

UK tech hiring in transition?

The current state of play and where future opportunities might lie



 **NFER**
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Executive Summary

Introduction to the research

This report is one of the final outputs from a research programme, funded by The Hg Foundation, into trends in UK tech hiring, educational pathways into tech, and diversity in the tech sector. This research is intended to inform The Hg Foundation's work to remove barriers to education and skills in technology, so that people from all backgrounds can access opportunities in the digital economy. It was undertaken by the National Foundation for Educational Research (NFER) in 2025.

Previously, we reported that there are half as many adverts for jobs in tech occupations than there were before the pandemic (Bocock, Scott and Tang, 2025). Adverts for some key jobs - particularly software developers and programmers - are down by two-thirds compared to 2022. This raised important questions about the causes and consequences of these trends in tech hiring for people working in tech roles and those seeking tech employment. In addition, it raised questions about how these trends may evolve and where future tech opportunities may lie. This report presents the findings of primary research with tech employers, drawing on the experiences and perspectives of hiring managers and senior leaders in almost 100 organisations. The research included focus groups and interviews, a workshop, and a small-scale survey. Key messages are highlighted below.

Past and current trends in tech hiring

Most consultees taking part in the focus groups and interviews reported a significant decline in their recruitment for tech roles in the UK since 2022, with entry-level roles particularly impacted. This is in line with findings from our analysis of Adzuna job adverts. By contrast, around a half of the respondents to our survey indicated that their UK tech hiring had increased. This is likely to be a consequence of sampling bias – our survey sample was skewed towards medium and large organisations with a high turnover whose UK tech hiring had grown over the past three years, whereas the UK tech industry is overwhelmingly composed of small businesses. Nevertheless, it does highlight that not all employers recruiting for tech roles are following the general trend.

Roles reported as declining included manual quality assurance (QA) roles and web developers, whilst continued demand was reported for machine learning and AI-related developer/engineering roles, DevOps and QA engineers, data and business analysts and hybrid business analyst and programme manager roles. Consultees also reported a growth in hybrid roles combining tech skills with other non-tech skills, for example in customer liaison or programme management.

There was a general consensus that the sharp slowdown in UK tech hiring in the past three years was related to: a perceived over-recruitment coming out of the Covid-19 pandemic; the effects of the macro-economic environment; an increase in offshoring; and the emerging impact of AI and automation.

Regarding the macro-economic environment, consultees remarked on the effects of rising costs due to inflation, increased business rates/taxes, and limitations in customer demand due to cost pressures on households and businesses.

Many consultees and survey respondents had increased their offshoring of tech roles, from the UK to elsewhere, over the past three years, with the key reason being cost.

Junior tech roles were most commonly offshored. India was the most frequently mentioned country to offshore roles to, with references also commonly made to Central and Eastern European countries. However, there were some consultees who reported a preference for recruiting in the UK to support face-to-face collaborative working. Other consultees reported downsides to offshoring such as different time zones, lower productivity, retention challenges and cultural differences. Several consultees raised concerns about the pace of offshoring and its impact on UK vacancies.

For many survey respondents and consultees, AI/automation has not yet significantly impacted their tech hiring.

However, they reported that AI has led to an overall decline in developer roles. In addition, some roles are becoming more generalised – requiring employees to work across a larger number of projects or products – whilst others are becoming more specialised, requiring a high knowledge of AI which can be difficult to recruit for. For many organisations, AI is still in its infancy, but it is increasingly changing the nature and skills requirements of tech roles. Those who can adapt to change and are open to reskilling stand the best chance of securing future opportunities.

Future predictions for tech hiring

Most consultees in focus groups and interviews felt it was unlikely that there would be an upturn in tech vacancies - and vacancies overall - in the UK over the next three years.

However, a minority felt that UK tech hiring would start growing again. In contrast, over half of survey respondents were optimistic that their UK tech hiring would increase - this is, however, likely to be because our sample was biased towards medium and larger organisations whose recent UK tech hiring activity had increased, who were projecting forward these current trends in their hiring activity. The most common factor influencing respondents' UK tech hiring predictions was AI and automation, with secondary factors being their business's financial position, the macroeconomic context and offshoring.

Survey respondents expected their company to hire more specialists in data and analytics, AI and machine learning, and cybersecurity, but they were less positive about prospects in roles such as cloud computing or QA and testing. In addition, they did not predict an upturn in hiring for entry-level roles.

Focus group participants, interviewees and workshop attendees reflected similar perspectives suggesting that AI and automation are likely to drive both job creation (e.g. in roles to develop and manage their organisation's use of AI) and job displacement (e.g. in roles such as junior software developers).

Consultees suggested that the demand for tech knowledge and skills is growing, and will continue to grow, within other business areas and sectors such as customer success, marketing, accounting, law and the creative industries. Therefore, upskilling existing staff for tech roles may become a growing trend. Consultees also predicted that AI is likely to become a foundational skill that everyone needs across all sectors.

Consultees did not generally feel confident predicting what might happen beyond the next few years, indicating the uncertain long-term picture for UK tech hiring. **A common view was that the increasing adoption of AI will lead to the emergence of roles that do not**

currently exist, which will redefine what it means to work in the tech sector. Some felt that AI will create additional opportunities in the UK tech sector whilst others saw any potential growth being cancelled out by greater offshoring.

Recruitment into UK tech roles

Consultees reported a growth in skills-based hiring, with the recruitment process incorporating two key stages – an assessment of technical skills and an assessment of ‘essential skills’ (with a range of skills referenced, including: cognitive skills such as problem solving; socio-emotional skills like collaboration and leadership skills; commercial awareness; and character traits like resilience and curiosity).

Employers reported that they were currently receiving large numbers of applications for UK vacancies, particularly for junior positions. To narrow the field, some reported using strategies such as pre-application questions, actively seeking out suitable applicants via social media and seeking recommendations from contacts.

The vast majority of consultees reported that their organisations placed significant emphasis on having a diverse workforce to gain different perspectives and a competitive edge. They used a range of strategies in recruitment such as blind screening and training on unconscious bias.

Qualifications required for UK tech roles

Whilst our earlier analysis of job advertisement data suggests UK tech job adverts are increasingly likely to reference qualifications (Bocock, Scott and Tang, 2025), **most consultees and survey respondents perceived the value of qualifications, particularly degrees, to have declined.** Some consultees suggested this contradiction might be because employers often use degrees to screen when they are ‘swamped’ with applications. Furthermore, whilst degrees are often not a pre-requisite for roles, they can be a ‘nice to have’, evidencing the development of a range of essential skills.

Where consultees did not specify degrees as a job requirement, the aim was often to open up opportunities to broader socio-economic groups. They welcomed self-taught applicants who had not had the opportunity to go to university. Rather than qualifications, these consultees looked for relevant experience and technical skills required for roles, alongside a range of commercial and essential skills and ‘a learning mindset’. The more senior the role, the less focus there tends to be on qualifications, with experience taking precedence.

Some consultees felt that the value of degrees is declining due to a mismatch between university curricula and industry requirements. However, graduates who have gained relevant practical experience are more attractive to recruiters. Some consultees preferred training apprentices, rather than hiring degree-qualified applicants, because of the relevant practical experience apprentices accumulate.

The group of consultees who required degree-level study for tech roles were often from larger organisations. They described running graduate programmes (and degree apprenticeship schemes) designed to bring in entry-level software developers.

A number of consultees reported a growing need for high-level qualifications (e.g. Masters and PhDs). This was particularly the case for roles in AI engineering, machine learning and other data science fields.

Most consultees were interested in relevant certifications as it demonstrated that candidates knew about/were interested in the product and were committed to their own learning. However, like degrees, the common perception was that they only provide part of the picture and do not indicate future success in a role.

Looking to the future, consultees suggested that the pre-requisite for applicants to have relevant degrees and certifications is likely to either stay the same, or decline, with other forms of learning being increasingly valued. However, the effects of changing perceptions regarding the value of a degree may be overwhelmed by the effects of increasing competition for roles, with qualifications an easy filter to default towards. Regardless, consultees suggested experience and skills will matter most. Apprenticeships are also likely to retain, or grow, their appeal, and specific qualifications and certifications relating to AI will become increasingly attractive to employers.

Skills required for UK tech roles

A given for software developer positions is that applicants have coding skills, ideally in the specific languages required for the role, although there was an indication that some roles utilising AI coding agents require less in-depth coding knowledge and skills. Applicants with expertise in a different coding language to that required by the role may be considered if they can demonstrate their flexibility and desire to learn a new language. Some organisations also look for expertise in specific systems, applications and tools.

Organisations are increasingly looking for new recruits who have knowledge and skills in AI, machine learning and data science. In addition, tech/AI skills are becoming more important in non-tech roles, for example in sectors such as accountancy and law where AI can be used to undertake more routine tasks.

Consultees and survey respondents identified a range of commercial and essential skills, and character traits, which are growing in importance in recruitment, and which become more critical as people progress into leadership and management tech roles. These skills and capabilities, which need to be underpinned by strong communication skills, include:

- problem solving and strategic thinking
- resilience, adaptability and curiosity – including a desire to grow, develop and upskill
- leadership and collaboration
- creativity and idea generation
- business acumen/commercial awareness
- emotional intelligence
- focus on delivery and outcomes.

Cultural fit is also vital with organisations seeking tech recruits who have the attitudes and essential skills aligned with their organisation's mission and values and who would fit into the existing team.

Conclusions

The demand for tech jobs in the UK has been decreasing, and it is difficult to say with any certainty whether tech vacancies will decline or return to growth in the future. However, almost all research participants agreed that **the increasing adoption of AI and automation will have a major impact on jobs in the tech sector, as well as on jobs in other sectors**. It was felt that this, combined with increased offshoring, is likely to lead to a further decrease in UK tech vacancies at junior levels and in certain roles (e.g. software development), at the same time as driving up demand for roles that develop, integrate and manage AI in business operations. Tech skills are also becoming foundational across the labour market, with data analysis skills and AI-related capabilities increasingly essential across many occupations, and many workers expected to work confidently with cloud-based tools, manage digital workflows, understand cybersecurity risks, and use collaboration platforms effectively.

Young people and others seeking to enter tech roles will need to demonstrate that they have acquired the relevant practical experience, knowledge and skills to enter and thrive in their chosen role. Our analysis suggests that, even more than before, young people will need to focus on specialisms for which demand is growing, or likely to grow, such as data analytics, machine learning and AI, and cybersecurity. This will require attention to the coding languages, applications and tools that employers seek, and a focus on AI and automation as its importance continues to grow. Those progressing through the traditional university route should seek to gain as much practical experience as possible to stand out in a competitive market.

Demonstrating a commitment to continuous learning and development is crucial. If, in the shorter-term, young people are unable to secure a job in tech, it will be important for them to show commitment to the tech sector by continuing to develop their technical skills. Job seekers are advised to build a portfolio of practical experience (for example code repositories on GitHub, or contributions to open-source projects), join and contribute to relevant networks and communities (for example, by posting on LinkedIn), maintain a visible professional profile, and remain flexible about routes into their chosen tech role.

Young people from disadvantaged backgrounds and adults who are under-represented in the tech sector may face greater barriers to compiling portfolios and accessing relevant professional networks. Low-income students or adults are also unlikely to have the financial cushion to wait, experiment and pivot as the job market changes, and are less able to afford retraining or extended job searches. In addition, they may lack the family or community connections to secure work experience or engage in projects that they can showcase in a portfolio. Organisations supporting young people and adults into tech roles play a vital role in brokering access to training, work placements, internships and careers advisers, as well as signposting to coding challenges and coding clubs.

Ultimately, young people's success in entering tech roles will rely not only on formal qualifications but also on the ability to showcase practical experience, adaptability, and a commitment to continuous learning and skill development in a fast-evolving field.

1. Background and introduction

This is one of a suite of reports published by the National Foundation for Educational Research (NFER) and The Hg Foundation on changes in UK tech hiring, potential future opportunities in the sector, and education pathways into tech jobs.

This report presents the findings of primary research, completed by NFER in 2025, on past and current trends in UK tech hiring and where future tech roles may lie. It follows an [earlier report](#) which showed that there has been a sharp slowdown in job advertisements for tech jobs in the UK over the past three years. This report summarises the causes of these trends, alongside predictions for the future cited by tech hiring managers and senior leaders who participated in focus groups and interviews, a workshop, and/or a small-scale survey.

This report also sits alongside a pair of adjacent reports on the tech pipeline. These two reports draw on quantitative analysis of educational trajectories into the tech sector; one is a summary, and the other is a more detailed technical report. Together, the four reports published this year (2025) are intended to help policy makers, training providers, employers and others to understand current changes in UK tech hiring, plan for the future, strengthen the pipeline into the tech workforce, and address disparities in subject choices and employment outcomes between different genders, ethnicities and socio-economic groups.

Understanding where future opportunities may lie, where the UK is best positioned to compete with other markets, and how to grow the pipeline into tech jobs is a vital part of the UK's broader industrial strategy and ambitions to grow the economy and productivity. This is because the 'Digital and Technologies' sector contributes about £207 billion in gross value added (GVA) and supports over 2.6 million jobs in the UK, with productivity 19 per cent higher than the national average. The Digital and Technologies sector is expected to increase by £90 billion, creating 500,000 jobs by 2035 (UK Government, 2025). Developing the tech skills pipeline has been stated as a national priority and the government is investing nearly £200m in developing the workforce. There is also evidence of concerning disparities in participation and career progression within the tech sector affecting women, ethnic minorities, and individuals from disadvantaged backgrounds (Tech Talent Charter, 2024).

The Hg Foundation has funded this research as part of its mission to ensure that the tech sector of the future harnesses the skills of everyone, regardless of background. The Hg Foundation helps under-represented groups access high quality jobs in tech by supporting impact focused education and employment programmes across Europe and North America.

The following sections present the research design and findings:

- Section 2: About the research
- Section 3: Past and current trends in hiring for UK tech roles
- Section 4: Future expectations for UK tech hiring
- Section 5: Recruitment into UK tech roles
- Section 6: Qualifications required for UK tech roles
- Section 7: Skills required for UK tech roles
- Section 8: Conclusions.

