

STATE OF THE NATION REPORT



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1. INVEST IN DIGITAL APPRENTICESHIPS, NOW!

The government's 2021 autumn budget and spending review was designed to boost the UK economy and to 'build back better' following COVID-19, writes Annette Allmark, Head of Apprenticeships, at BCS. With unprecedented need for digital skills – there's never been a better time to take on an apprentice.

Boost business? Aid UK recovery? Promote innovation? Ensure future growth? A lot is riding on the success of apprenticeships as we emerge into a post-Brexit, post-pandemic world. Alongside significant investment in education and training, the autumn 2021 budget included the first increase to apprenticeship funding since 2019/20 – committing £2.7 billion by 2024/25. The aim? To develop critical economic skills, through high quality, employer designed apprenticeships, where apprentices benefit from 80% on the job training with 20% in a college or learning with a training provider. Apprenticeships are already playing an important role in skills and upskilling in key industries – but that's only half the story. Along with achieving economic recovery and prosperity, the UK also has a challenging Net Zero Strategy to fulfil, as well as ambitious objectives including a role as a leading life sciences superpower.

In order to step up with innovation, skills and leadership, apprenticeships need to deliver at a whole new level of sophistication to address critical economic, societal and world issues.



To support the growth of apprenticeships the government has pledged to:

- › Continue to meet 95% of the apprenticeship training cost for employers who do not pay the Apprenticeship Levy.
- › Provide an enhanced recruitment service for small and medium-sized enterprises (SMEs), helping them hire new apprentices by May 2022.
- › Support flexible apprenticeship training models to ensure that apprenticeship training reflects the needs of employers.
- › Consider changes to training provider payment profiles aimed at giving employers more choice over how the apprenticeship training is delivered.
- › Introduce a return on investment tool by October 2022 to ensure employers can see the benefits apprentices bring to their business.



76% OF BUSINESSES 'LACKED THE DIGITAL SKILLS NEEDED BY THEIR BUSINESSES', BUT 92% ALSO SAID THAT 'HAVING DIGITAL SKILLS WAS IMPORTANT FOR EMPLOYEES'

Many employers have already recognised that apprenticeships pay dividends when developing digital skills to deliver their organisations' objectives. It is also fair to say, that the demand for digital capabilities has never been so great, with the impact of the COVID-19 pandemic accelerating the need for adopting new technologies and, for some organisations, resulting in full scale transformations. During the pandemic, when some businesses were looking to reduce costs, investment in R&D and tech innovations proved more resilient. According to a 2020 survey by McKinsey, during the pandemic, digital interactions between customers across global supply chains accelerated business change in real terms by three to four years.

The speed of digital adoption and innovation has, unsurprisingly, put more emphasis on the need for digital skills, not only for those working directly in an IT and digital role, but across the workforce as a whole. WorldSkills, Learning and Work Institute and Engenuity reported in 2021 that 76% of businesses 'lacked the digital skills needed by their businesses', but 92% also said that 'having digital skills was important for employees'. The need to improve employers and leaders' digital dexterity: for better business outcomes' (Kropp, et al. 2021) was also highlighted; and data analytics was noted specifically as key to preparing people for the workplace (Johnson et al., 2021)

However, are the digital skills needed today really any different from that reported before the pandemic? Research from Johnson et al., 2021 reports that an increased reliance on Big Data and AI, is 'considered so pervasive that it is essential for competitive growth' and significantly we are seeing the impact across the majority of occupations and sectors. In short, the pandemic has been a catalyst for change, and that change is here - now.

Digital apprenticeships in practice

Apprenticeship roles have blossomed into a huge mind cloud of professions in all digital areas across all levels of experience. No longer a 'one size fits all' digital apprentice, the roles are as varied as the employers who have worked hard with the Institute for Apprenticeships and Technical Education (IfATE) to make them. The last two years have been spent, not in coronavirus limbo, but in creating new and varied content for the training and assessment of digital apprenticeships – making them even more relevant to employers' evolving business needs. This new and exciting development in training has led to apprenticeships in highly sought after occupations such as Cyber Security Technician, Data Technician, DevOps Engineer and AI Data Specialist.

While it is exciting to see digital occupations coming to life through apprenticeship training, it can be daunting for many employers who don't know which apprenticeships might best serve their business needs. For employers who are unsure of how to take on an apprentice, there is lots of information about getting started at Recruit an Apprentice on the gov.uk site. Training providers and local further education colleges can also answer any questions you might have – and you can even ask an apprentice!

For smaller employers, who don't pay the apprenticeship levy, the government will foot up to 95% of the financial outlay – so the employer pays only 5% of the training bill. Employers that fully engage in apprenticeships and embed them within their talent management strategy, are most successful in establishing measurable results and seeing a return on investment from the programme.

Growing a pipeline of talent

The demand for digital skills in the current landscape is putting pressure on the recruitment market. In a BCS webinar in February 2022, leading experts in apprenticeships discussed how some of the challenges could be addressed. Andrew Erwich of training provider QA referred to 'the opportunity for employers to shift their focus on recruiting experienced practitioners, to growing and nurturing home-grown talent through apprenticeships', thus expanding the overall pool of available digital talent.

John Banks, Lloyds Banking Group, discussed the dilemma of ensuring that 'apprenticeships are accessible to everyone, regardless of background, educational qualifications or experience'. They currently recruit based on a strengths approach to focus on future potential rather than past experience but are also looking at further opportunities to open up the candidate pipeline and where needed, will continue to support their apprentices to achieve their maths and English as part of their programme.

There has been significant public investment to support progression into the workplace and apprenticeships. In response to the COVID-19 pandemic, the government's 'Plan for Jobs', introduced new training 'bootcamps' to help individuals upskill or reskill from declining sectors and occupations into exciting new careers in IT. Bootcamps have proved successful not only in supporting progression into the workforce and onto apprenticeships, but also in promoting diversity. John McKenna of Firebrand Training has seen at first-hand how the scheme has diversified the candidates coming through to support a more equal gender split than is typically associated with male dominated IT roles. 'This is an opportunity to be built on, providing a vehicle to actively widen participation and diversity across IT apprenticeships.'

Nikki Christie, Deputy Director of Assessment and Quality at the Institute for Apprenticeships, explained how the government is also exploring how to increase access to apprenticeships through flexible models. In February 2022, the government kicked off 'portable flexi-job apprenticeships' in four digital areas including: DevOps, Software Developer, Software Development Technician and Game Programmer. If successful, the model will enable employers to commit to a minimum of three months' training, as opposed to the usual 12 months, providing flexibility for apprentices to transfer their apprenticeship to different employers.

The role of the T-Levels

The government is also taking further action with additional investment given to improve facilities for delivering the T-Level technical qualifications (launched in 2020 and equivalent to three 'A' levels). These relatively new qualifications, which include digital T-levels, provide a stepping stone to apprenticeships through 80% learning in the classroom, and 20% through a work placement (the reverse structure of an apprenticeship). While there has been a mixed reaction to offering T-Levels placements, more employers, including Lloyds Banking Group and BCS, are recognising the opportunity to nurture fresh talent from day one and support T-Level students' progression into the workplace and onto apprenticeships through the new qualifications.

One of the biggest challenges to building a digital skills pipeline, is informing young people of the many varied and exciting careers choices they have in IT. This is an area where the Government's 'Skills and Post-16 Education Bill, which aims to create more routes into skilled employment in the economically important sectors including digital, can really help. A recent amendment to the 2021 Skills Bill looks promising and will legally enforce the Baker Clause, which was put in place to ensure pupils from year 8 to year 13 are informed about technical education and the apprenticeship opportunities available to them. This could be a significant step forward and help prevent apprenticeships being an afterthought or the poor relation to an academic equivalent when, in actual fact, there are multiple case studies of school leavers who have progressed further and achieved higher pay and rewards faster, by taking an apprenticeship route.



DIGITAL T-LEVELS, PROVIDE A STEPPING STONE TO APPRENTICESHIPS THROUGH 80% LEARNING IN THE CLASSROOM, AND 20% THROUGH A WORK PLACEMENT

Thinking ahead – thinking green

COP26 in November 2021 saw nations come together to secure plans for a sustainable future. To echo this need for change, IfATE has put apprenticeships at the very heart of the green agenda. Driven by a Green Apprenticeship Advisory Panel, employer trailblazers are encouraged to apply a new sustainability framework to their development, recognising that every occupation can play a part to support green challenges. Digital apprenticeships have been picked out by IfATE, as having the potential to drive sustainability and to make a positive impact on green targets. Apprentices training in data and AI roles today could be driving leading edge developments in data science for example in modelling climate change, tracking the impact of rising seas, mapping deforestation and more.

