, cloud and AI technologies, ultimately helping them to achieve more."

Click here

to learn more about Microsoft's digital skills training initiatives for organisations and individuals

Case studies

University of Lincoln

Cumbria Police

Lloyds Banking Group

GSK

DEREK FOSTER,
PROFESSOR OF COMPUTER SCIENCE,
UNIVERSITY OF LINCOLN.

CASE STUDY

University of Lincoln

Derek Foster, Professor of Computer Science at University of Lincoln, explains why data literacy must come first for a new generation of problem solvers.

UNIVERSITY OF LINCOLN

How are you improving digital skills and data literacy at Lincoln?

We rolled out the Microsoft Technology Associate (MTA) certifications about three years ago and connected them to several of our degree modules and programmes – mainly around coding. More recently, we added the new Microsoft Fundamentals certifications that includes topics such as AI, Cloud and Data Platforms. We incorporated Java and Python into our academic courses too.

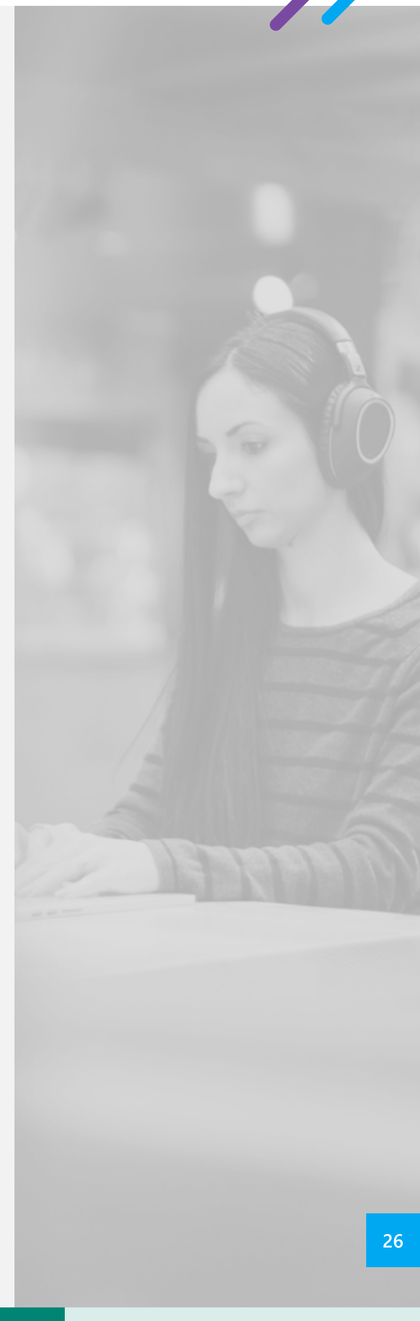
These have a strong focus on data literacy. We teach students problem-solving, understanding what the problem domain is, and what the customers of their future clients are looking for – which are now data driven processes. Data literacy is vital because before students can begin to understand a problem, they must understand what data is out there, which they can effectively analyse, and then begin to design a solution. Giving our students access to a broad library of digital tools through Microsoft 365 is a key part of this learning process.

Are any areas particularly challenging for students?

We find it takes longer to successfully ingrain the fundamentals of cloud technology for students, for them to understand how to develop services that run on the cloud, and all the steps you have to take.

Keeping up with the accelerating pace of change in the professional, business world is a challenge too. The underlying principles of Computer Science in the areas of artificial intelligence and machine learning are similar to what they were 10 years ago, however the tooling has changed significantly. Over the last five years, there has been a big, rapid shift where a lot of these large computer intensive services are running on the cloud or being developed for the cloud as default.

We have got to prioritise graduates' cloud skills if we are to close this gap.



CHIEF SUPERINTENDENT
JONATHAN BLACKWELL,
CUMBRIA CONSTABULARY

CASE STUDY

Cumbria Police

Chief Superintendent Jonathan Blackwell describes how Cumbria Police is integrating digital skills across the force's entire operations.

How important are skills to your process of digital transformation?