2. About the research

2.1. Aims and research themes

The aims of this primary research were to explore the perceptions of tech hiring managers and senior leaders on the causes of past and current trends in tech hiring, and how they think these trends might evolve in the future. The following themes were explored, with a primary focus on the UK:

- recruitment for tech roles, including past trends in demand and factors behind them, and future needs
- the recruitment process, including the recruitment of contractors and the role of equality, diversity and inclusion in recruitment
- qualifications sought for tech roles
- skills required for tech roles, including technical and essential skills.

2.2. Methodology

The primary research included three strands, which together drew on the experiences and perspectives of hiring managers and senior leaders in almost 100 tech organisations and organisations in other sectors which recruit for tech roles. This included:

- focus groups and interviews with staff who recruit for tech roles in tech and non-tech organisations representing a range of sectors and sizes
- a workshop hosted by Working Options in Education, a careers guidance charity, which was attended by key stakeholders in the tech sector, a representative from The Hg Foundation and the researchers
- a small-scale survey of 51 hiring managers and leaders in the tech sector (all of whom recruited for tech roles in the UK, and sometimes also abroad).

It is worth noting that this was a fairly small-scale, primarily qualitative study and, as such, a degree of caution is needed when interpreting the findings. Further details on the methodology are provided below.

2.2.1. Focus groups and interviews

Thirty-seven consultees representing 36 organisations took part in focus groups and interviews, which explored all of the research themes summarised in 2.1 above. Questions particularly focused on hiring into tech roles in the UK.

Consultees were primarily tech hiring managers but also senior strategic staff, staff who had a broader recruitment role, and two were staff whose role was to support the access of under-represented groups into the tech sector. Organisations represented were in both tech and non-tech industry sectors, mostly based in the UK, and were of differing sizes, but all recruited staff into tech roles. Thirty-one of the consultees took part in focus groups and six participated in individual interviews.

An overview of the size and sectors of the organisations consultees represented is provided in the Appendix.

2.2.2. Stakeholder workshop

A stakeholder workshop was convened by Working Options in Education, an organisation which provides careers opportunities and educational guidance to young people aged 14-19 in England and Wales. Through its network of volunteers and partners, it delivers programmes to help young people explore their options and find their future career.

The workshop lasted an hour and a half and was attended by ten people (excluding the researchers). Its primary aim was to explore views on potential future hiring trends in tech in the UK, whilst also checking whether the findings from the previous focus groups and interviews resonated with stakeholders. Attendees included two representatives from Working Options, a representative from The Hg Foundation and seven stakeholders with an interest in the tech sector. These seven stakeholders included: a STEM (science, technology, engineering and maths) Partnerships Lead at a London Council; two senior staff responsible for hiring in two large global tech companies, a Chief Technology Officer from a small tech company (<50 employees), an accreditation body for tech education and training, a senior staff member from a medium tech company (201-500 employees) and a Chief People Office at a small organisation seeking to develop tech talent.

2.2.3. Survey

A short survey was designed to gain further insights on past and current UK tech hiring trends, and to understand expectations in the sector about how these trends might evolve in the future. The survey achieved 51 responses; 28 responses from hiring managers of organisations based in the UK and 23 from employers based elsewhere but who recruit for tech roles in the UK. Twenty-four respondents identified as C-suite or equivalent, five were board members, 11 managed technology functions, seven managed other functions (e.g. HR), and four identified as having other roles (e.g. talent acquisition/consultancy). The survey was promoted via social channels and distributed to a convenience sample via The Hg portfolio (see <https://hgcapital.com/portfolio>), and Boardwave partners (see <https://www.boardwave.org/partners>).

The sample was not intended to be representative of all tech employers, and results should be interpreted with this in mind. This is illustrated by the fact that, despite the sharp slowdown in UK tech hiring seen across the sector over the past three years, over half of the respondents to the survey had increased their tech hiring activity in the UK over that time period, suggesting the sample was skewed towards growing organisations. Descriptive statistics from the survey are presented throughout this report. Whilst the survey findings provide an indication of the generalisability of what we heard in focus groups and interviews about past and current trends, together with an initial view of what might happen in the future, caution is required when interpreting the results due to the small and unrepresentative sample.

2.2.4. Data analysis

All of the focus groups and interviews were undertaken on Teams and recorded with participant agreement, with all but one consultee providing consent. The Teams transcripts were then reviewed, and any issues resolved. The data was then collated, ordered and analysed thematically.

Unweighted data from the survey was analysed, with simple descriptive statistics used to summarise and describe the patterns in the data. Findings from all strands of the research are interwoven and summarised in this report.

3. Past and current trends in hiring for UK tech roles

Summary

- Most consultees taking part in the focus groups and interviews reported a significant decline in their recruitment for tech roles in the UK since 2022, with entry-level roles particularly impacted. This is in line with findings from our analysis of Adzuna job adverts. By contrast, around a half of the respondents to our survey indicated that their UK tech hiring had increased; whilst this is likely to be a result of sampling bias, it highlights that not all tech employers are following the general trend.
- Roles reported as declining included manual QA roles and web developers, whilst continued demand was reported for machine learning and AI-related developer/engineering roles, DevOps and QA engineers, data and business analysts and hybrid business analyst and programme manager roles. Consultees also reported a move towards hybrid roles which combine tech skills with other non-tech skills, for example in customer liaison or programme management.
- There was a general consensus that the sharp slowdown in UK tech hiring over the past three years was related to: a perceived over-recruitment coming out of the Covid-19 pandemic; the effects of the macro-economic environment; an increase in offshoring; and the emerging impact of AI and automation.
- Many consultees and survey respondents suggested they had offshored more tech roles, from the UK to elsewhere, over the past three years, with the key reason being cost. Junior roles were most commonly offshored.
- For many survey respondents and consultees, AI/automation has not yet significantly impacted their UK tech hiring. However, they reported that AI has led to an overall decline in developer roles. In addition, some roles are becoming more generalised - requiring employees to work across a larger number of projects or products - whilst others are becoming more specialised, requiring a high knowledge of AI which can be difficult to recruit for.

This section explores tech employers' perceptions of past and current trends in UK tech hiring and what lies behind the changes in demand observed in recent years.

3.1. What roles do consultees currently recruit for?

Consultees taking part in the focus groups and interviews reported recruiting for a wide range of tech jobs. Most commonly-reported job titles were: software developer and engineer (front and back end as well as full stack developers who do both), QA engineer, test engineer, DevOps engineer, product owner, product manager, data analyst/engineer, business (intelligence) analyst, data scientist and machine learning (ML) specialist, cyber security and fraud prevention, IT support technician, information security analyst/engineer, cloud architect/operations (managing data centres), network infrastructure engineer, AI specialist, web developer, UX engineer/designer, and Scrum Master.

3.2. How has demand for tech roles been changing?

Most consultees taking part in the focus groups and interviews reported a significant decline in their recruitment for tech roles in the UK since 2022. This is in line with the

findings from our analysis of Adzuna job advertisement data. However, it is worth noting that there were some consultees who reported that their business was currently thriving and, consequently, they were recruiting for as many, or more, staff as they had when vacancy rates were high prior to the Covid-19 pandemic. Over half the respondents to our survey also indicated that they had increased their tech hiring in the UK over the last three years, bucking the general trend seen across the sector. This is likely to be the consequence of sampling bias - our survey sample was skewed towards medium and large organisations whose UK tech hiring had increased over the past three years whereas the UK tech industry is overwhelmingly composed of small businesses. Nevertheless, it does highlight that, whilst there has been a sharp slowdown in tech hiring across the sector, this has not been felt by all employers recruiting for tech roles.

This significant decline in vacancies followed a rise in tech recruitment in the five-to-ten-year period before the Covid-19 pandemic, a stalling of recruitment in the early phase of the pandemic and a recovery in the later stages after lockdowns ended.

In terms of tech roles recruited for in the UK, the perception of participants in the focus groups and interviews was that **there are now relatively fewer roles at junior level, with some demand remaining at mid and senior level where it can sometimes be harder to find suitable people with specific skills:**

‘Everybody kind of wants this mid to senior level...and it’s really tough because there isn’t the same volume of programmers or opportunities at that entry level’

‘...at that point [recruiting for senior tech roles] it is harder because those people tend to be rarer’.

The key stakeholders consulted confirmed that entry-level roles and graduate opportunities are declining fastest, both within and beyond tech. They also reported examples of recruiters paying more for experienced staff, for example who had cyber skills, or training staff in house (for example data centres) where challenges were being faced in finding suitably skilled and experienced staff.

However, several consultees, often from larger organisations, did not fit this mould and reported a focus on recruiting junior staff and training them on their products rather than recruiting more senior staff. This was commonly because of the lower salary level of junior staff and because they could be trained on the organisations’ specific products, tools and processes.

Consultees reported a number of tech roles within their organisations for which they were seeing continued (and sometimes growing) demand. These roles included: machine learning and AI-related developer/engineering roles; DevOps engineers; full stack developers working on both the front and back end; quality assurance (QA) engineers (although these were primarily automated QA roles and some felt these roles were decreasing due to AI); test engineers; hybrid tech roles including tech and customer facing elements such as pre-sales roles and customer success managers; mid to senior core software roles; solution architects; cloud computing engineers; data engineers, analysts and scientists; business analysts, as well as hybrid analyst roles such as hybrid business analyst and programme manager roles; network infrastructure roles; and roles designing and leading AI and automation endeavours. This list may not be exhaustive, and it is worth noting that

attendees referenced tech roles within their organisations for which they were seeing continued/growing demand which may not be representative of demand overall.

In terms of tech roles for which recruitment was declining, manual QAs were reported to be in decline, as well as web developer roles due to the range of web tools now available. There were mixed reports on the growth or decline of cybersecurity roles, for example it was a growing area in banking whereas in some fields recruitment was declining as this responsibility was becoming integrated within other roles.

In addition, some consultees referred to a move towards ‘hybrid’ roles which combine tech skills with another skill such as customer liaison or programme management. Mention was also made of roles such as generic or hybrid analysts which staff from other areas of the business could transfer into and be trained in the tech skills the role required.

3.3. What is behind the recent decline in demand for tech roles?

There was a general consensus that this recent decline in vacancies is related to four key factors:

- a perceived over-recruitment coming out of the Covid-19 pandemic
- the effects of the macro-economic environment
- an increase in offshoring
- the emerging impact of AI and automation.

However, there was no implicit consensus amongst consultees on the relative importance of each of these factors and, as mentioned previously, some businesses were still thriving despite them. The sections below provide further exploration of each of these factors.

3.3.1. Over-recruitment coming out of the Covid-19 pandemic

There was a perception amongst consultees that the increase in hiring coming out of the pandemic was due to business appetite for digital and cloud transformation. **It was felt that, following Covid-19, there had been a tendency to hire more staff to be ‘ahead of the curve’.** Whilst this is clearly reflected in our earlier analysis of job advertisement data (Bocock, Scott and Tang, 2025, pages 9-10) that analysis also suggested that the rise in vacancies coming out of the Covid-19 pandemic represented a return to pre-Covid-19 levels and preceded the sharp decline in UK tech hiring activity over the previous three years.

3.3.2. The influence of the macro-economic environment

Consultees reported that, over recent years, their organisations had faced rising costs due to inflation, increased business rates/taxes, and limitations in customer demand due to cost pressures on households and businesses. They remained uncertain about future demand, business costs and international trade. A small number of consultees also referenced the impacts of Brexit, including a decline in exports and the UK being perceived to be a less attractive place to invest, as well as concern about doing business with America.

These macroeconomic conditions have contributed to a slow-down, and in some cases halting, of recruitment in organisations, with many major tech companies making redundancies in 2023. Consultees - from both tech and non-tech organisations - reported an increase in management pressure to cut costs, restructure and lay off staff, as well as staff

who leave not being replaced and staff being required to do more for less. Recruitment is still happening but not at the same level:

'I've seen it go quiet. It was mad during Covid and then even madder after. And now it's starting to balance back out again so it's slowing right down'

'Since 2023, we've had a fairly subdued market'.

3.3.3. The impact of offshoring

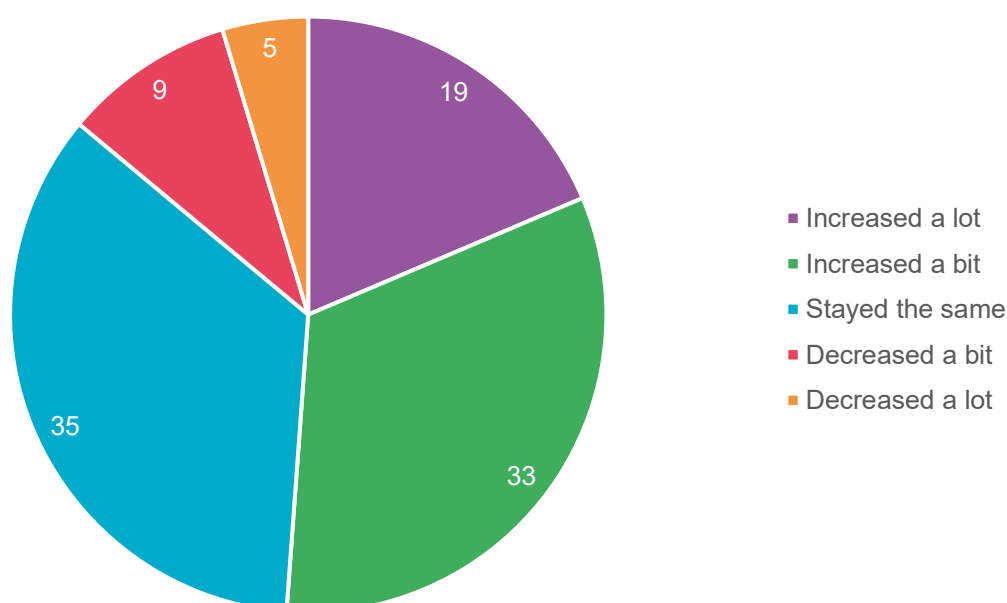
Many consultees - particularly those from larger organisations - suggested that an increase in offshoring is negatively impacting vacancy numbers in the UK. They frequently reported offshoring tech roles to Asia and Central and Eastern Europe. In some cases, organisations said they had offshored whole departments, functions, or teams who can work together face-to-face (for example comprising a software developer, test engineer, team leader and senior manager):

'In our organisation it's massively decreased [recruitment in the UK] because now we have built a technology centre in India. So, for lots of these roles, we are only recruiting in India. So, in the UK market, I've seen a massive decrease in lots of these roles but at least 50 per cent compared to, say, three years ago'

'We have continued to shift hiring to places that have larger talent pools to continue to hire at the pace needed, typically hiring in lower cost countries where there is more supply, often at entry level and we set them on a career development track...'