While anyone in the further education sector can look back at some of the publicly funded schemes that have come and gone over the years, apprenticeships have stood the test of time. Unlike some traditional qualifications that remain relatively unchanged by the years, apprenticeships never stand still. Apprenticeships are constantly in lockstep with industry, changing as business demands change, bringing in new skills and fresh ideas just where they're needed, just when they're needed. And now with so much investment in place to support UK businesses and apprentices on their journey, and the critical role they can play in skilling and up-skilling, the question really isn't why would you take on an apprentice, but really why wouldn't you?

References:

Kropp, B., Smith, A., and Cain, M. (2021) How to Build Digital Dexterity into Your Workforce, Harvard Business Review

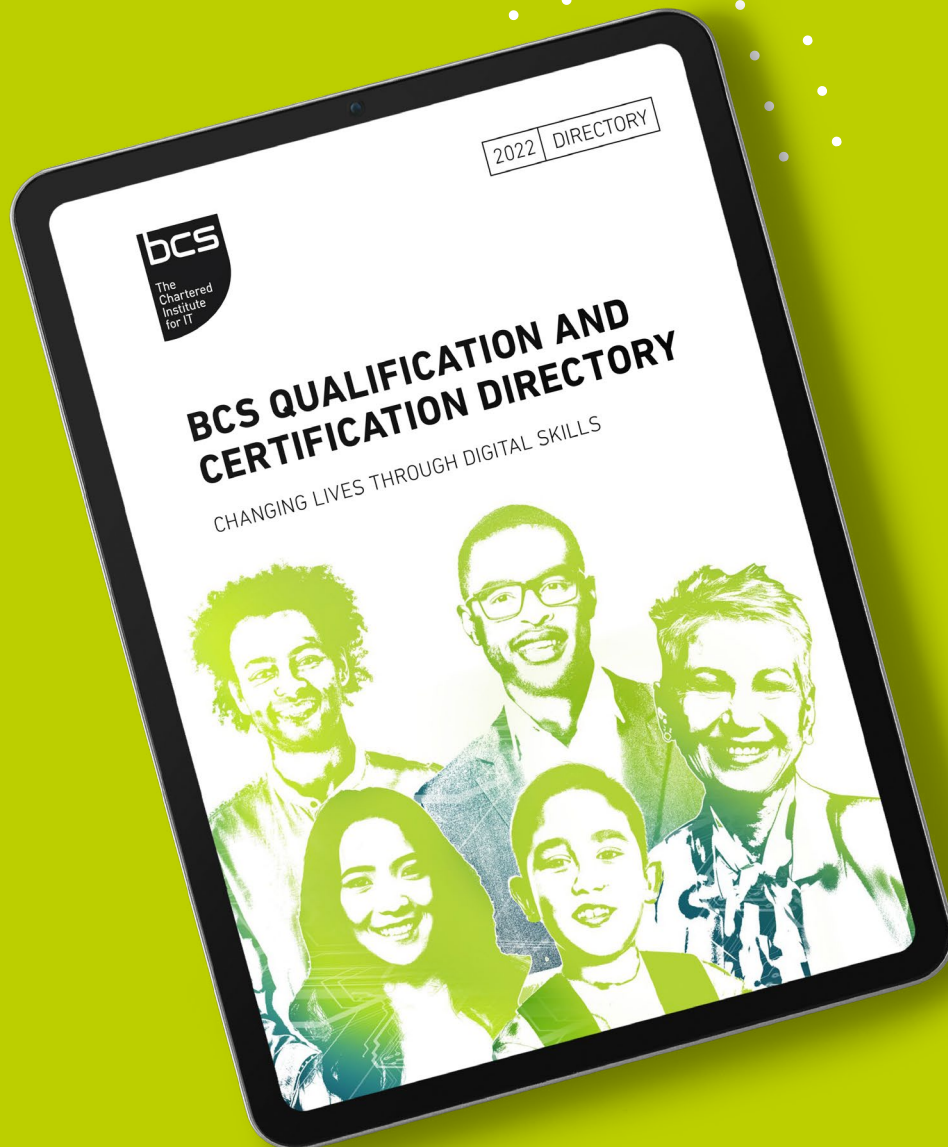
McKinsey & Company (2020) How COVID-19 has pushed companies over the technology tipping point – and transformed businesses forever (contributors to the development and analysis of the survey: LaBerge, L., O'Toole, C., Schneider, J., Smaje, K.)

Impact of Big Data and Artificial Intelligence on Industry: Developing a Workforce Roadmap for a Data Driven Economy Marina Johnson; Rashmi Jain; Peggy Brennan-Tonetta; Ethne Swartz; Deborah Silver; Jessica Paolini; Stanislav Mamonov; Chelsey Hill; Global Journal of Flexible Systems Management (September 2021) 22(3):197–217

Apprenticeships

- › Are based on an occupational standard of competence defined by employer trailblazers and approved by the Institute for Apprenticeships and Technical Education (IfATE).
- › Must involve a minimum of 12 months training, but takes into account 'Recognition of Prior Learning'.
- › Involve 80% on the job learning and 20% structured off the job learning, which can be carried out in the workplace, at a training centre or college.
- › Complete with an 'end-point assessment' which confirms that the apprentice has achieved the level of competence set out in the employer designed apprenticeship standard – BCS is an end-point assessment organisation for digital apprenticeships and has assessed over 14,000 apprentices.
- › Are all set at a different funding level based on the cost of the training and assessment. Funding for each apprenticeship is stated on IfATE's website.
- › Funded through an employer's apprenticeship levy account (if the organisation has a paybill of over £3 million it must contribute 0.5% of it to the levy). The government contributes 95% of the cost of apprenticeships to employers that do not pay the levy.

[View standards here](#)



BCS QUALIFICATION AND CERTIFICATION DIRECTORY

This interactive directory provides the full range of qualifications, apprenticeships, and professional certifications, including the pathways your learners or employees can take, from entry level through to Chartered IT Professional.

[Download the directory](#)

2. EFFECTIVE COLLABORATION – THE KEY TO THE DIGITAL SKILLS AGENDA

BCS's Head of Education Zoe Spilberg analyses the government's autumn budget and spending review. Will it give the UK the skills it needs for the future? What issues are both learners and teachers facing? What can BCS do?

In October 2021 the UK government's autumn budget and spending review took place as the nation was reeling from a period of unparalleled global economic uncertainty and we were facing head-on the multitude of challenges ahead on the road to recovery. The government's expenditure plan resulted in the usual plethora of analysis to unpick its impact across the range of departments and public services – but what does it all mean for the digital skills ecosystem?

As the government's legislative agenda had already demonstrated a sharp focus and commitment to equip society with the skills needed to build the workforce of the future, we needed to see the means to underpin this with a top-class education system, and it followed that in October, the chancellor pledged that 'total spending on skills will increase over the parliament by £3.8 billion by 2024-25, giving us the investment to build a high wage, high skill economy to build on the Lifetime Skills Guarantee.'



AT BCS WE CONSTANTLY HEAR THAT RECRUITING AND RETAINING SKILLED TEACHING STAFF IS A GENUINE AND INCREASING CHALLENGE

We heard about the £6 billion of funding for the DWP over the next three years to help people gain the right skills and earn more; there was targeted funding allocated to the expansion of the National Skills Fund (giving more adults access to free Level 3 courses); a quadrupling of the number of places on skills bootcamps, a promise of more new institutes of technology; extra equipment and hours to support the delivery of T Levels and the launch of a new Multiply scheme to improve numeracy skills across the UK for up to half a million adults.

This was all positive to hear, but what needs to be done to make sure that the funding and resources go where they're needed most to have long-term and sustainable impact? The first issue to look at is around 'levelling up' in relation to the skills gap and the range of initiatives announced, particularly at Level 3 provision. There is a real chance that all these good news headlines will fall into a vacuum if we don't shore up the uptake at Level 2. There are over 6m adults in the UK without a Level 2 qualification at the moment and we know from the Augar Report that 'full Level 2 qualifications yield some of the highest increases in earnings', meaning we need to value them for their inherent value, as well as what they can lead to.

There are many industries - and even more so on the back of the pandemic - that are highly reliant on skills at Level 2 and we need to recognise these as a credible stepping-off point into work, as well as progress towards higher study. It's a positive move that from April 2022, the Level 3 offer will be expanded to include those who are unemployed, or earning under the national living wage, but this offer really needs to be further extended to include Level 2 qualifications for those over the age of 24 as well. Due to de-funding of smaller lower-level qualifications over a number of years, far fewer people have been able to access qualifications in health, digital, construction and engineering than these sectors have critically needed. A lot of the funding now goes to larger full-time courses and that's challenging for people to access for re-training and reskilling when their lives are busy juggling various other demands.