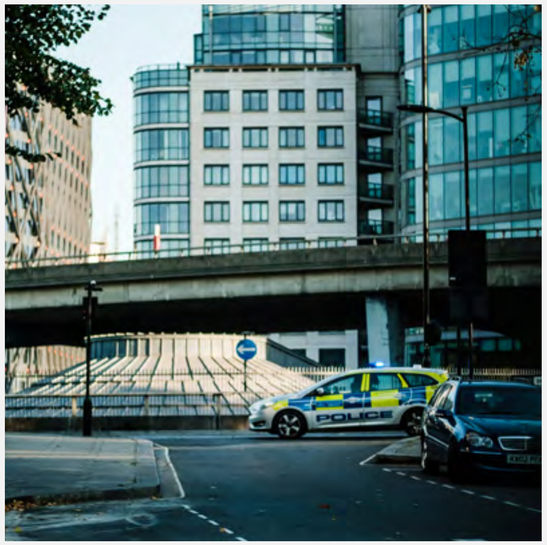
Digital technology is a massive part of every element of policing in 2020 and beyond – both operationally and organisationally. Making it work on the front lines and enabling real digital transformation comes down to people's behaviour and skills as well as the organisation's culture. While technology is great, our most important asset in policing is our people.

We make sure our people are not only competent but have the confidence in their abilities to use the tools to their full potential. For example, you might have been on a digital skills course and been shown how to use the tech, so you are competent. But when it is two o'clock in the morning and no-one is looking over your shoulder, offering guidance, you need confidence too.

It is vital for the police to be able to use technology in service of the public. So, you must listen properly to people's feedback and translate the training they receive into what it really means and how it applies practically across the whole organisation.

What role does leadership play when it comes to digital skills?

Top quality digital leadership is paramount. We work very hard to enable digital leaders across the organisation, from first- or second-line supervisors right through to the Chief Constable.



Everyone needs to be brought in so they can talk the language, look for opportunities and find ways to drive transformation in how they work across their own departments and how they work. This is how you achieve cultural change. In fact, we are the first in the country to create a bespoke digital leadership programme: a joint task force initiative that is happening across Cumbria and Durham.

JEMMA WATERS,
HEAD OF RESPONSIBLE TRANSFORMATION.

PETER DAVIES,
ENGINEERING, CAPABILITY AND CULTURE.

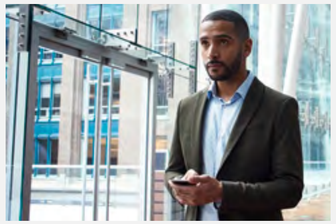
CASE STUDY

Lloyds Banking Group

Jemma Waters, Head of Responsible Transformation, and Peter Davies, Engineering, Capability and Culture, discuss how Lloyds Banking Group has created a culture of digital learning for employees – no matter what their background or job role.

What is it that makes investing in digital skills a strategic imperative for you?

As a UK-focused bank, our purpose and vision is to Help Britain Prosper – supporting people and businesses across the country to lead better lives and livelihoods. Digital skills are vital for this. Our Business Digital Index and Consumer Digital Index evidence that digital capability and confidence lead to greater access to price savings and money-saving switching, the ability to manage money anywhere at anytime, the ability to access health information and stay connected to loved ones.



At a UK-level, digital skills are vital for ensuring that our workforces and organisations are competitive in an increasingly technology-powered society and digital economy. As a large employer, supporting colleagues with digital confidence and capability helps to ensure we are delivering the most effective and engaging products and service. Working to provide customers and communities with digital skills is absolutely crucial for enabling an inclusive and sustainable society where people have choices and opportunity. This why LBG have helped almost 1.8m individuals, charities and businesses to get online over the last three years, and have created the Lloyds Banking Academy as a one-stop point for face-to-face, on-demand and interactive webinar support.

How do you approach digital skills training?

Traditionally, it would have been face to face, now we are providing blended learning options where people have office hours sessions or meet with a trainer for an hour a week. We also use digital platforms such as LinkedIn Learning after which staff can come back to us and ask questions.

We focus more on the outcome people want to achieve from the training, rather than the skills themselves. Because the challenges people face are digitally-related, the platforms and channels used to deliver training are digital, too. Everyone is encouraged to take ownership of their learning and development plan, and personalise it based on what they want to achieve.

What are some of the results you are most proud of?

Dr Arinola Araba is an entrepreneur and inventor who attended one of our Lloyds Bank Academy sessions, which is an online interactive webinar run by our digital champions who want to volunteer in the community. Dr Araba runs an organisation called bMoneywize, which focuses on improving financial literacy for young people. It has been great seeing how the training has helped her and her business, so she can help more people too.

CASE STUDY

GSK

GSK, discusses how the global healthcare company is creating a digitally and technically skilled workforce in the pursuit of technology-assisted scientific breakthroughs, and driving appreciation of the value of upskilling throughout the organisation.

How are you focusing on skills to drive digital transformation, and innovation more broadly?

Our goal is to develop a highly-skilled tech workforce, deeply grounded in technical disciplines, with an agile mindset and leadership acumen, capable of driving solutions that directly enable business value.