Around half (52 per cent) of survey respondents similarly indicated that they had outsourced more roles away from the UK to other markets, over the past three years, whilst around a third (35 per cent) indicated that their outsourcing had stayed the same, as shown in Figure 1 below.

Figure 1: Survey respondents' tech outsourcing trends (from the UK to elsewhere) over the past three years (%)



Source: NFER and The Hg Foundation Tech Recruitment Survey. N=43

Some consultees suggested that junior tech roles such as software developers, QA and test engineers, .net engineers and DevOps engineers were most likely to be offshored. This is because they tend to require a technical skill set and less interaction with other business functions, making them easier to be located anywhere in the world. One consultee also said that their graduate programme was being globalised, whilst others mentioned that senior and middle management roles and roles requiring interaction with other teams tended to be retained in the UK. This included roles such as business analysts, project managers, Scrum Master, Agile and Kanban leads and IT support roles. However, this was not universal as other consultees provided examples of offshoring all levels of role to achieve cost savings:

'We hire a lot of software engineers and QA engineers and DevOps engineers mostly in India...In the UK we have a few more senior IT stakeholders as well as an IT support team'

'We're finding that business analyst roles, project management or Scrum Master, those kinds of roles, they're definitely more UK based and then the offshore ones are the ones that require a more technical skill set'.

Some consultees mentioned retaining core teams in the UK to counter challenges with different time zone differences which offshoring created:

'...because offshoring doesn't really work with time, we do have a core team here as well'.

India was the most commonly mentioned Asian country in relation to offshoring, but reference was also made to a growth in offshoring roles to Central and Eastern European countries - such as Poland, Romania, Bulgaria, Belarus, Ukraine - and to Portugal:

'I would say that there has been a recent growth of offshoring in general and two countries have come out as particular winners...It's been India and Poland...a lot of Central Europe and India across the board with front office jobs done in the UK, middle office in counties like Poland and back office in countries like India...'

There was mention of back office roles more often being recruited in India and middle office roles in Poland although this was perceived to be changing, with more middle office roles now moving to India.

A large number of other countries were also referenced in relation to offshoring including Sri Lanka, Malaysia, the Philippines, Vietnam, South Africa, Kenya, Nigeria, the USA, Turkey, Chile, Argentina, Brazil and Mexico.

The reason for offshoring roles shared by consultees in focus groups and interviews was primarily to reduce costs. Some consultees reported decreasing margins giving rise to pressure to reduce costs and increase efficiency, resulting in increased outsourcing of vacancies to countries where salaries are lower. There was also mention of the increase in high-quality university degree courses and graduates in alternative markets from which skilled staff could be recruited - particularly in Central and Eastern Europe, but also elsewhere – which had made offshoring easier and more attractive. Lack of skills in the UK was another less commonly reported reason for offshoring, and sometimes it was a

combination of cost and superior skill sets that could be found elsewhere. For some, the increase in national insurance (NI) in the UK was another reason to offshore roles:

'We typically hire in low-cost countries where there is more supply... There is a move towards outsourcing and retaining fewer employees internally... It is hard to hire in the UK as it is hard to find the skills needed and those that have the skills are expensive, so we have stopped trying to recruit here.'

Another reason given for an increase in offshoring - particularly for more junior technical roles - was a move to home working during the Covid-19 pandemic, which demonstrated that people did not necessarily need to work in an office to be productive, increasing employers' appetite to achieve cost savings by offshoring:

'And I saw that big shift happening during Covid, you know it was more of a test and learn. It showed that people don't necessarily have to be coming into the office and they don't need to be based in the UK... and, fundamentally, it's a lot cheaper, right?'

Survey results (as presented in Figure 1 above) suggest that outsourcing may also be symptomatic of a need to significantly scale up tech operations to satisfy growing demand. Increased outsourcing of tech roles was a feature of surveyed organisations whose overall UK tech hiring had decreased, and those whose UK tech hiring had increased. More specifically, over 60 per cent of respondents who said their overall hiring for tech roles had either decreased or increased indicated that they had outsourced more roles over the last three years than previously, whereas 73 per cent whose overall tech hiring had 'stayed the same' said their outsourcing had remained the same. This suggests that many organisations advertising fewer tech vacancies in the UK might be doing so because they are moving more roles abroad, potentially in response to greater cost pressures. However, it also indicates that companies scaling up operations to meet growing business demand may hire both in the UK and abroad.

One interviewee commented that there might come a time when offshoring strategies 'backfire' and organisations have to rethink. In this regard, **there were a number of consultees - often from smaller organisations - who stated a preference for recruiting in the UK**. This was frequently because they wanted their team together in one location to support face-to-face collaborative working within the same time zone:

'We are a company that do everything in-house and have everyone together. We see the huge benefits of that, you've got the tech team sitting next door to the development team, the creative team... It's a great environment for you to be able to bounce stuff off each team just because you've got that instant connection there...'

Consultees reported a number of downsides to offshoring. These included: infrastructure and Wi-Fi issues, different time zones, higher inflation, lower productivity, and challenges with retention. Cultural differences could also be an issue in countries where workers are not expected to challenge their superior:

'The effect of recruiting in more disadvantaged areas is that we have to manage the socio-economic factors in these countries. Inflation can be high, and we can experience high staff turnover. This can be due to people leaving the country. The downside is that it is harder to retain people'

‘Over here in the UK, you’re more comfortable challenging a co-worker or your superior. But in [name of country] that may be seen as something you’re less likely to do which is really important when you’re trying to build great websites. You need to be able to constantly challenge and point things out when they’re not right’.

One consultee questioned whether businesses were always saving costs by recruiting abroad:

‘A business shouldn’t just be looking at the cost of an employee as to why they’re hiring them somewhere... There may be different costs that you’ve not considered... like time zones, the availability to collaborate with the team... whether they’ve had the right educational background... quite often businesses are focusing too much on the cost as opposed to the return on that investment... You can find a software engineer cheaper elsewhere but maybe you need two of them to get the same productivity you may get out of somebody else...’.

Recruiting in Central/Eastern European countries was cited by many consultees as increasingly attractive due to workers being in a similar time zone and having a better cultural fit, which supported collaboration and therefore also productivity and return on investment.

Several consultees acknowledged growing concerns with the fast pace of offshoring and the impact on vacancies for UK job seekers, particularly at the more junior level.

3.3.4. The ascendancy of AI and automation

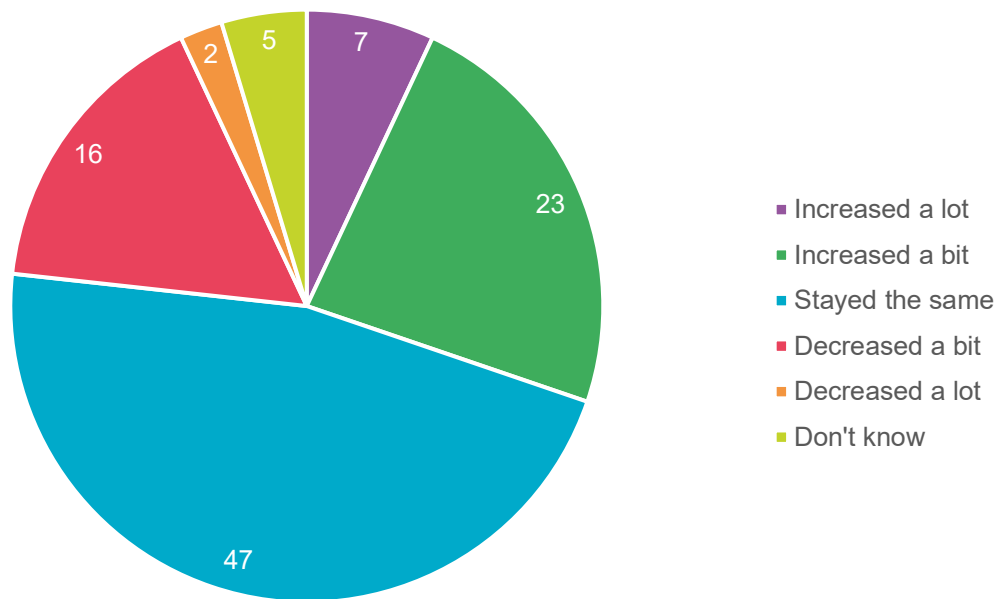
In focus groups and interviews, many consultees indicated that AI adoption was in its infancy in their organisation and still being discussed in an ‘abstract way’. However, others suggested that it had already had an impact, either by driving demand for new roles related to AI development and adoption, or, conversely, by replacing staff roles in areas such as the first level of customer support, simple web development and administration:

‘We’re still figuring out how we are going to use AI as a business. We have to embrace it, but what are the business-specific requirements and utilisations for it?’

‘We’ve just started exploring AI that can take the initial queries from customers and then direct them forward because, if we needed to scale up the customer support team to do all of that... that would mean a lot of roles and a lot of admin that we could automate’.

These sentiments were reflected in survey responses. **Nearly half (47 per cent) of respondents indicated that AI/automation had not caused their tech hiring in the UK to increase or decrease over the past three years** (see Figure 2 below), suggesting that, whilst AI and automation may have a greater impact than any other factor in the coming years, the sharp downturn in UK tech hiring in recent years likely owes a lot more to other factors. However, a significant minority of respondents indicated AI/automation had led to either an increase (30 per cent) or a decrease (18 per cent) in their company’s UK tech hiring, reaffirming a view shared by several consultees that **the ascendancy of AI and automation is starting to drive both job creation in some areas** (to develop, manage and integrate the new technologies) **and job displacement in other areas** (where roles are replaced by the new technologies).

Figure 2: Survey respondents' reports on the effects of AI and automation-related technologies on tech hiring in the UK over the past three years



Source: NFER and The Hg Foundation Tech Recruitment Survey. N=43

In terms of the effects of AI and automation on specific roles, there were reports in the focus groups and interviews that **AI has led to an overall decline in software developer roles and to some roles becoming more generalised and others more specialised**. More generalised roles entailed employees working across a larger number of projects or products, often using AI coding assistants, although an understanding of the code and ability to QA was still required:

'We have found more generalist roles take a front seat in recent years where, I think, once you know the basics of a language, you have the ability to apply it to multiple domains which has been taking precedence rather than hyper specialism with the coding languages'

'My experience with using AI with code is that you have to have somebody who understands how code is supposed to work in the first place'.

Consultees suggested there was growing demand for specialised roles that require a high level of knowledge of AI and are centred on skills in developing, integrating and using AI and automation-related technologies to:

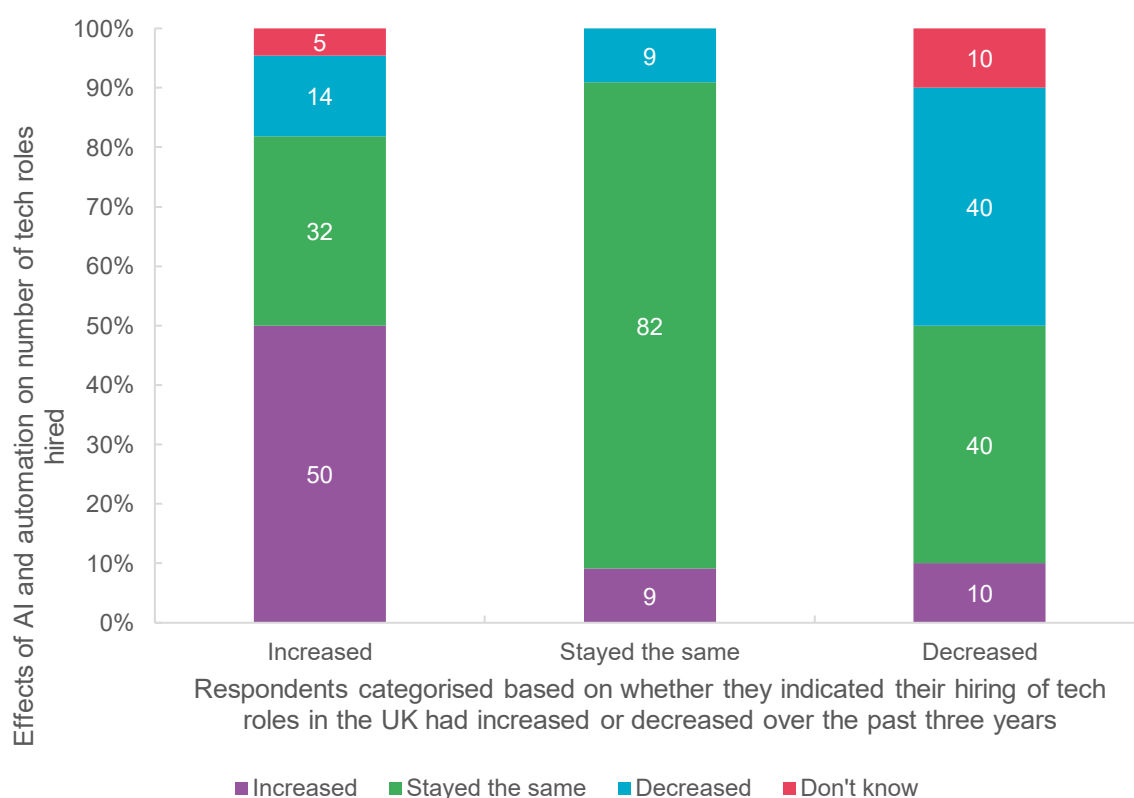
- drive forward organisations' solutions to business problems
- improve efficiency of processes
- enhance products and services
- undertake more (or more sophisticated) data analysis.

Roles focused on the ongoing development, integration and use of AI were reported to be currently difficult to recruit for and were expected to increase in volume:

'There's a big gap for senior skilled professionals in that area [AI] because it's such a new technology and it's going to take a while for there to be a wider talent pool'.