Our skills system, at all levels, needs to meet the needs of adults who will need to constantly upskill and reskill, potentially over five-decade careers, and we need an operational bank of skilled teaching staff to deliver on this. Real-term cuts in the pay of those working in FE has had its impact and 24,000 teaching staff have left the sector in the last ten years. At BCS we constantly hear that recruiting and retaining skilled teaching staff is a genuine and increasing challenge and there is a real need for tangible support for colleges and providers to address this – how can we showcase the FE teaching profession as a career of choice, given the competition from salaries in industry and also the higher salaries within school-based teaching?

There are positive signs on the horizon within the Skills for Jobs White Paper, with a commitment to excellence in teaching and the launch of a national campaign to promote careers in post-16 teaching – but there's no avoiding that there will be further and unexpected challenges post-Covid in that there is the additional aspiration from staff for flexible and home-based working. Given the funding requirements for a set number of hours of face-to-face teaching, this is another barrier to overcome in FE recruitment.

For the first time, we're seeing recruitment and retention of staff being more of a challenge for providers than recruitment and retention of learners and there's a lot of work to be done to ensure we reach a representative and diverse talent pool of prospective trainers and teachers to plug these vital gaps; the more we can channel the funding routes from the spending review into this issue, the more chance we stand to incentivise those with the required skills to teach those coming up from below.

Looking into the geographical scope of the spending review and in terms of encouraging regional business investment and improved productivity, there are positive initiatives: the funding for transport outside London; the Global Britain Investment Fund and the Annual Investment Allowance extension should all help to boost local and regional economies and growing businesses, and the whole levelling up agenda could be a golden opportunity to reduce divides, boost opportunity, and give communities control over their destinies.



FOR THE FIRST TIME, WE'RE SEEING RECRUITMENT AND RETENTION OF STAFF BEING MORE OF A CHALLENGE FOR PROVIDERS THAN RECRUITMENT AND RETENTION OF LEARNERS



But there are still missed opportunities for more radical, sustainable reform to truly level up the entire country. There are too many 'left-behind' communities nationally, and while these communities may end up benefiting from the improved transport infrastructure, many within them don't have the skills, or access to train for the skills, to obtain the jobs even once they are within geographical reach.

Now, more than ever, we need flexible, modular learning programmes in regional contexts to create enduring solutions to evolving employer needs. There is an inherent challenge in doing this when we're in all Covid-recovery mode, but we need to contextualise the learning that takes place in the education system, connect the needs of local employers, and have the appropriate funding to support, so that we're setting the workforce of the future up for success. Effective collaboration is at the heart of this, and the responsibility can't lie just with the employers, or with the education providers, or with the local authorities – a truly joined-up approach with a shared vision will make the difference between success or failure.

The BCS role

The local skills improvements plans are setting out to bring employers and educators together to engage directly, and we all need to ensure that the SME voice is heard in this dialogue. That is a key element in our rationale for setting up the BCS Digital Skills Network – to ensure employers of all sizes are involved in these conversations so we can be confident that the skills system supports the differing needs of smaller employers too. There are real opportunities ahead for positive and constructive collaboration between education providers across the spectrum to deliver the best programmes to the right audiences, but we do need to address the inbuilt complexity that exists within the range of training initiatives available. Whether we're considering bootcamps, traineeships, Kickstart or the Level 3 National Skills Fund entitlement (there are currently nine different ways to fund adults at Level 3) we really need the landscape simplified.

Finally, there was limited attention given to careers interventions in the spending review, and yet we know that careers guidance for young people in particular needs improving nationally and when we think about the pace of change and new roles emerging in the tech and digital space, it's essential learners get valid and inspiring advice about the jobs available to them. Conflicts in post-16 funding still creates blockers to getting clear and impartial advice in schools, and although the Baker Clause (which exists to ensure colleges and training providers go into schools to inform pupils about vocational and technical courses and apprenticeships) was strengthened as part of the Skills and Post 16 Education bill, it really needs to be enforced further. There's more work to be done to continue improving the perception of apprenticeships and technical education with teachers, pupils and, crucially their parents and carers.

In conclusion, despite the ambiguity about which of the financial commitments in the spending review were new, and which were essentially a rebrand of funding that was already allocated, there are grounds for optimism as we see signs that there is a true shared understanding that a comprehensive long-term strategy, that connects the dots of pre- and post-16 education, careers advice and the needs of the employers is the only way to build a sustainable and effective workforce of the future.

3. 2022: SECURITY, CAPABILITY GAPS AND THE PACE OF CHANGE

Do IT professionals agree with IT leaders' assessments of the direction their organisations should take in the next 12 months? What issues do each group consider to be important? Brian Runciman MBCS takes a first look at BCS's 'IT in the organisation 2022' survey.

Nearly ten years ago BCS were asking CIOs what their CEOs were asking of them and whether they thought they could deliver their organisational requirements. More recently we have focused on IT leaders – their needs for the forthcoming year in tech and business. For 2022 we have moved in a more egalitarian direction – we have asked IT leaders and IT professionals their view of the tech, business and skills needs in their organisations.

We wanted to compare the view of IT managers/leaders with those of non-management IT professionals. In this article, and the forthcoming report, we will use the shorthand of IT leaders to include those with management and budget responsibility, such as CIOs, and IT professionals as shorthand for those who are in the profession but without management and budget responsibilities.

Sleepless nights

Over the years we have had interesting answers to the question 'what keeps you up at night?' The top three are consistent between both groups -

Cybersecurity attacks: leaders 38%, professionals 29%
Lack of resources: leaders 19%, professionals 16%
The pace of change: leaders 9%, professionals 13%

For cybersecurity the possibility of reputational damage is perhaps higher up the agenda for leaders, but it is interesting that it is those at the coalface are marginally more concerned with the pace of change.

25%

SELECTED CYBERSECURITY AS THE TOP PRIORITY

Top tech priorities

Leader need comment: 'reliable operational data.'

Professional need comment: 'Operational maturity and efficiency.'

In the full research there are further details on tech priorities – including rankings in a top three. But here we are going to look at the top priority.

Previous years have consistently featured cloud and cybersecurity in the top two, with an occasional swapping of order. This year was no different for IT leaders, with cloud a priority for 27% (58% featured it in their top three) and cybersecurity for 24% (57% in top three). Business process automation was the third top priority – selected by 19% (44% put this in the top three). Whilst AI was top priority for only 10%, its increasing profile was reflected in a top three placing by 27%. And the 'as-a-service-model' was selected by 33% as a top three priority.

Splitting out IT professionals proved interesting: cybersecurity was also the top priority (25% selected it as such, whilst 54% ranked this as a top three item) but a clear second was business process automation at 23% (47% showing in top three). Cloud was third on 16% (with 48% putting this in the top 3).

The other technology and method figures were spread more widely, but there was also a consistent showing for AI and the 'as-a-service' model.

The question we asked IT professionals was of course more speculative - what do they **think** should be prioritised. So, whilst the cybersecurity number was comparable for both cohorts, the gap in both cloud and business process automation is interesting.

Bubbling under in the comments were a few additional thoughts. One IT leader cited the more strategic 'personalisation at scale' as being a key priority. The IT professional comments were perhaps understandably more focused at keeping the lights on: upgrading laptops to Windows 10, improving architecture, focusing on data engineering first and data analysis second, full utilisation of Office365 and data privacy in app platforms.

Resources for 2022 success

Skills and the capability gap were key drivers for the answers in this section. Leadership team concerns figured highly too.

Leaders and professionals provided largely aligned answers. The averaged numbers for additional resource needs: Enhanced IT capability and skills in existing workforce 63%; additional suitably qualified IT staff 48%. Enhanced capability from the leadership team at 42% was only marginally pipped by higher budgets at 43%.

The most telling common number was those who consider they have enough resources to fulfil their organisation's 2022 needs: Only 10% of leaders agreed, and only 9% of professionals.

We asked for further comments on needs and this raised some cultural issues – interestingly these were exclusively amongst the professionals' comments. Four key ones: 'the need for an entrepreneurial mindset in teams', 'empathic management' and, as one responder phrased it 'a seriously inclusive culture.' The final telling remark: 'rather than what we can get away with, a practical implementation of care of users' data.'



THE MOST TELLING COMMON NUMBER WAS THOSE WHO CONSIDER THEY HAVE ENOUGH RESOURCES TO FULFIL THEIR ORGANISATION'S 2022 NEEDS

The capability gap

The capability gap is a complex and multi-faceted issue, so we asked for verbatim comments. We will analyse these more fully at a later date, as quantitative analysis is tricky, but here is a flavour of life at the sharp end.