Within Research and Development (R&D) specifically, GSK is at a pivotal point in its history, as we are embedding technology into our ways of working and culture. We have created a Science × Technology × Culture strategy within R&D because the greatest breakthroughs will come from technology-assisted scientific discovery.

We are now helping employees further develop fundamental capabilities like data literacy, with the proficiency needed to drive value from the democratised tools made available to them, through our global data platforms.

Making smarter data-driven decisions cannot be achieved by technology alone.

What digital skills challenges are you facing, and how are you overcoming them?

It is hard to have full understanding at every level of the organisation that upskilling at pace is critical to future proofing the business and individual careers. We addressed this by ensuring 100% of staff have personalised development plans covering their upskilling area of focus. This drives engagement at every level of the organisation.

One major challenge is developing a clear view of the target state of the workforce. We approached this carrying out an initial high-level review to identify priority skills gaps within senior leadership. Work is still underway here, to fully align re-skilling plans with our planned future state organisation and operating model plans, but it is going well.

Appendix

Methodology

Digital skills modelling — The research used a mixed-method approach to develop a comprehensive model for measuring digital skills, for organisations and workforces using an adapted KSAM (knowledge, skills, abilities, mindset) framework. The research team sought to identify the ideal 'recipe' for digital skills given COVID-19 and the need for economic recovery.

Sampling strategy — This study used a self-reported stratified sampling strategy that focused on a) leaders and b) workers in large organisations. The worker sample comprised 2,044 respondents approximately evenly balanced for gender, with an oversampling of respondents in Financial Services, Healthcare, Retail and Manufacturing. All figures, unless otherwise stated, are from YouGov PLC and have been analysed by the independent research team. Fieldwork was undertaken between 13th–20th August 2020. The survey was carried out online.

Leader survey — The leader survey was similarly composed and had 554 respondents, all from large organisations (+250). The core survey items related to capability with productive and consumptive forms of digital skills, across six domains, as identified in a theoretical model informed by the Jisc digital skills framework. All figures, unless otherwise stated, are from YouGov PLC and have been analysed by the independent research team. Fieldwork was undertaken between 14th–27th August 2020. The survey was carried out online.

Skills & performance indexes — These items were aggregated to form two skill indexes, productive and consumptive. The research team related these to a performance index that queried the organisation's financial performance with a multiple regression model. All indexes had very high reliability. The research team then reported descriptive statistics on the six skill items that comprise each skill area. These analyses included reports on items that measured perceptions of the importance of these skills to business success and the difficulty of learning. These indexes and their contributing items were also analysed across demographic splits and major industry areas.

Literature review — An in-depth review of academic, industry and media knowledge and data sources were utilised to inform initial thinking, expand the hypothesis, and develop practical recommendations. Particularly for supporting UK organisations in building their digital skills, with a focus on both the potential for economic and social impact of strategic decision-making on digital skills and culture. As well as providing training recommendations for leaders seeking to upskill and reskill workforces.

3rd party expertise — A variety of academics, professionals and company case studies were interviewed around both the research model and the findings of this project. Quotes were analysed and used as evidence to support the hypothesis.

Acknowledgements

The research included in this report was conducted by Microsoft in partnership with Dr Chris Brauer, Director of Innovation, Goldsmiths, University of London and Smoothmedia in summer and autumn 2020. The core team of independent psychologists, data scientists and social scientists included Research Director Dr Jennifer Barth, and Researcher Areej Ahsan. They used a mixed method approach to assess and understand the state of digital skills in the UK.

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- Michael Houlihan, CEO, Generation UK&I
- Sean Farrington, SVP EMEA, Pluralsight
- Peter Cheese, CEO, CIPD
- Blair Sheppard, Global Leader for Strategy and Leadership for the PwC Network
- Carol Stubbings, Global Leader Tax & Legal Services for the PwC Network
- Tom Fogden, COO & Dean, Ada National College for Digital Skills
- Jane Dickinson, Digital Skills Lead, The Open University
- Vinous Ali, former Associate Director of Policy, techUK
- Edward Richardson, Sr Policy Advisor, CBI
- Susannah Odell, Sr Policy Advisor, CBI
- Dr. Naeema Pasha, Director of Careers & Professional Development and Founder of WOW (World of Work), Henley Business School
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- Tom Ravenscroft, Founder & CEO, The Skills Builder Partnership
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- Chief Superintendent Jonathan Blackwell, Cumbria Police
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- Simon Lambert, Chief Learning Officer, Microsoft UK
- Clare Barclay, CEO, Microsoft UK
- Hugh Milward, UK CELA Director, Microsoft UK
- Chris Perkins, GM Public Sector, Microsoft UK
- Nick Hedderman, Modern Work and Security Business Group Lead, Microsoft UK

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