Some consultees commented both on the rising demand for AI-related roles and the declining demand for other roles displaced by AI or more easily outsourced from the UK because of AI. The net effect of AI on organisations' UK tech hiring may depend on where the company is on the AI adoption curve, with increased demand for new AI-related roles eventually leading to lower demand for different roles more easily automated elsewhere in the business. Survey responses similarly indicated that AI may be driving both job creation (in some areas) and job displacement (in other areas) – whilst half (50 per cent) of respondents who had *increased* their UK tech hiring in recent years indicated that AI and automation had driven the change, but a similar proportion (40 per cent) of organisations whose UK tech hiring had *declined* also cited AI and automation as a cause (Figure 3 below). Respondents from organisations that had outsourced more tech roles from the UK in recent years were also around twice as likely to indicate that AI and automation had driven an increase in their UK tech hiring - this could be because AI and automation drive up demand for AI-related roles in the UK whilst making it easier to outsource other roles, such as software developer jobs, to other markets.

Figure 3: Survey respondents' reports on the effects of AI and automation on number of tech roles by respondents' hiring activity over the last three years



Source: NFER and The Hg Foundation Tech Recruitment Survey. N=43

Focus group consultees reaffirmed that developing/adopting and integrating new technology takes time, and there is also generally a lag before this feeds through into roles being displaced from humans to machines:

'I think our company is very progressive in how we use AI and when I talk to other CEOs they're nowhere near what we are doing and we're still recruiting mids, seniors and juniors but not at the rate that we might have been doing'

'I've been involved in automation and AI for quite a while, automation a lot longer. And it doesn't move very fast...you know these systems are very complex, but, in the future, I think it will decline the amount of roles which are required hands-on'.

For many organisations, AI is still in its infancy but it is increasingly changing the nature of tech roles in the UK:

'...Right now, we are seeing AI in its absolute infancy, right?...It's a buzz word...Within the next five years, AI could very well be doing the core coding job or the core analytical business job of a lot of people in this economy...We're going to move towards a world of using AI to develop and do a lot of these tech roles that are currently done by humans. The nature of employment will change...'

Those already in work need to develop their skill set to effectively position themselves to secure evolving roles. Of growing importance are leadership skills in managing change and supporting staff to adjust, reskill and retrain:

'How people in these [leadership] roles behave will be key to how the workforce accepts the changes needed'.

4. Future predictions for UK tech hiring

Summary

- Most consultees in focus groups and interviews felt it was unlikely that there would be an upturn in tech vacancies - and vacancies overall - in the UK over the next three years. However, a minority felt that UK tech hiring would start growing again. In contrast, over half of survey respondents were optimistic that their UK tech hiring would increase. However, this is likely to be because our survey sample was biased in favour of growing organisations who were projecting forward current trends in their hiring activity.
- Survey respondents expected their company to hire more specialists in data and analytics, AI and machine learning, and cybersecurity, but they were less positive about prospects in roles such as cloud computing or QA and testing. In addition, they did not predict an upturn in hiring for entry-level roles. Focus group participants, interviewees and attendees at the workshop reflected similar perspectives suggesting that AI and automation are likely to drive both job creation (e.g. in roles to develop and manage their organisation's use of AI) and job displacement (e.g. in roles such as junior software developers).
- Consultees suggested that the demand for tech knowledge and skills is growing, and will continue to grow, within other business areas and sectors such as customer success, marketing, accounting, law and the creative industries. Upskilling existing staff for tech roles within organisations may become a growing trend.
- AI is likely to become a foundational skill that most people need across all sectors.
- Consultees did not generally feel confident predicting what might happen beyond the next few years, indicating the uncertain long-term picture for UK tech hiring. They felt that the increasing adoption of AI will lead to the emergence of roles that do not currently exist and will redefine what it means to work in the tech sector. Some felt that AI will create additional opportunities in the UK tech sector whilst others saw any potential growth being cancelled out by greater offshoring.

4.1. What might tech hiring look like in the future?

4.1.1. What might tech hiring look like over the next three years?

Consultees participating in the focus groups and interviews were asked about their expectations regarding the future of tech hiring. Future predictions were also a key focus of the stakeholder workshop, and of the survey of tech hiring managers and leaders.

The general feeling in the focus groups and interviews was that we may not see an upturn in tech vacancies - and vacancies overall - in the UK over the next few years.

Consultees with this view believed that businesses would continue to focus on increasing productivity and efficiency by expecting existing staff to do more rather than replacing staff who leave, reducing operating costs by making increasing use of AI and automation in order to make AI-related capital investments, and offshoring roles:

'So, my suspicion is that tech roles are not necessarily going to increase in the coming years. I think a lot more companies will be able to do the same amount of output with fewer developers is my hunch'

'It's just the market is really hard at the moment, it's really hard. I think lots of businesses are still being really cautious'.

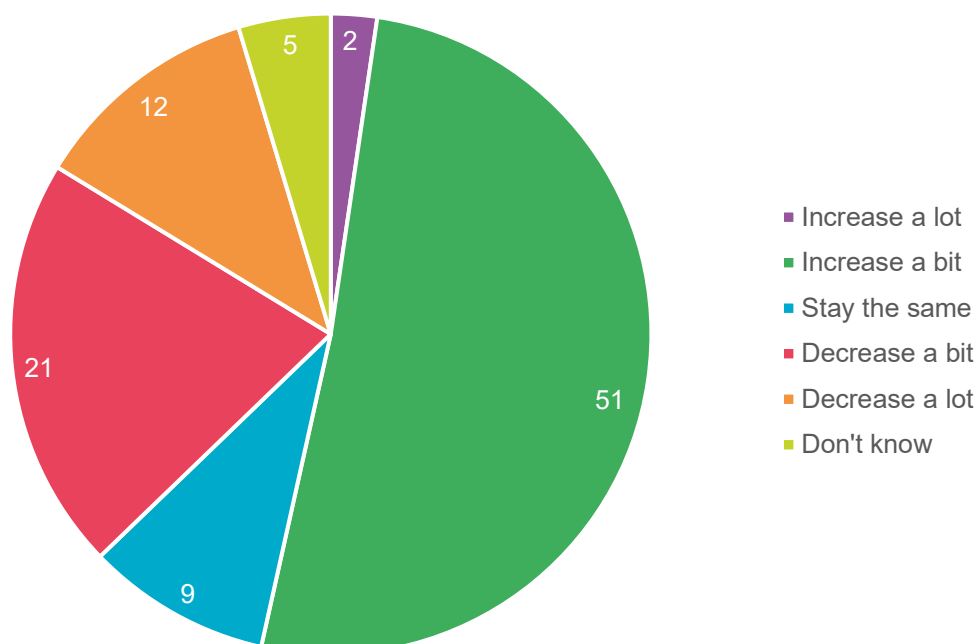
However, a minority of consultees presented a more optimistic view that UK tech hiring would start growing again, at least for certain roles:

'Although I see signs that the market is slowly starting to pick up for soft technology roles, it is slow and much more selective, especially in the UK than it was say three or four years ago'.

In contrast to focus group and interview consultees, survey respondents were generally more optimistic, as shown in Figure 4 below. However, as mentioned previously, this is likely to reflect the fact that our sample was skewed towards medium and larger organisations whose recent UK tech hiring activity had increased, which contrasts with the sharp downturn seen across the market as a whole. Over half (53 per cent) of respondents indicated that they envisaged hiring more tech roles in the UK, which is very similar to the proportion (51 per cent) who reported that their UK tech hiring had increased over the past three years, suggesting their optimism may be based on an extrapolation of existing trends in their firm. By contrast, a third (33 per cent) of survey respondents said that they expected their UK tech hiring to decline, which is slightly more than the proportion (23 per cent) who said their UK tech hiring had declined over the past three years.

Future optimism appears to be generally based on current fortunes. Around three-quarters (73 per cent) of those whose UK tech hiring had grown over the past three years were optimistic about future hiring increasing, whilst a similar proportion (70 per cent) of those whose UK tech hiring had declined expected hiring to decline further over the next three years. Respondents who had reduced their outsourcing over the past three years were also more likely to predict that their UK tech hiring will increase or stay the same in the coming years.

Figure 4: Survey respondents' predictions for UK tech hiring over the next three years



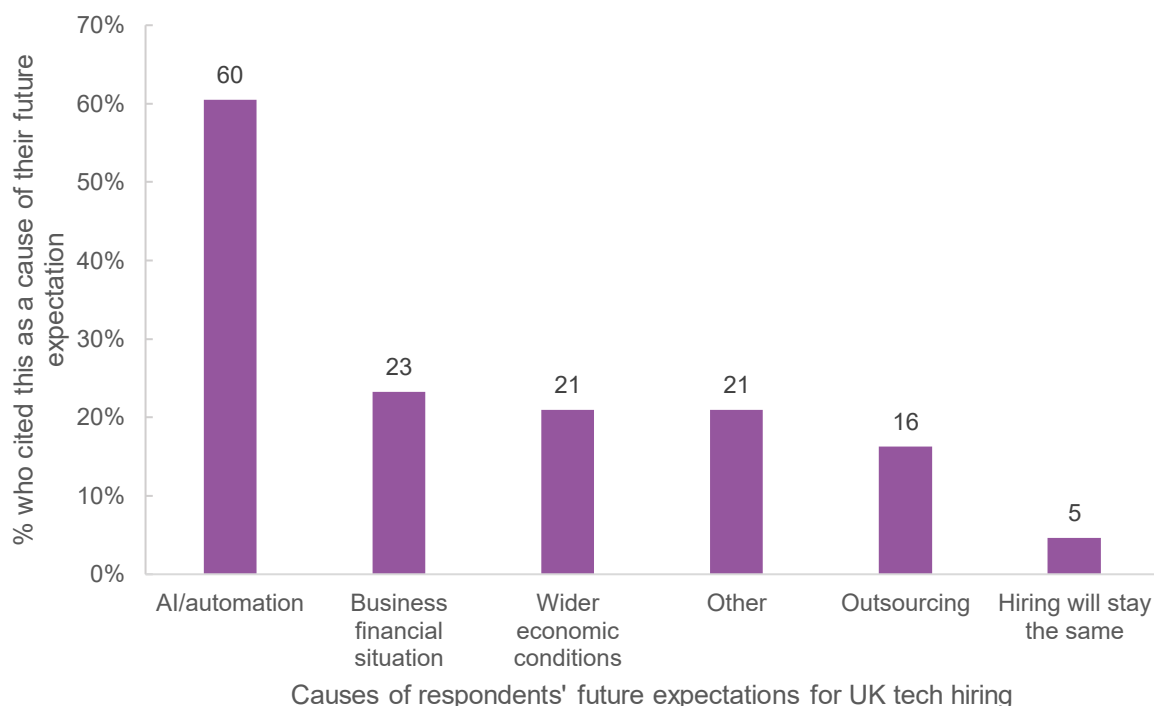
Source: NFER and The Hg Foundation Tech Recruitment Survey. N=43

The most common factor influencing respondents' UK tech hiring predictions was AI and automation, with secondary factors including their business's financial position, the macroeconomic context and outsourcing, as shown in Figure 5 below. This was true both amongst those optimistic about future prospects for tech hiring in the UK, and those who were more pessimistic, suggesting tech hiring managers and leaders may have mixed expectations about whether AI/automation will lead to a net increase or decrease in UK tech hiring within the next three years. However, AI and automation was more commonly cited by those expecting their firm's UK tech recruitment to decline, compared to those expecting UK tech recruitment to increase (86 per cent vs. 52 per cent).

Amongst survey respondents whose organisations had increased their outsourcing over the past three years, AI and automation were also more frequently cited as a cause of their future UK tech hiring predictions (73 per cent) than survey respondents whose outsourcing had stayed the same or had declined (60 per cent and 17 per cent respectively). This could indicate an interaction between employers' outsourcing decisions and their AI/automation decisions. This might occur if one influences the other - for example, AI and automation could increase demand for some specialist roles in the UK (e.g. AI specialists) whilst making other more generalist roles easier to outsource.

The macroeconomic context was also cited by around a fifth of survey respondents (21 per cent) as a factor behind their future expectations, and a similar proportion (23 per cent) cited their businesses' financial situation. Economic conditions were cited more frequently by those expecting their UK tech hiring to reduce (29 per cent) compared to those expecting their UK tech hiring to increase (13 per cent), suggesting concern about the future economy may be driving down UK tech hiring activity amongst a significant minority of businesses.