This is a short selection of comments from professionals:

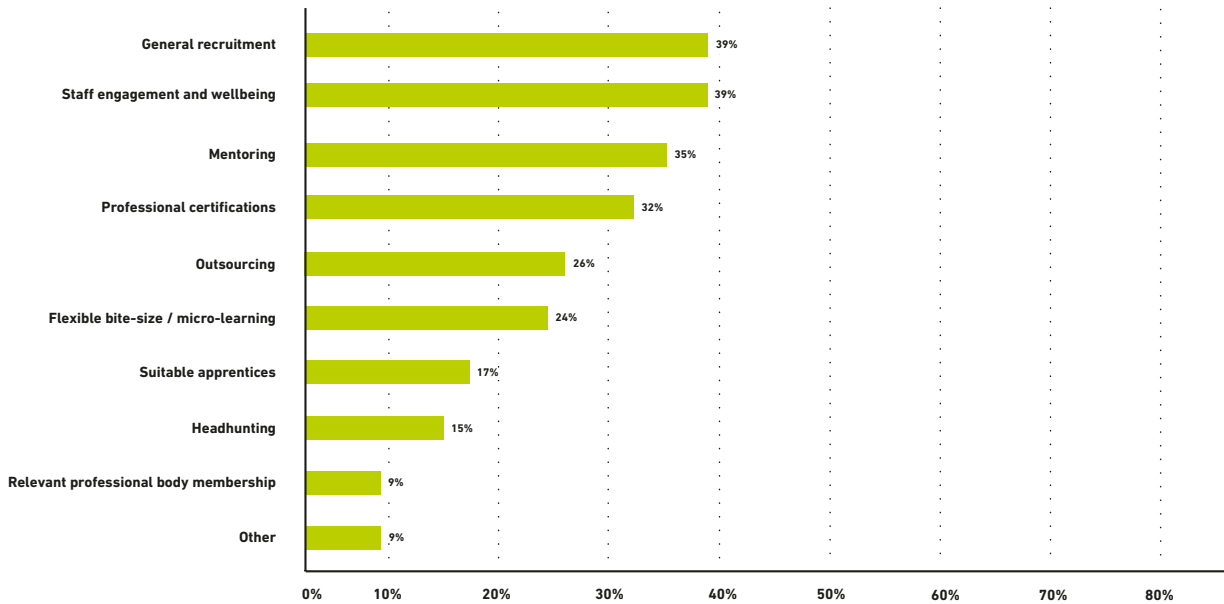
- > Systemic technical risk - cross cutting risk affecting many small and large projects. These need to be addressed at the organisation level coherently and not fixed multiple times in multiple ways in an incoherent way
- > Lack of knowledge of cloud and lack of understanding of the IT estate and how it's consumed by the business
- > DevOps has been ad-hoc and reactive; there must be investment in skills, planning, and repeatable practices
- > So-called 'leaders' are being manipulated by consultants.

A short selection of comments from leaders:

- > Effective technical communication across the business and with external stakeholders (translation from deep technical fields to communicable actions and customer insights)
- > The usual juggle of keeping pace with technology changes and an ever more IT savvy workforce. Honestly? Objection handling and customer service skills are the biggest gap
- > Low IT literacy
- > SEO, UX and CX.

Addressing the gaps

As a charity focused on education, BCS is always interested in how organisations plan to address these, the following chart shows averaged answers from professionals and leaders.



Source: BCS IT in your organisation report 2022

The full report covers these areas in more detail, with additional sections on business priorities, IT project failure, IT representation at board level and a further selection of responder comments.

bcs.org/contenthub

Among IT leaders and managers the top business priority for 2022 is business transformation (26%). This is followed by operational efficiencies (15%) and business continuity planning (12%).

IT professionals (non-management) agreed that business transformation (19%) should be the main priority this year.

When it came to prioritising technologies, 27% of IT leaders and managers chose cloud as the top priority for 2022. This is followed by cybersecurity (24%) and business process automation (19%).

IT professionals (non-management) agreed that these should be the top three technologies priorities for 2022 but placed them in a different order. Cybersecurity is ranked first (25%) followed by business process automation (23%) and then cloud (16%).

Only 10% of participants feel their organisation has enough resources to achieve success in 2022.

27%

OF IT LEADERS AND MANAGERS CHOSE CLOUD AS THE TOP PRIORITY FOR 2022

4. BCS ON THE TECH LABOUR MARKET SPRING 2022

THIS IS THE FIRST EDITION OF A BIENNIAL REPORT FROM BCS, THE CHARTERED INSTITUTE FOR IT. WITH CONCERNS ABOUT AN INCREASING SKILLS GAP ALLIED TO THE FAST PACE OF TECH CHANGE, THIS REPORT BRINGS TOGETHER THE KEY NUMBERS FROM A VARIETY OF SOURCES ON THE IT JOBS MARKET, THE CHANGES IN DEMAND FOR SKILLS, PAY AND EMPLOYMENT DATA AND MORE. IT WILL ALSO LOOK AT THE KEY IT APPRENTICESHIP DATA, THE INCIDENCE OF TRAINING IN THE IT WORKFORCE AND TRADE DATA.

Feb 2022 review of Q3 2021

93%

OF TECH BUSINESSES STATED THAT THEY WERE CONFIDENT OF SURVIVAL IN THE FOLLOWING QUARTER COMPARED WITH JUST 77% ONE YEAR EARLIER

The tech labour market continued to strengthen during the third quarter of 2021- maintaining a trend starting in the second quarter of 2020 which many indicators suggest to have been the bottom of the trough brought about by the COVID epidemic and related measures to contain it.

Indeed, by the third quarter of the year 93% of tech businesses stated that they were confident of survival in the following quarter compared with just 77% one year earlier. Similarly, the incidence of tech firms ceasing to trade more than halved over the Q2-Q3.21 period and turnover amongst tech manufacturers/service providers were both up on the levels reported in Q2.21.

Looking at the tech labour market in more detail, the third quarter saw an increase in demand for staff (vacancies) as a whole from tech businesses (▲36%); rising demand for advanced digital skills, tech specialists (developers and Operations/Helpdesk staff), increases in the number of tech specialists (▲2%)/ tech industry workers (▲5%) and a rise in earnings (▲1%) of tech specialists/industry workers.

Despite these positive signs, recruitment difficulties in the tech sector appeared under control with just 7% of tech employers being of the view that filling vacancies was 'more difficult than normal for that time of the year'.

This is perhaps due to the abundance of 'ready candidates' for tech roles that were available due the third quarter – 150,000 in total encompassing 116,000 IT specialists seeking new/additional jobs (▲0.3ppts on the previous quarter), along with 34,000 unemployed tech specialists that were seeking work.

Considering the nature of jobs on offer, the top five type of positions advertised in Q3.21 were: Developers, Analysts, Architects, Consultants and Project Managers whilst the key tech skills demanded by employers at that time were: Agile, Azure, SQL, AWS and DevOps. The soft skills most often called for were instead: Social Skills, Problem-Solving, Analytical Skills and Project Management.

For those seeking to obtain the required skills it was perhaps gratifying to know that the likelihood of receiving education /training (if in work) was on the increase - with the proportion of tech specialists receiving education/ training above the all-sector average throughout the first three quarters of 2021 and by Q3.21 and just over half a million (504,000) tech specialists stating that they had received education in the prior quarter.

Aside from those in work, apprenticeship activity was also up in the third quarter with an 8% rise in apprenticeship vacancies and significant increase in apprenticeship starts for this part of the year (3,500 compared to 5,500 YoY) though a small decline in achievements was recorded in Q3.21 when compared with the equivalent period of 2020.

In the midst of these positive signs there were some more cautionary indicators – notably the relatively subdued level of private sector investment in tech hard/ software which, though up slightly QoQ remains below historical levels, and a deterioration in the trade balance as the deficit for tech goods/services - though low by historical standards was seen to more than double over the Q2-Q3.21 period.

Similarly, within the tech labour market – though characterised by rapid growth and general improvements – this is in some places restricted to certain groups and/or contractual arrangements as exemplified by the continued decline in self-employment within the tech sector from 12% in the third quarter of 2020 to just 6% during the same period of 2021. Similarly, there has been an increase in the incidence of zero hours contracts within the sector bringing the total number working under such arrangements to over 10,000 by the third quarter of 2021 – up from a level that historically was too low to publish using ONS data.

Established in 1957, BCS, The Chartered Institute for IT, is the leading body for those working in IT. With a worldwide membership now of more than 55,000 members in over 100 countries, BCS is the qualifying body for Chartered IT Professionals (CITP).