Figure 5: Factors behind survey respondents' UK tech hiring predictions over the next three years



Source: NFER and The Hg Foundation Tech Recruitment Survey. N=43

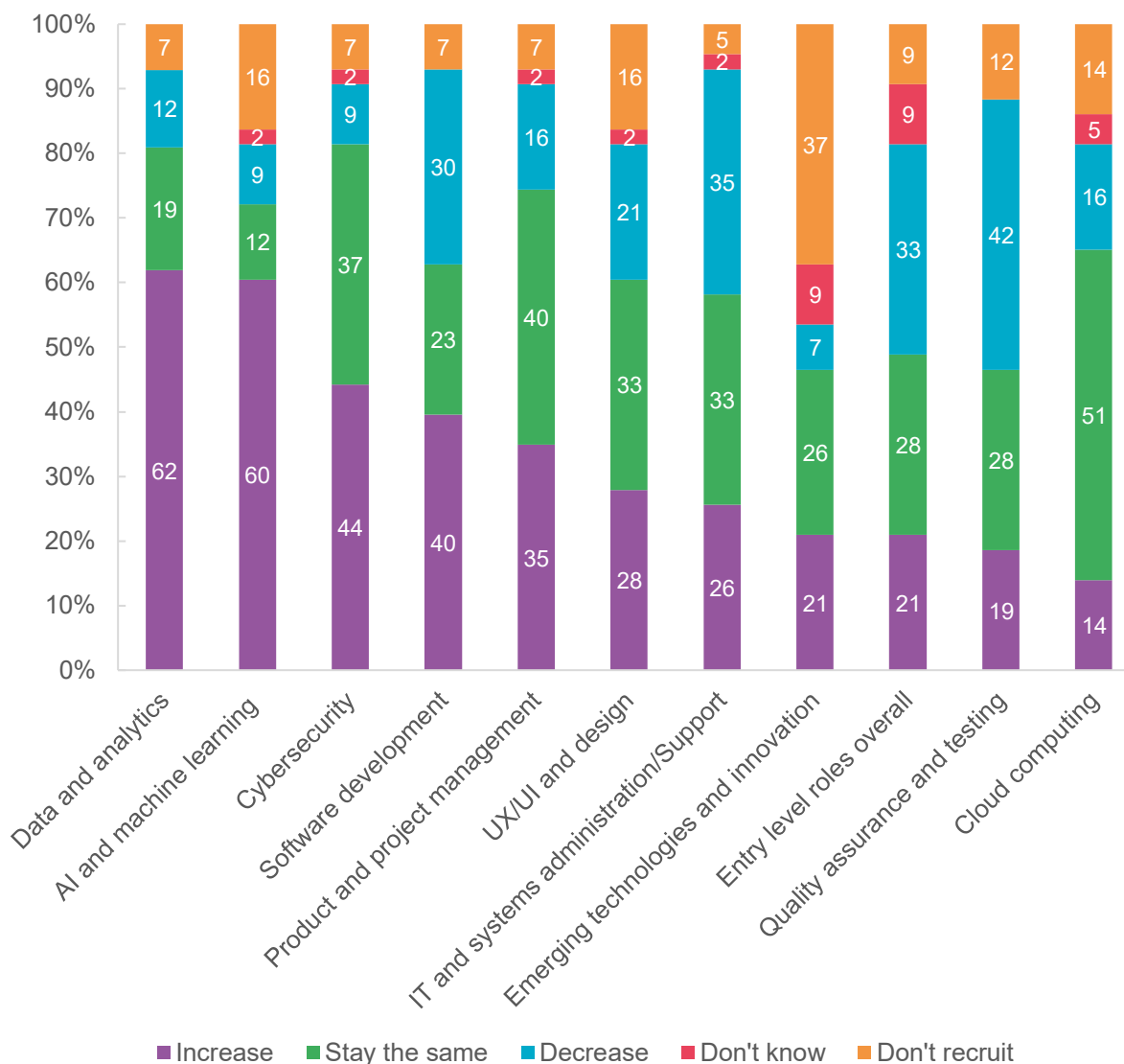
Survey respondents' future predictions varied by role type (see Figure 6 below). **Most survey respondents expected their company to hire more specialists in data and analytics and AI and machine learning (62 and 60 per cent respectively), and nearly half (44 per cent) expected roles in cybersecurity to grow. By contrast, less than a fifth of respondents expected their firm to hire more specialists in cloud computing (14 per cent) or QA and testing (19 per cent).** This was reflected in comments from survey respondents, such as:

'There is, and will be, greater demand for technology skill sets such as AI/Generative AI, cyber security and data analytics, but with a candidate pool that isn't necessarily growing'

'One of the biggest challenges in tech recruitment today - and even more so in the future - is finding people who can build, deploy, and continuously improve AI agents'.

The reasons respondents cited for their future predictions also varied by role type. Differences indicated that AI and automation may be driving greater change in the demand for some role types (e.g. data and analytics and cybersecurity), whilst some roles may be more vulnerable to outsourcing (e.g. software development) and still other roles may depend more on the business' financial position and macroeconomic context (e.g. cloud computing).

Figure 6: Survey respondents' predictions for UK tech hiring over the next three years, by role type



Source: NFER and The Hg Foundation Tech Recruitment Survey. N=43

Survey respondents were pessimistic about future hiring for entry-level roles, with a third (33 per cent) expecting a decrease in these roles, compared to a fifth (21 per cent) expecting an increase. This was reflected in comments such as:

'AI has made the need for junior colleagues mostly redundant. We're employing senior engineers used to managing three to four teams of people that are now happy to work as individual contributors and be more productive independently'

'The biggest challenge within tech recruitment today is entry-level roles, given the advent and rise of AI. Entry-level roles are now becoming much harder to break into, particularly for university graduates'.

Focus group participants, interviewees and attendees at the workshop reflected similar perspectives to survey respondents. They suggested that **AI and automation are likely to**

drive both job creation (e.g. in roles to develop and manage their organisation's use of AI and integrate it into business operations) **and job displacement** (e.g. in entry-level roles such as junior software developers as well as potentially some middle management roles):

'The roles for individuals who lead and design AI efforts are likely to grow quickly and massively...'

Stakeholders attending the workshop felt that hiring is likely to be healthier for government/public sector tech roles including defence, data centres, green tech, and creative industries (for example the BBC).

Consultees also suggested that **the demand for tech knowledge and skills is growing, and will continue to grow, within other areas of the business or other sectors** such as customer success, marketing, accounting, law and the creative industries. This will include the requirement for an understanding of AI which will be increasingly adopted to perform more routine tasks:

'...If you're not able to get the [tech] roles as easily, you can go into customer success or marketing...Take the skills you have and leverage those to give yourself the edge...There are so many industries that are miles behind when it comes to general tech adoption, let alone AI. And, if people are smart about it, I think there's still a lot of opportunity to weave tech into more roles within a business'

'Because these jobs are going to demand much more knowledge of technology and it's going to be harder for the marketing person or the auditor or the like...so, the people who are working in content management are all [going to be] tech people...It's not all doom and gloom but it definitely looks more like you use your tech base and apply it to something like marketing, like CRM or analytics...'

In addition, some consultees predicted that upskilling existing staff for tech roles within their organisations could become a growing trend. This would be targeted at staff who already had a good corporate and commercial background and understanding of the organisation's products but lacked tech skills. A growth in tech apprenticeships was also anticipated, including within organisations which had positive experiences of apprenticeship training providers equipping entry-level candidates with knowledge and skills in specialist and growing areas such as AI.

Attendees at the workshop also predicted that **AI may become a foundation skill for all**, with non-tech employees more commonly needing to understand what AI tools can do and how to use them.

4.1.2. What might tech hiring look like beyond the next three years?

Consultees did not generally feel confident predicting what might happen over the longer-term. One thing they were certain of was the increasing adoption of AI. **A common view was that AI will lead to the emergence of roles that do not currently exist and will 'redefine what it means to work in the tech sector'**. In the future, roles in a range of sectors could be defined as 'working in tech'.

One perspective was that the adoption of AI may drive productivity growth, stimulate hiring across the UK wider economy and, in turn, create additional tech opportunities. However, not

all consultees shared this optimism, feeling that **the trend towards greater offshoring, particularly by large organisations, may cancel out any potential job growth from advances in AI, and will continue to drive down tech hiring in the UK.** Survey respondents were asked only for their expectations over the next three years.

5. Recruitment into UK tech roles

This section summarises consultees' descriptions of how tech roles are recruited and their perspectives of how recruitment may change in the coming years, including in relation to the use of contractors, and the importance of equality, diversity and inclusion.

Summary

- Consultees reported a growth in skills-based hiring, with the recruitment process incorporating two key stages - assessments of both technical and essential skills (with a range of skills referenced, including: cognitive skills such as problem solving; socio-emotional skills such as collaboration and leadership skills; commercial awareness; and character traits like resilience and curiosity).
- Employers reported that they were currently receiving large numbers of applications for UK vacancies, particularly at junior levels. To narrow the field, they have used strategies such as pre-application questions, actively seeking out suitable applicants via social media and seeking recommendations from contacts.
- There has been a steep decline in the recruitment of contractors in the UK due to IR35, the off-payroll working rules, although contractors may still be hired when specific expertise is sought or there is insufficient time to go through a recruitment process.
- The vast majority of consultees reported that their organisations placed significant emphasis on having a diverse workforce to gain different perspectives and a competitive edge. They used a range of strategies in recruitment such as blind screening and training on unconscious bias.

5.1. What does a typical recruitment process for a tech role involve?

Attendees at the workshop reported a growth in 'skills-based hiring' and focus group and interview participants expanded on what this meant. **Consultees commonly incorporated two distinct stages into the recruitment process in order to assess technical and essential skills.** This included:

- a technical test or scenario(s) to assess coding ability and technical skills, and, increasingly, how applicants communicate what they have done
- interviews, and individual or group scenarios/tasks, to explore essential skills and behaviours (e.g. communication, problem solving, teamwork, and presenting) and cultural fit.

Sometimes a cognitive abilities test or psychometric test was also administered.

Consultees also reported setting applicants tasks to assess essential skills as a strategy to differentiate between candidates. With applicants increasingly drawing on AI to help with their application, consultees reported that it was more difficult to assess applicants purely by looking at their CV and application letter:

'It's not so much about the CV and the interview questions because that can easily be created [by ChatGPT]. So, what can you do to really understand people's mindset?

How do you go about asking them questions that require them to come up with solutions to problems?’

The dearth of vacancies has led to employers receiving large numbers of applications for tech vacancies, particularly at junior levels. For example, one consultee mentioned receiving more than 600 applications for a role within 24 hours of advertising it, whilst another reported 450 applicants over a similar time period. Other comments included:

‘I just had to sift through [CVs for] a front-end developer role that I’m hiring into my team and I rejected around 250 CVs last night’

‘It’s not unusual to have 1,000 applications in the first few days of a job being posted’.

This has led some organisations to ask applicants to answer a series of questions related to particular experience and skills required for the role before they apply, to narrow the field. Some also consider qualifications during the screening process, even though they are often not a pre-requisite for roles. Several consultees also mentioned using LinkedIn to filter applications by finding out more information about applicants.

Some focus group and workshop attendees reported actively seeking out people who might be suitable for upcoming roles, for example by directly contacting suitable recruits through LinkedIn, searching for people with impressive GitHub portfolios and seeking recommendations from contacts. This helped to save time sifting through hundreds of applications, many of which came from applicants who did not match the job specification.

The upside of the current recruitment situation is that businesses can often recruit a more skilled person who is more appropriate for the role than previously. However, on the more negative side, there were reports of tech graduates coming out of university applying for jobs for over a year before they were successful or going into related fields like customer success or consulting because they could not secure a tech role.

5.2. To what extent are tech contractors employed?

Consultees commonly described a steep decline in the recruitment of contractors in the UK, often due to [IR35](#), which are off-payroll working rules designed to stop people working like employees but being paid through an intermediary to pay less tax and national insurance (NI). They reported that IR35 has made contracting less appealing for individuals, increased day rates, and added a layer of complexity that organisations do not want to deal with. This has led to more fixed-term contracts and organisations retaining skills and experience in-house, which was perceived to be beneficial. However, consultees reported that there are still situations in which their organisations employ contractors, for example when contractors have specific, sought after expertise, or when there is an immediate staffing demand and insufficient time to go through a recruitment process:

‘...in terms of contractors at an individual level basis, that’s massively declined...We’ve got eight or ten now compared to before [five years ago] it was 50 plus’

‘You don’t want to really lose those skills when you lose the contractor...So my preference is to go for permanent staff but, sometimes...we’ve got to take contractors

when we've got an immediate gap to fill, which I've had several of recently. So, I've got quite a few'.

Organisations were, though, often still employing contractors in other countries where there aren't 'hurdles to jump through' and costs are often lower:

'We tend to have contractors from offshore...we could get five instead of three developers, for example. And so that's the driving factor'.

In some cases, consultees reported having managed service arrangements where they contracted out a whole service, with contractors' performance measured using key performance indicators (KPIs).

5.3. To what extent do organisations focus on equality, diversity and inclusion?

The vast majority of consultees reported that their organisations placed significant emphasis on recruiting a diverse workforce, primarily by attracting a diverse candidate pool and reducing bias in application screening and assessment processes, with hiring decisions then ultimately based on which candidates were best suited to the role:

'We're still wanting to hire the best kind of candidate, most suitable candidate...It's about making sure those recruitment processes do promote and do allow a diverse range of candidates to come in'.

Perceived benefits of having a diverse workforce were the different perspectives and 'diversity of thought' that this brings to solving problems from 'a holistic point of view', as well as innovation and meeting client needs and giving the organisation a 'competitive edge':

'Having a diverse workforce or diverse team allows us to think differently about different problems we are trying to solve'

'If you're trying to build products and you're going to sell those products to everyone in the world, and you're only hiring loads of people from the same set of universities, they're not going to be very good at relating to what does everyone else want...'

A gender balance was perceived to be a particular issue in the UK, with tech roles being largely dominated by men. This was perceived to be less of an issue in countries where there was less of a gender imbalance in the choice of STEM subjects and careers. However, some consultees felt that, in recent years, inroads had been made in the UK in terms of more females wanting to go into tech roles. Consultees reported tracking the gender balance within their workforce, the proportion of their team(s) from the global majority, and the extent to which they reflected the community they were drawn from.

Consultees reported a range of strategies that they use to try to encourage a diverse range of applicants to apply for tech roles. At the initial stage, this might involve the Diversity and Inclusion team reviewing job descriptions (JDs) and templates for JDs, and the platforms on which roles will be advertised, to ensure they will attract a diverse pool of applicants. Several consultees reported that they shared vacancies with various communities, organisations and job boards such as Women in Tech, Code First Girls, Diversity in Tech, Evenbreak and myGwork. One consultee also referred to targeting the

advertising of vacancies at particular groups (e.g. deaf, neurodivergent or disabled people) in the initial stages before opening them up. Another reported offering guaranteed interviews to applicants with disabilities or who were neurodivergent, where they met the criteria for the role. Some consultees had a constant pool of people who they kept ‘warm’ and could go to when vacancies arose. However, others acknowledged that their organisation did not undertake these activities.

A smaller group of consultees reported encouraging a diverse talent pipeline into tech by targeting primary and secondary schools, apprenticeship events and bootcamps to showcase careers within the tech sector, facilitate enrichment activities on coding, or offer shadowing programmes:

‘So, we have a partnership with multiple schools and then...we’re talking about the apprenticeship programme, so they don’t need a university degree for that. We will give them like a day in the life where we bring them into the organisation and give them opportunities to broaden their mindset about what tech is about’.

In some cases, girls were targeted by these activities and consultees often reported targeting schools in socio-economically deprived areas. Messaging was often targeted at teachers as well as students:

‘The focus was around trying to educate teachers on the vast array of roles that there are in technology, the influence that they could have on a young person’s earnings potential, and to raise teachers’ understanding but also raise aspirations of young people’.

One consultee mentioned helping young people prepare for video interviews - which are now a common part of the application process - by developing their communication skills and confidence.

When screening applications, one strategy frequently reported by consultees was ‘blind screening’ i.e. reviewing applications after redacting personal information. Others mentioned presenting recruiters with a ‘balanced’ shortlist. However, a key barrier to these strategies was applicants not commonly including personal information on their application forms. One consultee commented that only 10 per cent of applicants shared personal information at the application stage. When large numbers of applications were received, recruiters said they might also consider applicants’ qualifications as a criterion for sifting.

To ensure a fair and unbiased assessment process, consultees often reported recruiters being trained in unconscious bias. A small number of consultees also mentioned that their organisation administered upfront assessments of applicants’ cognitive skills to help reduce bias. One consultee mentioned releasing competency questions in advance of the interview stage to reduce the anxiety of neurodiverse candidates. A key focus of the assessment process was on an applicant’s experience, technical and essential skills. Some consultees felt that the move to assessing essential skills had supported the diversity agenda. During the recruitment process, many organisations track applications via an applicant tracking system (ATS).

Some mention was also made of seeking to improve diversity at different levels within the existing workforce, for example by providing leadership mentoring for women.

However, there was variation in how organisations tackled diversity, and a minority of consultees commented that their organisation, or some hiring managers within their organisation, did not have a focus on it:

‘We have absolutely no appetite in the business to improve diversity, sorry to say, I just want to be honest because that’s what we are here for’.

6. Qualifications required for UK tech roles

This section explores the views of consultees, as well as survey respondents, on their requirement for qualifications for tech roles and how their perceptions of the value of qualifications are changing.

Summary

- Whilst our earlier analysis of job advertisement data suggests UK tech job adverts are increasingly likely to reference qualifications (Bocock, Scott and Tang, 2025), most consultees and survey respondents perceived the value of qualifications, particularly degrees, to have declined. Some consultees suggested this contradiction might be attributable to the fact that employers often use degrees to screen when they are ‘swamped’ with applications. Furthermore, whilst degrees are often not a pre-requisite for roles, they can be a ‘nice to have’, evidencing the development of a range of essential skills.
- Where consultees did not specify degrees as a job requirement, the aim was often to open up opportunities to broader socio-economic groups. They welcomed self-taught applicants who had not had the opportunity to go to university. Rather than qualifications, these consultees looked for relevant experience and technical skills required for roles, alongside a range of commercial and essential skills and ‘a learning mindset’.
- Several consultees felt that the value of degrees is declining due to a mismatch between university curricula and industry requirements.
- Some consultees preferred training apprentices, rather than hiring degree-qualified applicants, due to the relevant practical experience apprentices accumulate.
- Those who did require degree-level study for tech roles were often from larger organisations. They described running graduate programmes (and degree apprenticeship schemes) to bring in entry-level software developers.
- A number of consultees reported a growing need for high-level qualifications (e.g. Masters and PhDs). This was particularly the case for roles in AI engineering and machine learning and other data science fields.
- Most consultees were interested in relevant certifications as it demonstrated that candidates knew about/were interested in the product and were committed to their own learning. However, like degrees, they do not indicate future success in a role.
- Looking to the future, consultees suggested that the pre-requisite for applicants to have relevant degrees and certifications is likely to either stay the same, or decline, with other forms of learning being increasingly valued. However, the effects of changing perceptions regarding the value of a degree may be overwhelmed by the effects of increasing competition for roles, with qualifications an easy filter to default towards. Regardless, consultees suggested experience and skills will matter most. Apprenticeships are also likely to retain or grow their appeal.
- Specific qualifications and certifications relating to AI will become increasingly attractive to employers.

6.1. To what extent is a degree a pre-requisite for tech roles?

Consultees provided mixed responses when asked if they required a degree for tech roles.

Whilst our earlier analysis of job advertisement data suggests UK tech job adverts are increasingly likely to reference qualifications (Bocock, Scott and Tang, 2025), **most consultees suggested that degrees are not now a pre-requisite for many tech roles** because they are not perceived to be an indicator of success in role:

‘When I started out, your qualifications were essential. Now, we’re hiring people where the only qualification we’re looking at is just their level of knowledge. We’re not looking for any kind of formal accreditation’

‘So, it’s very rare we would require a certain degree or qualification, but they are certainly nice to have but it’s rarely, if ever, a must. We’re looking for experience and the skills that come with that’.

However, some consultees reported that degrees may be used to screen applications when recruiters are ‘swamped’ with applications. This is because they can be seen as a ‘nice to have’, evidencing the development of a range of essential skills. Focus group participants and interviewees reported that they demonstrated that an applicant can ‘commit to something for a certain period of time’, overcome barriers, retain information, deliver on time, and, potentially, work in teams. Key stakeholders stressed that you gain much more from going to university than a degree. It can expose you to a broader range of people from different backgrounds, open your eyes to different opportunities and increase aspirations, provide access to networks and job fairs that can help you find employment, provide new experiences and access to sporting, cultural and other societies, and develop resilience and important life skills such as independence.

One consultee neatly summed up these contradictory messages:

‘I wouldn’t say that they aren’t important [degree qualifications]. I just think people are being more open-minded to those that don’t have them, that it’s more about your ability to prove yourself and how you present in an interview than the qualifications that you have. That being said, it can be easier to get the interview in the first place if you have a qualification...’.

This may help explain the apparent contradiction between the widely held belief that degrees do not hold the value they once had, and the results of our earlier analysis of job advertisement data, which suggested that qualification mentions, predominantly for degrees, were rising in tech job advertisements (Bocock, Scott and Tang, 2025). As well as recruiters using qualifications to screen increasingly large volumes of applicants for roles, this contradiction may also be explained by recruiters hiring for more roles in specialist areas like AI and machine learning which require applicants to evidence they have high-level technical knowledge in the relevant domains.

A number of consultees reported that they were not specifying degrees as a job requirement in order to open up opportunities to broader socio-economic groups, which was beneficial for diversity:

'Because there's an argument for, you know, if you're prioritising qualifications, are you excluding those from certain socio-economic backgrounds who haven't had the opportunity to do so [go to university] but maybe are equally capable?'

'It doesn't mean that someone without that qualification [a degree] can't do the job equally as well or even better, depending on what their practical experience is or how they go about learning'.

Most consultees reported welcoming applicants who had not had the opportunity to go to university and were self-taught, and may have attended bootcamps, completed free/low-cost courses (e.g. Udemy, LinkedIn), gained knowledge through YouTube videos, and/or put together a portfolio of their work/projects to demonstrate they had the knowledge and skills to undertake the role, all of which were reported to be growing trends:

'They know that these degrees, by the time you get it it's behind the curve. So, you look for people who maybe don't have a degree but are just able to give a whole portfolio of stuff they've created off their own back and, increasingly, that's what I've seen in terms of the hiring pattern at my company'

'We will ask if they've got any personal experience, done their own project and we might ask about Git repositories and things like that to have a look through what they have done'.

Rather than defaulting to particular qualifications, consultees suggested that their organisations looked for the relevant experience and technical skills required by the role(s) for which they were recruiting. This could be knowledge and expertise in using programming language(s), applications, tools and products:

'We're looking for experience and the skills that come with that...experience can often bring more value because it means people have had real life exposure to working with X, Y, Z'

'...Even with a Masters degree, it's hard without any practical work experience that you've done to get yourself into an opportunity'.

The length of experience was perceived to be less important than its relevance to the role.

Employers also looked for a range of commercial and essential skills (see section 7.2 for further details), **and 'a learning mindset'**, which they felt did not necessarily need to be demonstrated by having completed university study:

'I do look for evidence of someone that's continuously learning, but what sources they use and how they do their learning is less relevant. It's just evidence of the continuous learning mindset and I can apply those skills. But, where that comes from, whether that's a university or something else, it's less important'

'Are they doing stuff off their own backs to continue their development? How are they learning especially around the AI side of things?'

Consultees indicated that, the more senior the role, the less they focused on qualifications, with experience taking precedence. Consultees provided examples of excellent colleagues who did not have a degree, as well as those that did but were not specifically hired because of it:

‘And, then, for more senior roles, it will be experience over the degree’

‘Coincidentally, everyone on the team has a degree but they are not hired because they have a degree...Everyone has experience but not necessarily in the roles that they are doing, but I believed they could grow into roles and be excellent in areas they didn’t know...It’s very much about mindset’.

Some consultees felt that the value of degrees is declining due to a mismatch between university curricular and industry requirements. Consultees felt that many universities were ‘behind the curve’ and not fast enough in evolving their course content to ensure graduates have the knowledge and skills in highest demand. There were comments that many degree students were not acquiring sufficient programming experience in the languages employers required or were not gaining experience of using relevant tools. This was set against the growth in alternative pathways, including apprenticeships [at degree level too], through which people were perceived to be developing the required knowledge, skills and experience:

‘I think one of the reasons why I suspect there’s a shift away from having degree qualifications is I think universities are very archaic in their curriculum. So, generally, apprenticeships are definitely more up-to-date, what’s currently going on in the industry, what tools are being used, what software etc.’

‘There’s probably a bit of a mismatch with like graduates [of Computer Science]. They spend so little time able to interact with employers, understanding the decisions they need to make in order to be employable...Are they actually doing anything that is going to give them the applied experience or even the language? Do they know which ones they need to do?...They’ve got no production programming experience’.

As might be expected, **graduates who have undertaken degrees that develop relevant practical experience are viewed as more attractive to recruiters**, particularly when practical work is documented via a GitHub repository or something similar.

One consultee estimated that it would take around six months to provide a graduate with the required applied experience for a role, which could be more cost effective than recruiting someone more experienced. However, others felt that this was not feasible, particularly for small and medium-sized businesses:

‘And, for some of the big businesses, that does kind of make sense but there’s small and medium enterprises where the cost of training for six months and getting someone up to speed is just so prohibitive that you would probably just pay for a more experienced person’.

Training apprentices was perceived by some consultees to be a more appealing option to hiring degree-qualified applicants, because of the relevant practical experience apprentices accumulate. Several consultees reported training new recruits via apprenticeships, with a number running large apprenticeship programmes, including degree apprenticeships. One consultee reported that some apprenticeship providers were providing more AI and automation specific training at level 7, which was beneficial.

A key issue noted by some stakeholders was the outdated advice that young people are receiving on careers in tech from the National Careers Service and schools. This can

often focus on traditional academic routes rather than raising awareness of vocational/technical routes, including apprenticeships, and other self-taught routes into tech careers.

The group of consultees who reported that they required degree-level study for tech roles were often from larger organisations, but not always:

‘Anybody that comes in for a role that’s specifically to be a software developer either has to come in with a qualification like a degree or they could come in through our [degree] apprenticeship scheme and develop that way’.

They described running graduate programmes (and degree apprenticeship schemes) designed to bring in entry-level software developers. They invested time training them to code, using particular software and tools, and manage projects before they placed them in teams and expected them to be productive.

Consultees requiring degrees often reported that they were less interested in the institution applicants had attended and their degree classification than in the past. In addition, some looked for a STEM degree, rather than a Computer Science degree specifically.

A number of consultees reported a growing need for high-level qualifications (e.g. Masters and PhDs) in AI engineering and machine learning, given the ever-increasing importance of these areas. Some also referred to the need for data scientists to have completed a PhD or Masters.

There was also a group of consultees who felt that, although universities might be behind the curve now, they will adapt their curricula and degree-level study may become more important in the future hiring process. They predicted the need for a higher-level of understanding and skills for entry-level jobs which involved working alongside AI agents, which universities could teach.

6.2. How are technical certificates viewed?

Consultees were asked if they specified, or were interested in, potential recruits having completed technical certificates. Similar to degrees, there were differing views.

Most consultees were interested in candidates having a relevant certification as it demonstrated that they knew about, and were interested in, the product, as well as showed initiative and the candidate’s commitment to their own learning and development:

‘If you have someone who hasn’t gone to university, but they’ve maybe gone out and done certificates in Microsoft or Azure, or something like that, it shows they are committed to development and learning and that in itself is a trait that organisations value. It shows initiative, that they are wanting to grow and learn’.

However, like degrees, **certifications were felt to only provide part of the picture.** They do not indicate how the candidate will behave in a real-life scenario and fit into a team. So, in the interview, employers will explore this and ask for examples of practical experience:

‘...From my experience, certifications just tell me that you read the book and managed to pass the test. But...what can you do in a real-life scenario?...It plays a part in getting you maybe at the first stage of the interview and then we’ll see’.

Other consultees did not look for certifications and some reported being prepared to pay for the right candidate to acquire them where they would benefit them in their role.

The range of technical certificates commonly mentioned included: Microsoft Gold or Azure, Google Cloud and other cyber certifications, CEH (Certified Ethical Hacker), Agile DSDM (Dynamic Systems Development Method), AWS (Amazon Web Services), Data Bricks, Salesforce, ServiceNow, Scrum Master, Tableau, Power BI, and ISTQB (International Software Testing Qualifications Board) certified tester. Some consultees particularly singled out the perceived value of Salesforce and ServiceNow certifications.

6.3. What are the future qualification requirements likely to be?

Consultees generally felt that the pre-requisite for applicants to have relevant degrees is likely to either stay the same, or decline, with other forms of learning being increasingly valued. Exceptions to this would be when organisations are recruiting for a graduate programme or where roles require very specific knowledge, for example in AI, machine learning or data science, in which case recruiters might look for higher-level qualifications such as a Masters or PhD in relevant subjects. Technical certificates are likely to continue to be welcomed but will not always be specified. Despite suggesting that the value of degrees would decline, some consultees suggested that, in a competitive market, qualifications and to a lesser extent certifications, might be increasingly used to screen applications, even though having a degree was not necessarily thought to demonstrate an applicant can apply their learning in the workforce or fit into a team.

Consultees predicted that more people entering the tech sector will be self-taught in the future. Within the recruitment process, consultees suggested they would continue to place the greatest emphasis on experience and skills, and a commitment to learning and development, which can be gained in a range of ways. Apprenticeships are also likely to retain, or grow, their appeal.