Figure 1:

SECTOR DEMAND FOR LABOUR AND SKILLS (INDEXED)

High growth in labour demand over the past five quarters



Source: BCS analysis of ONS Vacancy Survey data

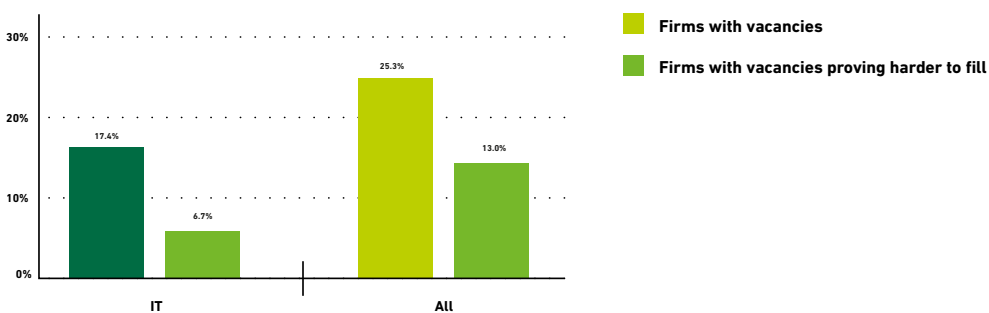
On average, there were 64,000 job vacancies in the **Information and Communications sector** during Q3.21 - an increase of 36% on the previous quarter and 191% on the equivalent period of 2020.

This was the fifth quarterly increase in labour demand recorded - both for the InfoTech sector and the economy as a whole (where comparative quarterly/annual growth figures of \uparrow 30% and \uparrow 126% were observed bringing total demand up to 1.19m positions in Q3.21).

Figure 2:

IT SECTOR RECRUITMENT/ISSUES, Q3.2021

Recruitment difficulties more common than normal



Source: BCS analysis of data provided by ONS

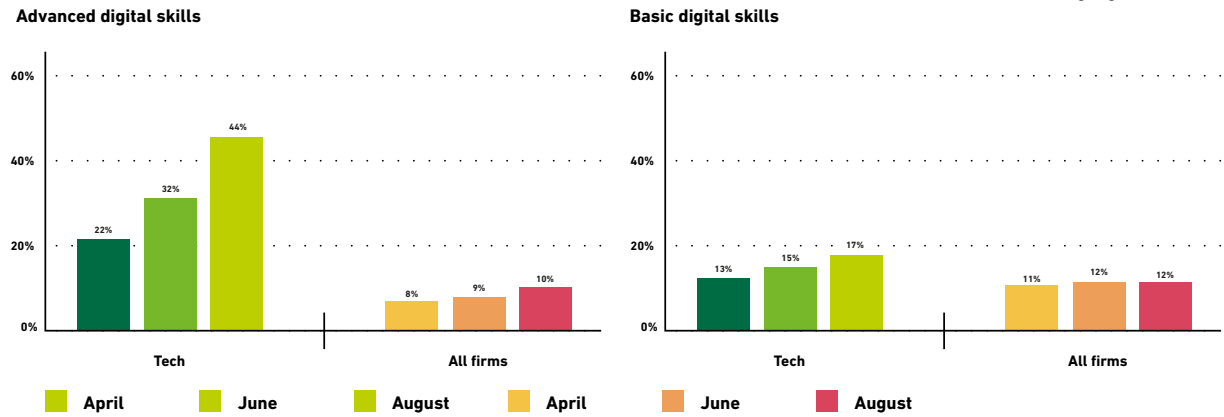
Though less likely than other firms to have vacancies in the third quarter of 2021, **IT businesses** were also less likely think that filling these vacancies was more difficult than normal for that time of the year (i.e. 7% of IT recruiters vs 13% of recruiters from all sectors).

Though additional insights into the reasons for recruitment difficulties for tech recruiters is unavailable due to survey limitations, across all sectors around seven in ten businesses stated vacancies were harder to fill due to '**a lack of suitable applicants for the roles on offer**'.

Figure 3:

ANNUAL CHANGE IN DEMAND FOR IT SKILLS, Q2-Q3.21

Demand for advanced IT skills surging in tech firms



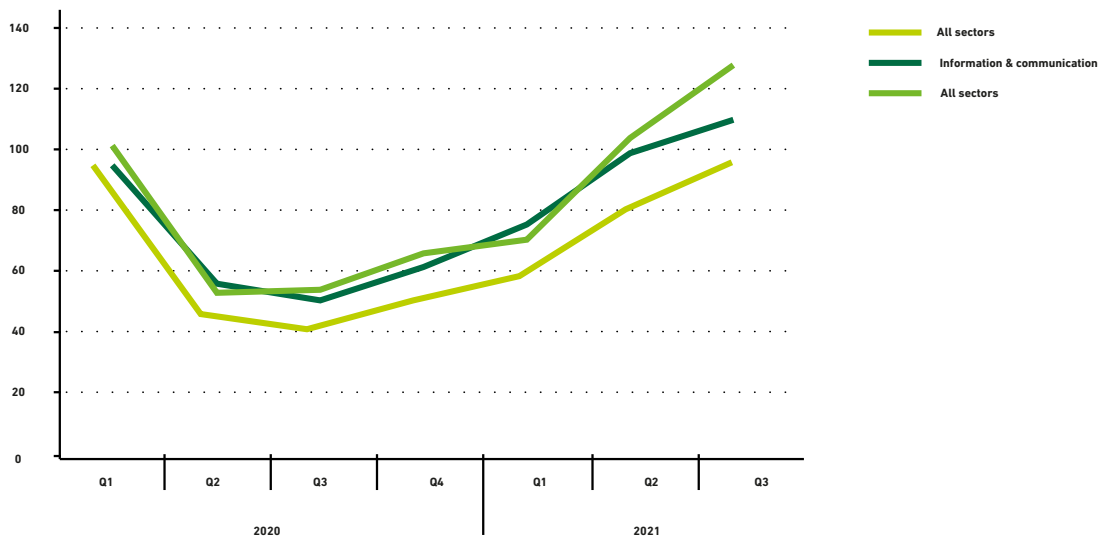
Source: BCS analysis of data provided by ONS

Demand for both advanced and basic digital skills rose over the second/third quarter of 2021 and when asked **'which, if any, of the following skills have you experienced an increase in demand for in the last 12 months?'** – four in ten (44%) tech firms responding to the ONS BICS survey in August 2021 stated that demand for advanced digital skills had increased over the previous year – double the proportion responding in April.

Figure 4:

DEMAND FOR IT SPECIALISTS (INDEXED TO FEB2020)

Almost one quarter of vacancies in development



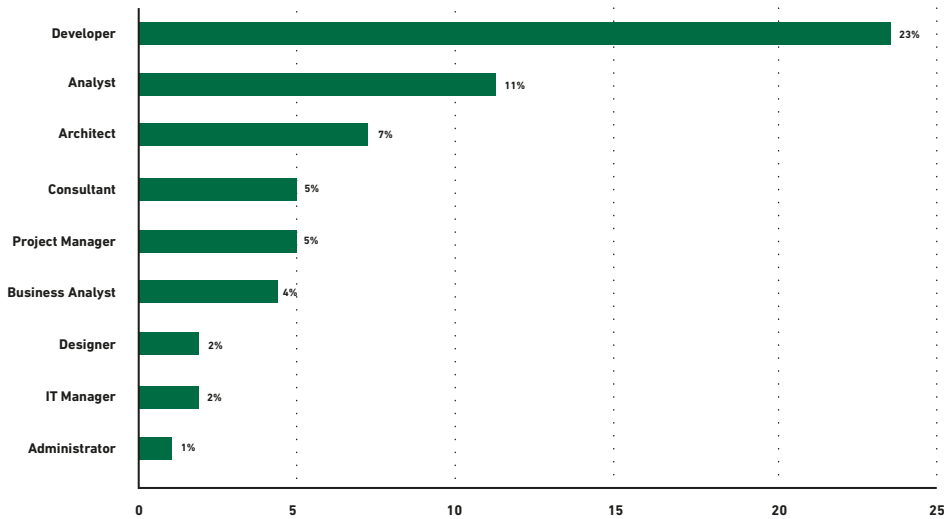
Source: BCS analysis of ONS Vacancy Survey data

Data from Indeed shows demand (vacancies) for **Development and IT Operations / Helpdesk** staff increased for the fourth consecutive quarter in Q3.2021 with QoQ changes of 11% and 19% respectively.

These increases were lower than that recorded for **demand (vacancies) as a whole** however where a quarterly rise of 25% was observed for the Q2-Q3.21 period.