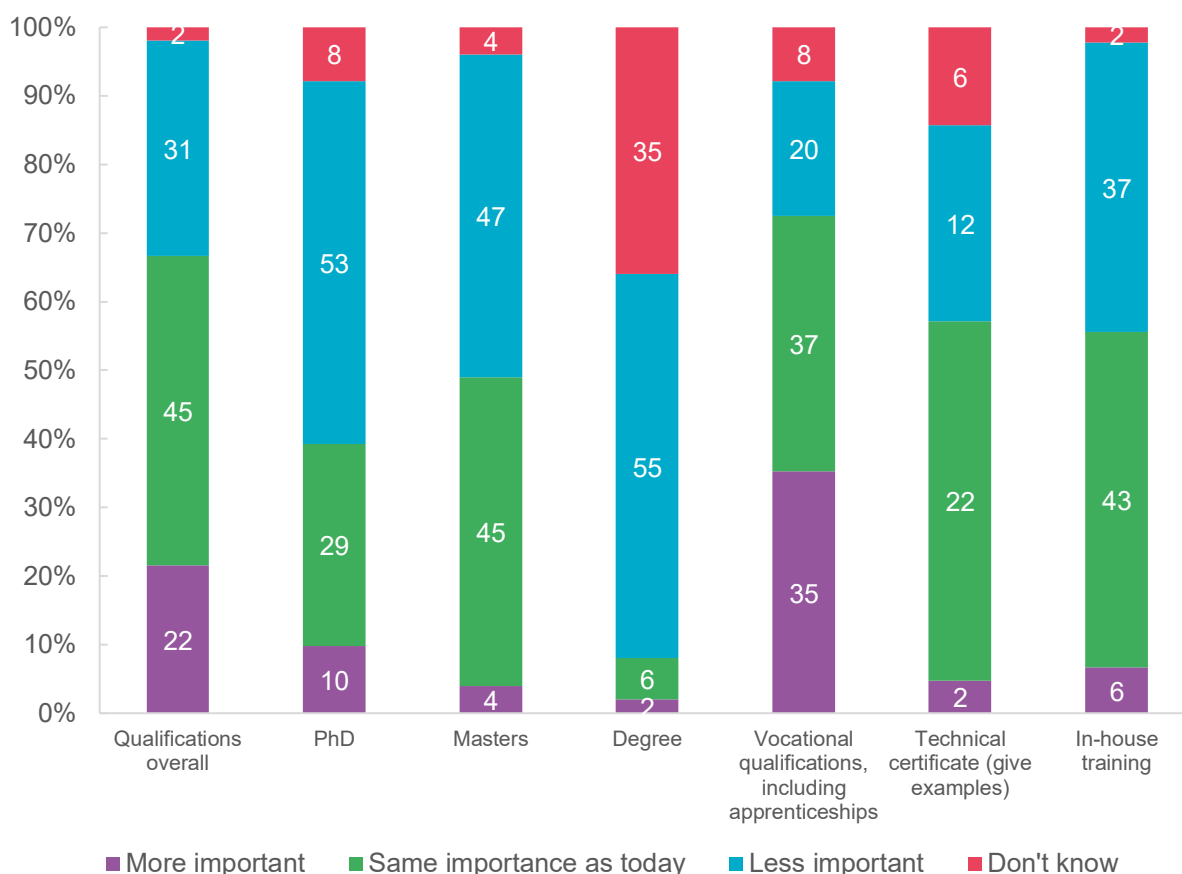
Consultees felt specific qualifications and certifications relating to AI will become increasingly attractive to employers:

‘I reckon we’ll probably have more AI companies that may be putting out their own certifications and qualifications and, essentially, that’s probably what we’ll be then using as a form of recruitment. Like, do specific individuals have those AI qualifications from those particular companies? It’s just a prediction...’.

Around a half of the survey respondents indicated that qualifications would be as important over the next three years as today (45 per cent), but more thought they would be less important (31 per cent) compared to the proportion that thought they would be more important (22 per cent), as shown in Figure 7 below. Survey responses also suggested that the relative value of different qualifications may be changing; **over half of survey respondents thought degrees will become less important (55 per cent), and this was closely followed by PhDs and Masters qualifications (53 and 47 per cent respectively), whereas only a fifth of respondents (20 per cent) thought vocational qualifications,**

such as those gained via an apprenticeship, would become less important. More respondents were inclined to agree that technical certificates and in-house training will become less important, rather than more important, with the largest proportion feeling their importance will remain the same. These expectations largely reflected the views most commonly held by other consultees, that it is applicants' experience and skills which matter most to tech employers, and that qualifications at most levels - particularly degrees (but not apprenticeships) - are not keeping pace with developments in the sector.

Figure 7: Respondents' expectations about the changing importance of qualifications over the next three years



Source: NFER and The Hg Foundation Tech Recruitment Survey. N=51

7. Skills required for UK tech roles

This section explores the views of consultees, as well as survey respondents, on skills requirements and how these are changing.

Summary

- A given for software developer positions is that applicants have coding skills, ideally in the specific languages required for the role, although there was an indication that some roles utilising AI coding agents require less in-depth coding knowledge and skills. Some organisations also look for expertise in specific systems, applications and tools.
- Organisations are increasingly looking for new recruits who have knowledge and skills in AI, machine learning and data science.
- Tech/AI skills are becoming more important in non-tech roles, for example in sectors such as accountancy and law, where AI can be used to undertake more routine tasks.
- Consultees and survey respondents identified a range of commercial and essential skills, and character traits, which are growing in importance, and which become more critical as people progress into leadership and management tech roles. These skills and capabilities, which need to be underpinned by strong communication skills, include:
 - problem solving and strategic thinking
 - resilience, adaptability and curiosity – including a desire to grow, develop and upskill
 - leadership and collaboration
 - creativity and idea generation
 - business acumen/commercial awareness
 - emotional intelligence
 - focus on delivery and outcomes.
- Cultural fit is also vital, with organisations seeking tech recruits who have the attitudes and essential skills aligned with their organisation's mission and values and who would fit into the existing team.

7.1. What tech skills are looked for?

Solid coding skills, ideally in the specific languages required by the role, were viewed by consultees as a 'given', but some consultees also suggested particular roles are becoming less reliant on these skills, given the increasing role of AI coding agents:

'We are looking for more people who are more skilled in low code. So, we've taken on quite a few people who've come from business analyst and testing roles, and they've moved into that kind of low code development space because it is somewhat easier to do work on a platform like ServiceNow where a lot of the heavy lifting is done for you. You don't have to have massive amounts of knowledge in terms of writing code'

'You don't need the best knowledge of a coding language by heart. You need to apply it into multiple different places and multiple different projects...AI can complement an already bright individual who knows the application process, knows the business process to these coding languages and can use AI'.

Applicants with expertise in a different coding language to that required by the role may be considered if they can demonstrate their flexibility and desire to learn a new language.

A wide range of programming languages and frameworks were referenced including: Python, Java, Angular, JavaScript, Swift, C#, Scala, Kotlin, HTML, CSS, R and PHP.

Some consultees also commented on rising demand for expertise in specific systems, applications and tools. Examples included: software development and applications tools and frameworks such as .net, Jira, Docker, Kubernetes, Azure, OutSystems and Spring; project management methodologies/frameworks and platforms such as Agile, DAD (Disciplined Agile Delivery) and ServiceNow; enterprise resource planning software like SAP (Systems Applications and Products); team working tools like Trello, Slack and Confluence; data processing and engineering tools like Spark, Kafka and Databricks; programming languages for data science such as Python and SQL; business analytics tools such as Tableau and Microsoft Power BI; CRM systems such as Salesforce and CiviCRM; tools to exchange data between systems, APIs (application programming interface) and databases like JSON; user interface technologies like React; Native mobile for building phone apps; cloud computing platforms such as AWS (Amazon Web Services) and Microsoft Azure and Google Cloud Platform; web development tools like Ruby on Rails; programmes for networking solutions like RUCKUS; coding assistants that work with large language models (LLMs) such as GitHub and Copilot; and other techniques that combine AI with external knowledge sources such as Retrieval-Augmented Generation (RAG). One consultee commented that there had been:

‘a shift towards people who’ve got those more specific tools and experience on CVs when they’re applying. And so that experience tends to be broader... Now there’s a lot more tools and systems available out there that people are getting exposure to’.

Some consultees reported that they brought people in with the programming ability or potential and trained them on the required tools and applications:

‘We can bring people in from any background, but they need to be trained on our tools and there’s so many tools...even from the very simples of like Slack and Jira...We had to amend and adapt our onboarding to make sure they get that very basic training’.

Cybersecurity was another skill which some consultees commented on adding to their job descriptions, and which was perceived to be becoming everyone’s responsibility.

Organisations are increasingly looking for new recruits who have knowledge and skills in AI and machine learning, which can be capitalised upon to solve problems and improve processes. A number of consultees reported finding it hard to find people with these skills:

‘Most of our projects are incorporating different AI tools to do different parts of what we need in terms of the business problems. So...it will be that aspect of being able to use different AI tools in different capacities and probably the integration of those AI tools with systems that are already in place’

‘The job market, for sure, over the past kind of five years has been really looking for people who have got skills in AI or machine learning or, you know, automation and that area is going to continue to grow’.

Data analysis and data science were also reported to be becoming increasingly important given that they are at the heart of AI and its development:

‘Anything around data and data science. That’s also going to underpin everything in AI and AI is going to end up being infused through every product and service’.

Stakeholders participating in the workshop also noted that tech skills are becoming increasingly important in non-tech roles. In this regard, they referenced sectors such as accountancy and law where an understanding of AI will increasingly be required as it is used to undertake more routine tasks.

7.2. What commercial and essential skills are needed?

In line with our earlier analysis of job advertisement data (Bocock, Scott and Tang, 2025), **consultees identified a range of commercial and transferable ‘essential skills’, as well as character traits, that they looked for in the recruitment process, and which they felt were becoming increasingly important.** This reflects other research by NFER for *The Skills Imperative 2035*, which highlighted a set of transferable skills that are becoming increasingly vital across the labour market, particularly in growing professional and associate professional jobs (Dickerson *et al.*, 2023). The specific commercial and essential skills, and character traits, which were referenced, varied by role. One consultee said:

‘It’s about the attitude, the drive, the personality, those softer skills, depending on the role that you are recruiting for’.

Consultees attending the stakeholder workshop emphasised that essential skills had become more critical due to the rapidly changing job market and job roles.

Survey respondents similarly indicated that they expected tech workers’ essential skills and capabilities to become more important in the future, as shown in Figure 8 below. The skills that respondents most frequently thought would become a lot or a little more important were problem solving and strategic thinking (83 per cent), leadership and collaboration (72 per cent), and resilience, adaptability and curiosity (72 per cent). However, over half also agreed that creativity and idea generation, business acumen/commercial awareness, emotional intelligence, and a focus on delivery on outcomes would become even more important than they are today. This was summed up by one respondent who said:

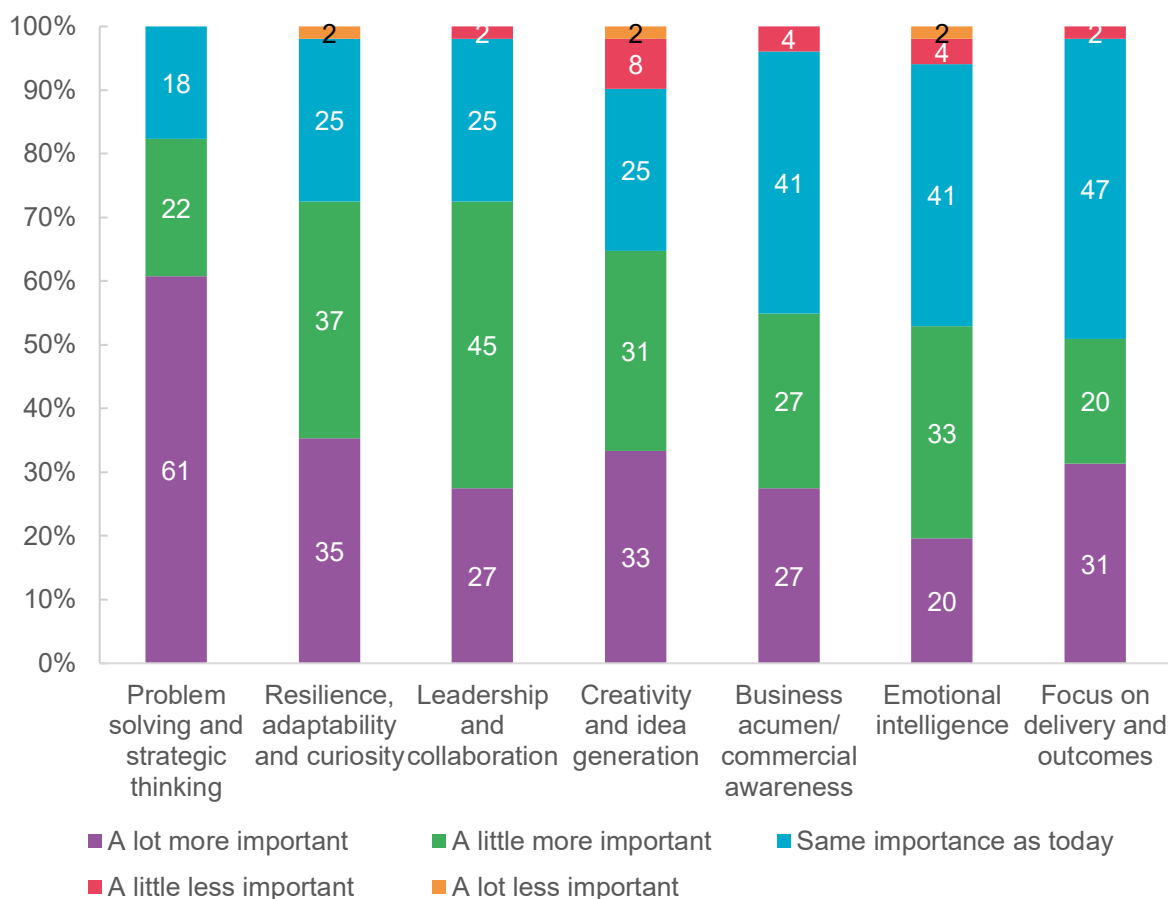
‘One of the biggest tech recruitment challenges today is finding candidates who combine strong technical expertise with the interpersonal skills needed to collaborate, communicate, and lead effectively’.

However, some survey respondents suggested that AI adoption may be eroding tech workers’ essential skills such as problem solving. For example, one respondent commented:

‘Critical thinking...is being lost. New (and even experienced) IT people are going to AI (or even just to Google) to solve their problems without asking whether the solution presented makes sense’.

Other hiring managers indicated that ‘*strong tech leaders with domain experience but also good business acumen and communication skills*’ are ‘*difficult to hire*’ and in ‘*high demand*’, and still others suggested that resilience is tough to find in new hires but critical given ‘*high levels of burnout and attrition in tech roles*’.

Figure 8: Respondents' expectations about changing skills requirements over the next three years



Source: NFER and The Hg Foundation Tech Recruitment Survey. N=51

Although they were important for differentiating between candidates, **consultees stressed that applicants for more junior roles did not necessarily need to demonstrate that they had all of these types of skills**; it was more a case of assessing whether the applicant could be nurtured and grow within the role:

‘You don’t need to have them all, right? As long as you meet most of them... showcase that you’re passionate to learn... They might not have done it in their job, but they’ve done it from training, they might have completed certifications, they might have shadowed someone...’

‘For us, it’s a lot easier to improve and develop their technical skills than trying to change someone’s behavioural skills and mindset’.

Essential skills were reported to become more critical as people progress into leadership and management tech roles.

In focus groups and interviews, consultees elaborated on the essential skills that recruiters are increasingly looking for, as detailed below.

7.2.1. Problem solving and strategic thinking

Over four-fifths (83 per cent) of survey respondents suggested problem solving and strategic thinking skills will become a little or a lot more important in the future. These skills, and critical thinking, were also commonly mentioned by focus group consultees and interviewees:

‘[They’re] often overlooked, but someone being able to analyse the known data, assume some of the unknowns and come up with reasoned paths forward...individuals who think, ‘I don’t know how to do this, but I think I can find a way’...The important thing is ‘how does that person think?’’.

7.2.2. Resilience, adaptability and curiosity

Nearly three-quarters (72 per cent) of survey respondents felt resilience, adaptability and curiosity would become more important in the future than they are today. In focus groups, consultees suggested that this was because the fast pace of change within the tech sector meant that new tech recruits need to be adaptable and comfortable with change and ambiguity:

‘...They need to be adaptable...to be creative, open to change, positive about change, [that] is what we are looking for...A tech career is one of change...It’s one of flexibility’.

Some consultees also mentioned their openness to career changers moving into tech roles if they were adaptable and able to learn. A minority ran internal upskilling programmes for staff wanting to move into tech roles. A particular role referenced by one consultee was hybrid analysts, into which staff from other areas of the business could transition if they had a good understanding of the organisation and its products:

‘If you’ve got the will to learn and you are inquisitive and curious and proactive...and you’ve got some business knowledge and some understanding of how the systems work from a customer or colleague perspective, then that’s actually really, really valuable. And we can teach all the technical stuff’.

A desire to grow, develop and upskill - which some referred to as ‘a learning mindset - were considered very important, particularly in mid-career tech roles in which specialist skills are hard to find but can be developed:

‘So, you have to have people who are incredibly bright and they are able to reskill and retrain themselves...That is one of the things we’re always interested in and one of the things we assess for when hiring people in the middle of their career’.

Consultees also referenced the need for autonomy/independence, an ability to self-manage and prioritise, self-motivation and drive, skills in decision-making, and an ability to deal with stress, particularly in senior roles. The focus on autonomy and self-management was particularly key for remote and hybrid roles.

7.2.3. Leadership and collaboration

Nearly three-quarters (72 per cent) of survey respondents felt leadership and collaboration skills would become more important in the future. In interviews and focus groups, consultees also said skills in collaboration and teamwork were growing in importance, with people in tech roles commonly working closely with colleagues in other functions:

‘The primary things we look for are communication, collaboration, teamwork skills...So, although it’s a tech role, we place emphasis on soft skills because, yes, you’re in a tech role but you work in the squad from day one. It’s all teamwork’

‘[In the past] you had all your operational teams and all your teams servicing the customer and then you had technology tucked away in the corner, not really talking to each other very much. But, actually, you can’t do that now’

‘...It’s not just the coding, it’s trying to elicit requirements like ‘Can they communicate well what they’ve done?’ Because some technical people just write code and can’t really communicate what they’ve done. So, it’s a bit of that soft skills application and then, obviously, ‘Can you work in an Agile team, a Scrum team and so forth?’

For more senior roles, skills in programme/project management, leading and managing teams, and line managing staff, were sought.

7.2.4. Creativity and idea generation

Nearly two-thirds (64 per cent) of survey respondents felt that creativity and idea generation will become more important in the future. This sentiment was echoed by consultees in focus groups:

‘[We are looking for someone] who can...think creatively to solve problems, inputting information into computers to get more powerful outcomes’.

7.2.5. Business acumen/commercial awareness

Over half of the respondents to the survey (54 per cent) felt that business acumen/commercial awareness would become even more important in the future. In focus groups and interviews, consultees reported that they were looking for recruits who were more ‘rounded’, and who possessed business and commercial acumen, and skills in client liaison. They described:

‘...the [increasing] need for IT professionals to have a business mind, a commercial mind, to be able to engage with people outside of tech’.

Consultees suggested that this was because people in tech roles were becoming increasingly integrated within commercial and business teams, needing to understand business problems and find solutions to these problems, and have an understanding of the organisation’s products and services.

They described the need for tech recruits to effectively communicate product features to non-technical colleagues and clients, and build long-term client relationships:

'If I go back ten years ago, we'd be quite happy to have someone who didn't have decent communication skills...to sit at their desk and not really interact with other stakeholders within the business...There is now an expectation...you need to be able to present yourself and be articulate and explain [products] to someone who is non-technical. I think that has certainly evolved'.

7.2.6. Emotional intelligence

Over half (53 per cent) of survey respondents felt that emotional intelligence will become even more important in the future. Consultees suggested this was because tech roles now more frequently require close working with other business functions and interaction with customers. One person commented:

'Quality customer facing technical candidates [are hard to recruit] because most applicants might be technically qualified in the fields we specify but are unable to convey information in an appropriate way to customers'.

7.2.7. Focus on delivery and outcomes

Around half (51 per cent) of the respondents to the survey indicated that a focus on delivery and outcomes would be even more important in the future than today.

In focus groups and interviews, consultees suggested this motivated workers to solve problems and generate ideas autonomously, with minimal direction and supervision.

7.2.8. Cultural fit

Consultees also stressed the importance of 'cultural fit' when recruiting for tech roles, with some considering this as one of the biggest recruitment challenges. This included seeking recruits who had attitudes and essential skills which aligned with the organisation's mission and values, and who would fit into the existing team. This was sometimes referred to as 'values-based hiring'. Consultees did not comment on the intersection between hiring for 'cultural fit' and promoting diversity and inclusion through their hiring practices. One consultee said:

'Whenever we interview candidates, we have role fit - two to three questions - and then we have four cultural fit questions...The cultural fit are more soft skills based in terms of values of the company, in terms of teamwork... To be successful they would have to score the highest in both parts...Before, it was very much [tech] skills driven, but now it's about the values of the organisation and the softer skills...'

8. Conclusions

This report highlights causes of the recent slowdown in UK tech hiring and summarises the future UK tech hiring predictions of hiring managers and senior leaders in almost 100 organisations. It is worth remembering that insights are drawn from a small-scale, primarily qualitative study, and our survey sample was not representative, which makes generalising our findings more challenging. Whilst research participants identified common factors behind the recent slowdown in UK tech hiring, they had different perspectives on the relative weight of these factors, and some research participants worked for organisations which were bucking the overall trends and hiring for more tech roles in the UK. Respondents' future predictions also differed, somewhat reflecting their employers' past and current fortunes and choices, as well as how they thought factors might interact in the future and the net effect this may have on the demand for tech roles in the UK. Overall, there is some uncertainty regarding demand for tech roles in the labour market over the medium to long-term.

Why has there been a sharp decline in UK tech hiring?

Not all consultees had experienced the recent slowdown in UK tech hiring but, amongst the majority that had, the common perception was that a number of factors are behind this: the macroeconomic environment and financial uncertainty, offshoring, and AI and automation. However, even amongst these consultees, there were differing views on the relative importance of each of these factors.

How are current trends likely to evolve in the future?

In focus groups and interviews, most consultees shared the expectation that tech hiring in the UK will continue to decline as businesses focus on increasing productivity and reducing operating costs, including by making increasing use of AI and automation and offshoring more roles. By contrast, survey respondents were more optimistic about future UK tech hiring, with AI and automation the most frequently cited cause of this change (although, readers should recall that our survey sample was skewed towards organisations whose UK tech hiring had grown in recent years, which is likely to have influenced their responses). Overall, it is difficult to say with any certainty whether tech vacancies in the UK will continue to decline or return to growth in the future (and, in either case, one could give way to the other over the longer-term). However, almost all research participants agreed that the increasing adoption of AI and automation will have a major impact on jobs in the tech sector, as well as on jobs in other sectors. It was felt this, combined with increased offshoring, is likely to lead to a further decrease in UK tech vacancies at junior levels and in certain roles (e.g. software development), at the same time as driving up demand for roles that develop, integrate and manage AI in business operations. Tech skills are also becoming foundational across the labour market, with data analysis skills and AI-related capabilities increasingly essential across many occupations, and many workers expected to work confidently with cloud-based tools, manage digital workflows, understand cybersecurity risks, and use collaboration platforms effectively.

How are qualification and skills requirements changing?

When seeking new recruits, employers are increasingly referencing qualifications in job adverts for tech roles, but, conversely, individual hiring managers and senior leaders indicated to us that qualifications, particularly degrees, are no longer a pre-requisite for many roles, with practical experience and essential skills considered most important. These two sentiments may not be in opposition - many respondents indicated that the number of applications they receive per tech job advert has skyrocketed in recent years, with qualifications often used to sift these, even though consultees suggested the perceived value of qualifications has decreased. This suggests degrees, and technical certificates may continue to be an important pre-requisite for young people to enter, or progress into, tech jobs, at least so long as employers are inundated with applications.

Employers are seeking recruits with a mix of technical, commercial and essential skills, which they assess in different ways through the recruitment process. However, most employers appear to be placing a growing emphasis on essential skills, as tech roles increasingly require a sound understanding of a company's products, services, customers and other business functions. Employers are commonly looking for new recruits who have skills in problem solving and strategic thinking, leadership and collaboration, and creativity and idea generation. Also important are strong communication skills and business/commercial acumen. Given roles are changing quickly, especially as AI is increasingly adopted, applicants' resilience, adaptability and curiosity, including a desire to develop and upskill, are also likely to become more and more important. Cultural fit is also key, with recruiters looking to hire people whose attitudes align with their organisation's mission and who will seamlessly fit into existing teams. Many of the organisations consulted take diversity seriously and utilise a range of strategies to encourage a diverse range of applicants to apply for roles and ensure conscious or unconscious bias does not disadvantage these applicants through the recruitment process. However, recruiters' top priority is still to employ the best person for the job.

How can young people best prepare for tech roles?

Young people and others seeking to enter tech roles will need to demonstrate that they have acquired the relevant practical experience, knowledge and skills to enter and thrive in their chosen role. Our analysis suggests that now, even more than before, young people will need to focus on specialisms for which demand is growing, or likely to grow, such as data analytics, machine learning and AI, and cybersecurity. This will require attention to the programming languages, applications and tools that employers seek, and a focus on AI and automation as its importance continues to grow. Those progressing through the traditional university route should seek to gain as much practical experience as possible to stand out in a competitive market.

Demonstrating a commitment to continuous learning and development is crucial. If, in the shorter-term, young people are unable to secure a job in tech, it will be important for them to show commitment to the tech sector by continuing to develop their technical skills. Job seekers are advised to build a portfolio of practical experience (for example code repositories on GitHub, or contributions to open-source projects), join and contribute to relevant networks

and communities (for example, by posting on LinkedIn), maintain a visible professional profile, and remain flexible about routes into their chosen tech role.

Young people from disadvantaged backgrounds and adults who are under-represented in the tech sector may face greater barriers to compiling portfolios and accessing relevant professional networks. Low-income students or adults are also unlikely to have the financial cushion to wait, experiment and pivot as the job market changes, and are less able to afford retraining or extended job searches. In addition, they may lack the family or community connections to secure work experience or engage in projects that they can showcase in a portfolio. Organisations supporting young people and adults into tech roles play a vital role in brokering access to training, work placements, internships and careers advisers, as well as signposting to coding challenges and coding clubs.

Ultimately, young people's success in entering tech roles will rely not only on their formal qualifications, but also on their ability to showcase practical experience, adaptability, and a commitment to continuous learning and skill development in a fast-evolving field.

Building the knowledge base on trends in UK tech hiring

It is important that industrial and education policy are informed by a strong understanding of past and current trends in UK tech hiring, and well-evidenced predictions for the future. The current pace of change in the labour market means that, whilst demand for specific roles and skills may shift rapidly, systematic and timely data on tech employers' behaviour and needs remains limited. Regularly monitoring trends in tech hiring and employers' future intentions could help policymakers and providers ensure there are clear educational pathways and a strong skills pipeline into areas of the tech sector that are growing or emerging, whilst avoiding too great a focus on areas that are contracting or being increasingly offshored. Building this understanding is essential for ensuring that education and skills systems can adapt quickly, support inclusion, and align with labour market needs.

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Appendix: Characteristics of focus group and interview participants and survey respondents

A. Characteristics of organisations in which focus group and interview participants were employed¹

Number of employees

0-10	11-25	26-50	51-250	501-1000	>1000
1	3	3	6	7	17

Sectors

Tech	Finance	Retail & wholesale	Engineering & manufacturing	Real estate	Arts & Entertainment	Law	Public sector / government agency	Business & administration
22	7	1	1	1	1	1	2	1

B. Survey respondents' roles and characteristics of organisations in which they were employed

Of the 51 survey respondents, 28 worked in organisations with its headquarters based in the UK and 23 worked in organisations with its headquarters based elsewhere but which recruited for tech roles in the UK.

Survey respondents' roles

C-suite or equivalent (e.g. CHRO, CTO, inc. CEO)	Board member or equivalent	Management (Technology)	Management (Not technology specific)	Other
24	5	11	7	4

Sectors

Software and IT Services	Financial and insurance services	Education and research	Other
31	9	3	8

Number of employees

0-50	50-249	250-1000	Over 1000
5	11	16	19

¹ Not all respondents indicated the size and sector of their employer, hence the totals across all categories of employer size and sector are not equal to 51.

Annual turnover

Up to £1m	£1m-£10m	£10m-£50m	£50m-£100m	Over £100m	Don't know/ Prefer not to say
3	9	7	8	18	6

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