Figure 5:
DEMAND FOR IT SPECIALISTS (INDEXED TO FEB2020)

Almost one quarter of vacancies in development



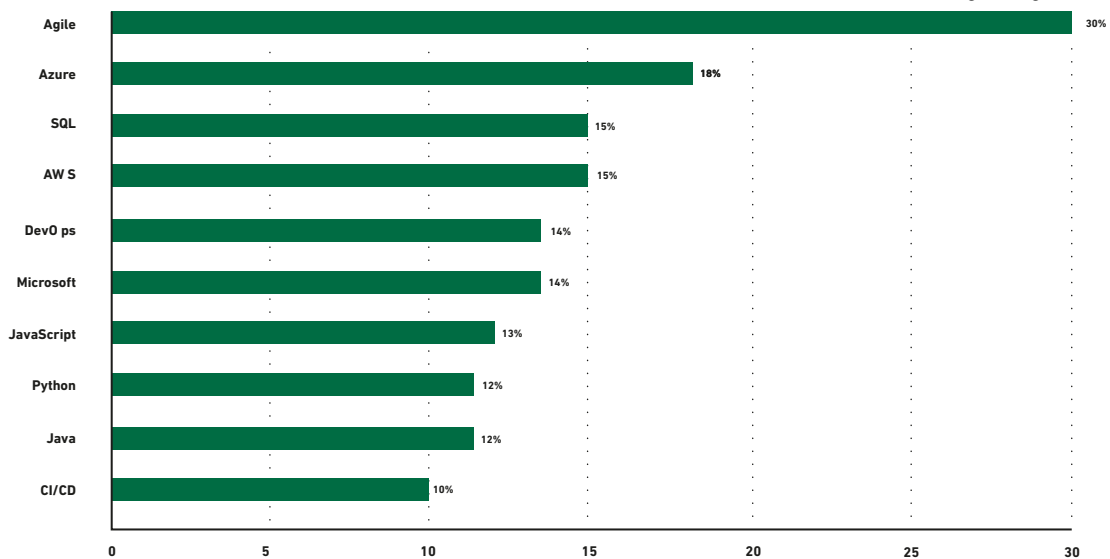
Source: BCS analysis of data provided by ITJobswatch

As in previous quarters, developers were the tech specialists most often sought by employers in Q3.21 and this group accounted almost one quarter (23%) of advertised positions at that time.

The specific type of developers most commonly sought during the quarter were: Software Developers (9%), Full Stack Developers (10%), Front End Developers (9%), Backend Developers (2%) and Web Developers (3%) whilst the top five platforms/languages called for were .NET, Java, C#, React and Python.

Figure 6:
MOST COMMON TECH SKILLS DEMANDED, Q3.21

Around one third calling for agile skills/experience



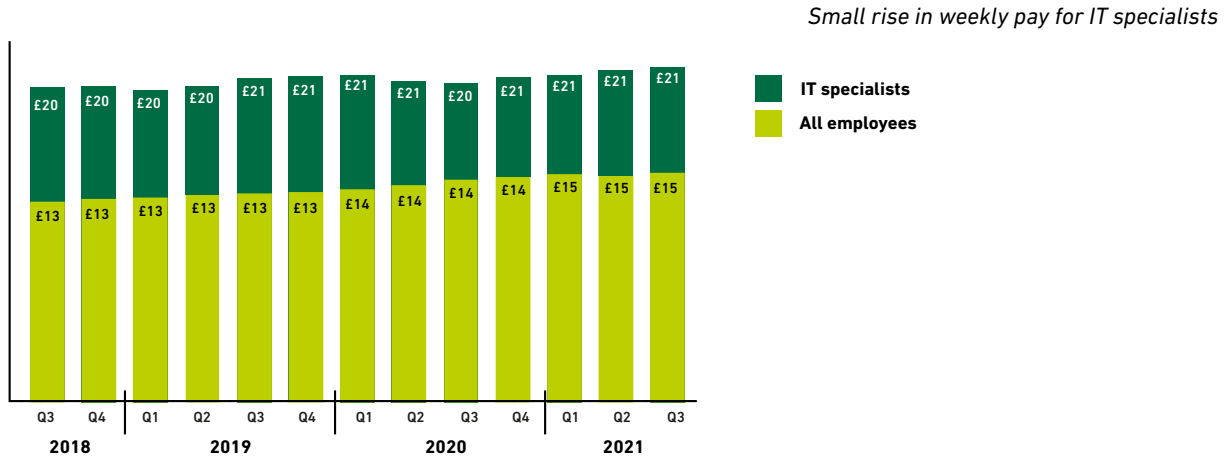
Source: BCS analysis of data provided by ITJobswatch

Agile was the most often cited technical requirement amongst adverts for tech jobs in Q3.2021 and by a significant margin with almost one third (30%) of vacancies calling for this skillset.

In addition to technical skills a range of soft/generic requirements were also specified, in this case the most common being: Social Skills (23%), Problem-Solving (10%), Analytical Skills (8%) and Project Management (7%)

Figure 7:

GROSS WEEKLY EARNINGS FOR ICT STAFF



Source: Various data analysed by BCS

The median hourly earnings for (full-time, permanent) **IT specialist employees** rose (▲ 1%) slightly over the Q2-Q3.21 period to £21phr.

This was the same level of rate rise recorded for **employees as a whole** in the UK, though at £15phr, the typical employee income remains £6 /32% less than that of **IT specialists**.

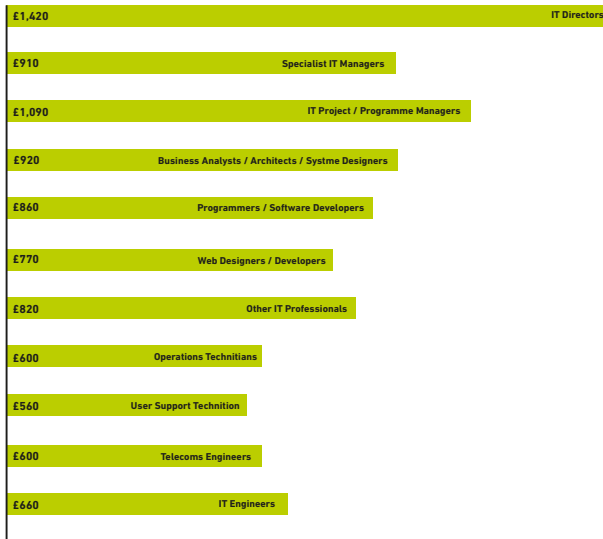
The median hourly earnings for (full-time, permanent) **IT industry workers** also rose by 1% over the Q2-Q3.21 period - again to £21 phr.

* See notes for details

THE TYPICAL EMPLOYEE INCOME REMAINS £6 /32% LESS THAN THAT OF IT SPECIALISTS.

Figure 8:
MEDIAN WEEKLY PAY BY TECH OCCUPATION, Q3.21

Big gains for Directors and Web professionals



Source: BCS analysis of data provided by ONS (Labour Force Survey)

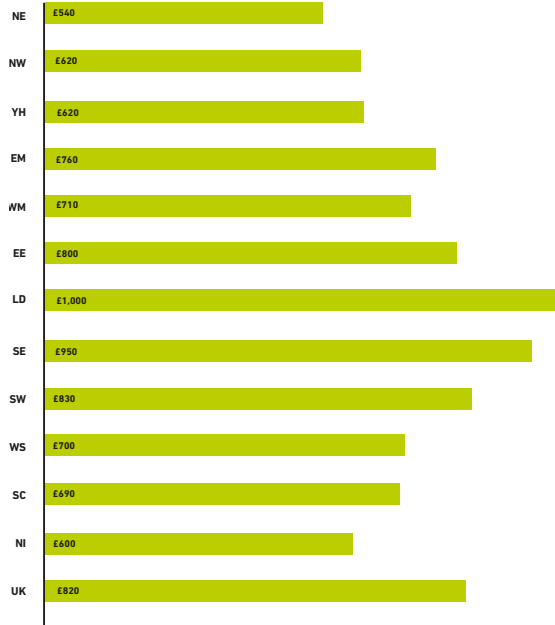
A rise in median weekly earnings was recorded for eight of eleven IT occupational groups over the Q2-Q3.21 period with the largest increases reported for **IT Directors** and **Web Designers/ Developers** (▲ 11% in each case).

Amongst occupations associated with a fall in the weekly median rate, the largest decline was registered for **Operations Technicians** (▼ 5% over the period). For **Specialist IT Managers** and **Other IT professionals** a much smaller decline was recorded (▼ 2% in each case).

* Four quarter averages to quarter cited

Figure 9:
MEDIAN WEEKLY PAY IN IT FIRMS, Q3.21

Quarterly pay rises recorded for seven UK nations/regions



Source: BCS analysis of data provided by ONS (Labour Force Survey)

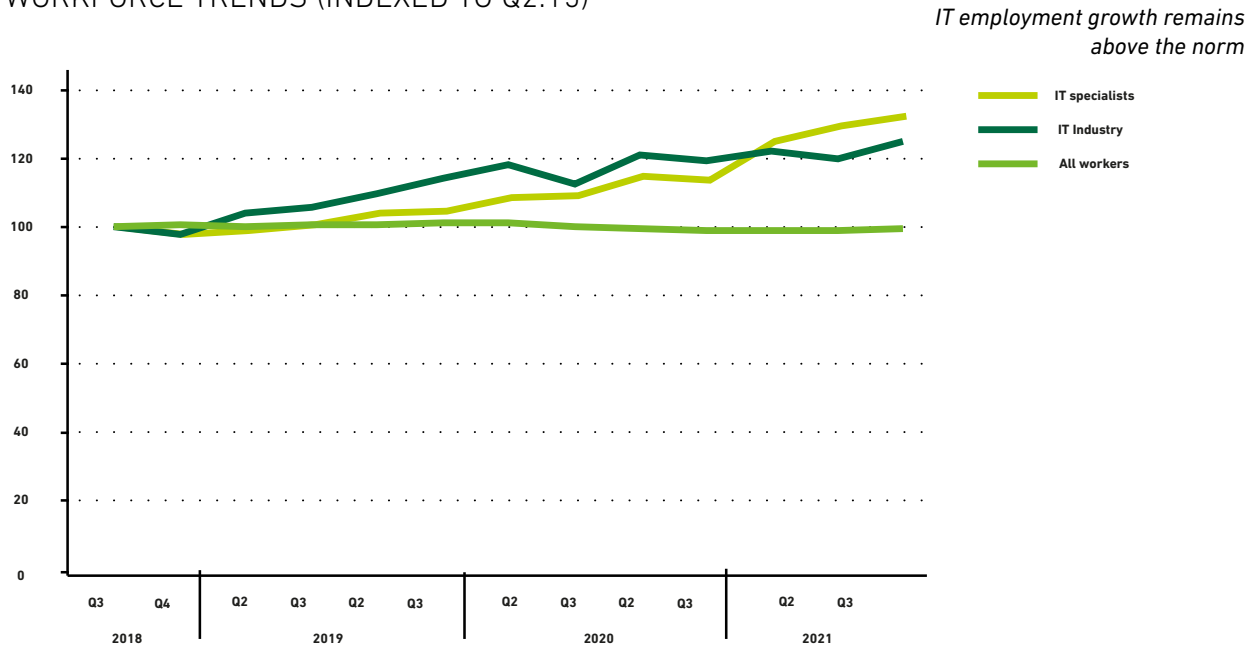
Median weekly rates of pay for employees in tech businesses increased in seven of the twelve UK nations/regions between Q2-Q3.21 - the largest rises occurring in the **East Midlands** (▲ 17%).

A small increase (▲ 2%) in the median weekly rate was recorded for London over the Q2-Q3.21 period and at £1,000 pwk pay levels are now £180 (21%) higher than the UK norm.

Amongst the six regions reporting a decline in weekly the biggest fall instead was observed within the **North East** (▼ 11%).

Figure 10:

WORKFORCE TRENDS (INDEXED TO Q2.15)



Source: BCS analysis of ONS Labour Force Survey data

The number of UK based **IT specialists** rose by 2% to 1.93m during the third quarter of 2021 whilst employment in the **IT industries** increased at an even greater rate (▲ 5%) to 1.34m.

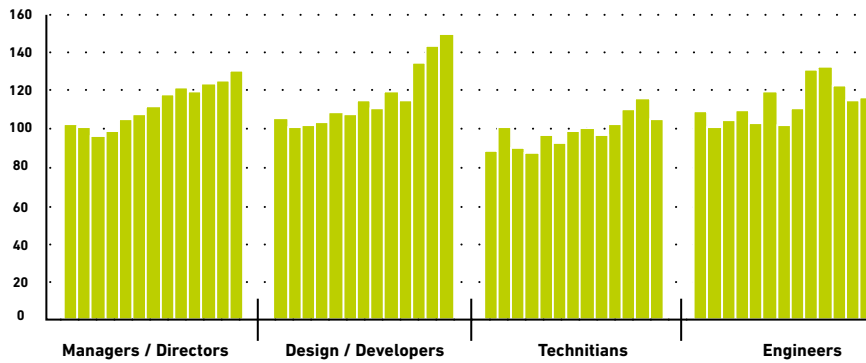
In each case, employment growth was driven by a rise in employee numbers (▲ 3% and ▲ 5% respectively) as opposed to **self-employment** – for which falls of 2% and 7% were recorded.

The overall number of **self-employed** in the workforce also fell over the Q2-Q3 period albeit it at a lower rate (▼ 1%), whilst **workforce as a whole** grew by 1% quarter on quarter (QoQ) to 31.16m.

Figure 11:

IT SPECIALIST EMPLOYMENT TRENDS, Q3.18-21 (INDEXED)

Good news for design/development professionals



Source: BCS analysis of ONS Labour Force Survey data

IT employment in Q3.21 encompassed: 1.10m **Design/Development professionals**, 0.477m **Managers/Directors**, 0.11m **IT Engineers** and 0.24m **IT Technicians**.

Three of these groups were associated with quarterly increases in employment compared with the previous quarter i.e. **Design/ development professionals** (▲ 5%), **IT Managers/Directors** (▲ 4%) and **IT Engineers** (▲ 1%) - conversely, the number employed as **IT Technicians** was seen to fall (▼ 10%) over the period.

Figure 12:

IT INDUSTRY EMPLOYMENT TRENDS, Q3.18-21 (INDEXED)

IT sales/distribution businesses gain



Source: BCS analysis of ONS Labour Force Survey data

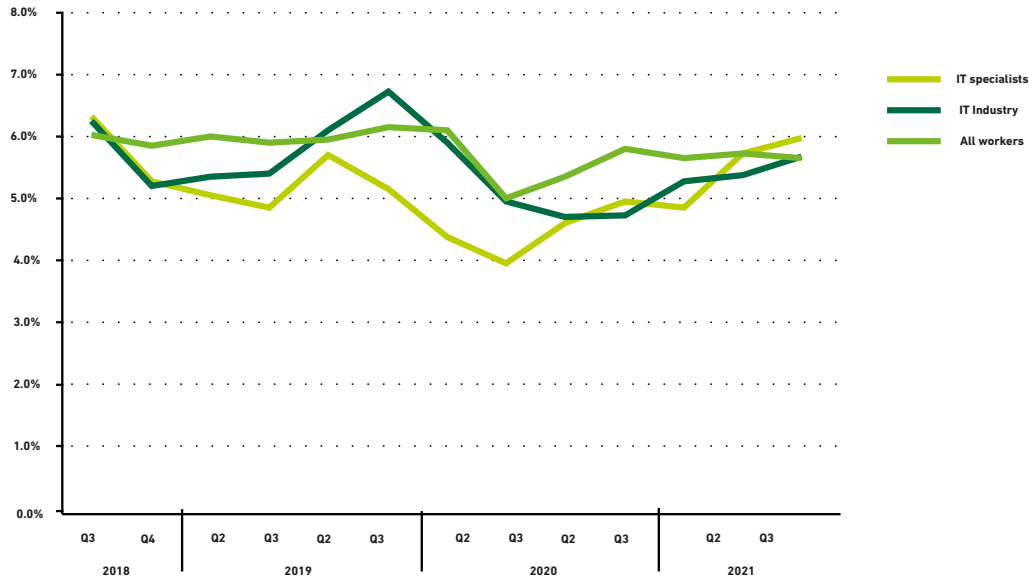
Employment in **IT sales/distribution** businesses increased by 23% over the Q2-Q3.21 period to 136,00 people whilst a smaller percentage increase was also observed amongst IT services firms (▲ 3%) which brings employment in this sub-sector to 1.16m.

For **IT manufacturers** instead employment levels remained unchanged in Q3.21 at 52,000 people.

Figure 13:

WORKERS SEEKING NEW/ADDITIONAL JOBS (PROPORTION)

Job-seeking activity on an upward trend



Source: BCS analysis of ONS Labour Force Survey data

There were 116,000 **IT specialists** seeking new/additional jobs during the third quarter of 2021 equating to 6% of those working in IT roles at that time. The incidence of job-seeking activity was up from 5.7% in Q2.21 - the second quarterly increase recorded and part of a trend starting in Q2.20 when just 3.6% of IT specialists were seeking new/additional roles.

A similar picture was apparent for **IT industry workers** with the incidence of job-seeking activity rising from a low of 4.5% in Q3.20 to a figure of 5.7% in Q3.21.

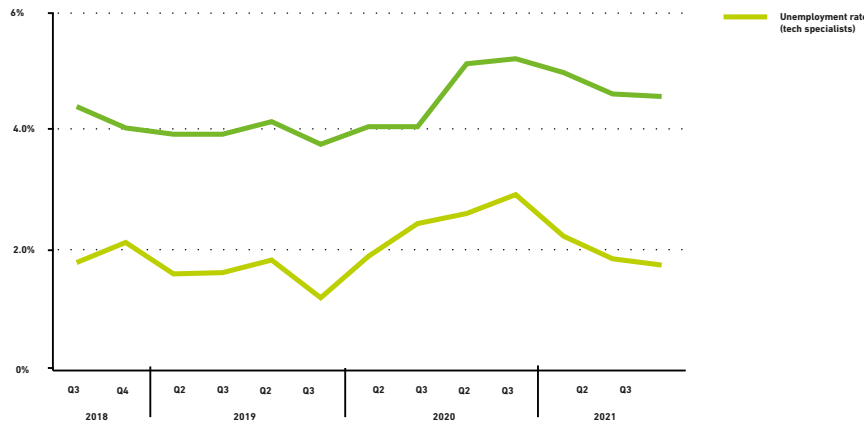
116,000

IT SPECIALISTS SEEKING NEW/ADDITIONAL JOBS

Figure 14:

UNEMPLOYMENT RATES COMPARED

Unemployment rates below the norm



Source: BCS analysis of ONS Labour Force Survey data

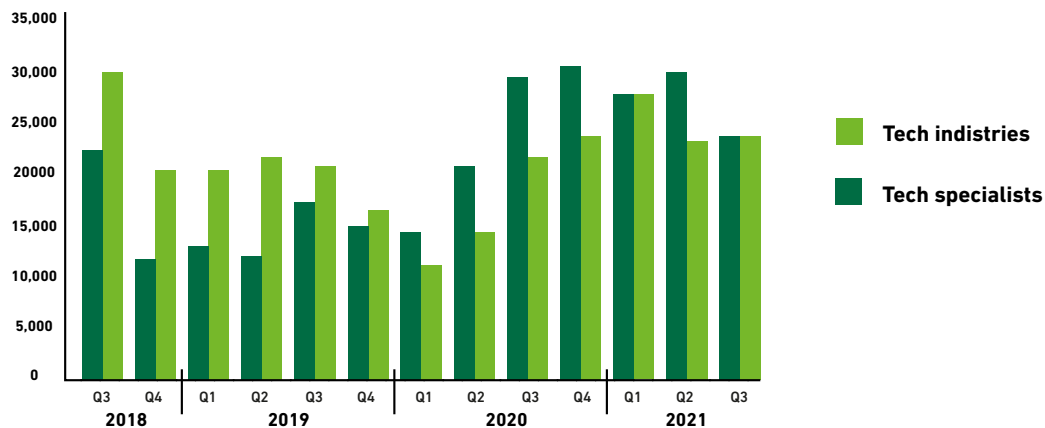
There were approximately 34,000 unemployed IT specialists in the UK during the third quarter of 2021 equating to an unemployment rate of just 1.7% - less than half the rate recorded for the labour market overall at that time (4.5%).

Unemployed IT specialists were split almost equally between **Managers/Directors** (51% or 18,000 people) and **Technicians/Engineers** (49%/17,000) though because of difference in employment numbers the unemployment rates for these two groups were markedly different in Q3.21 - 1.1% in the case of **Managers/Directors** versus 4.4% of **Technicians/Engineers**.

Figure 15:

HOW DO YOU PLAN TO ADDRESS THESE ISSUES?

State support less common

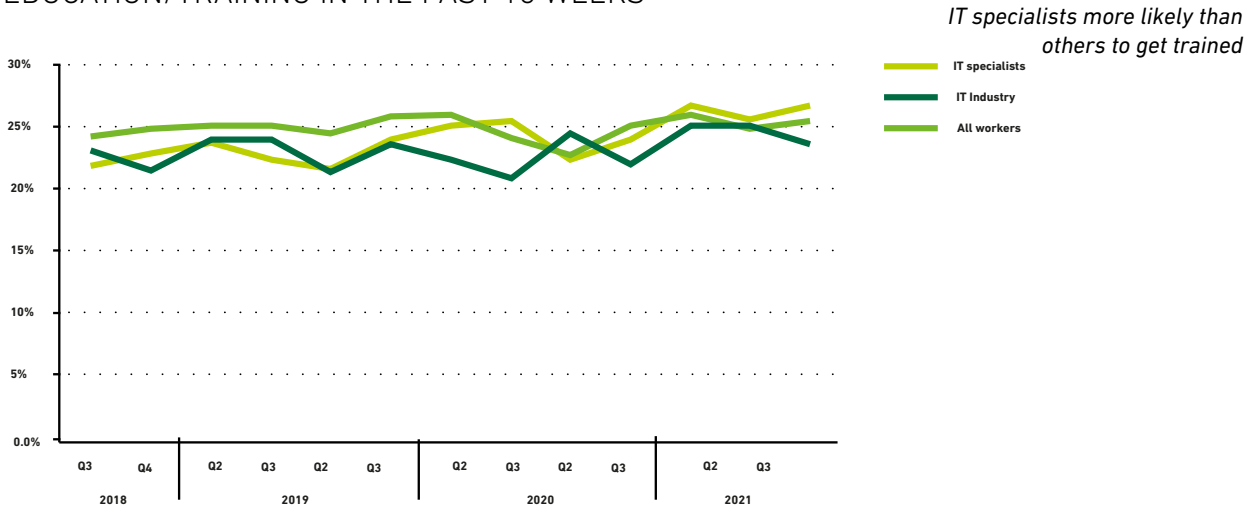


Source: Various data analysed by BCS

The number of **tech specialists** claiming either universal credit or working tax credits declined over the Q2-Q3.21 period from 29,000 to 23,000 people (▼ 22%) whilst the number of **tech industry workers** claiming these benefits remained stable at 23,000 over both quarters.

The **overall number** of people claiming universal/working tax credits also fell over the Q2-Q3.21 period – in this case by 6%.

Figure 16:
EDUCATION/TRAINING IN THE PAST 13 WEEKS

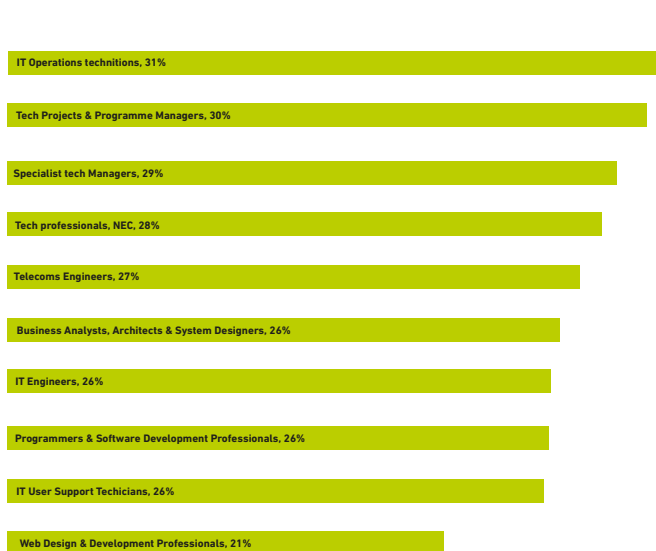


Source: BCS analysis of ONS Labour Force Survey data

Just over one quarter (26%) of **IT specialists** stated in Q3.21 that they had received job-related education/training in the past 13 weeks compared with 24% of **IT industry workers** and 25% of the **UK workforce** as a whole.

For each group there appears to be a slight upward trend in the incidence of education/training in recent years and in total by Q3.21 there were 504,000 **IT specialists** / 317,000 **IT industry workers** in total that had received training in the 3 months prior.

Figure 17:
EDUCATION/TRAINING BY OCCUPATION AND REGION/NATION



Operations technicians get trained

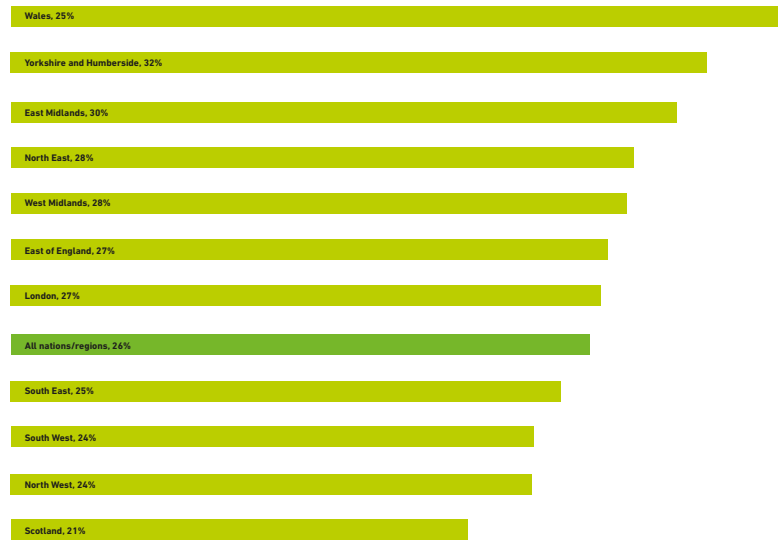
In the third quarter of 2021, the incidence of education/training (received in the previous 13 weeks) amongst IT specialists varied from just 15% of **Tech Directors** to 31% of **IT Operations Technicians**.

Tech Directors were also marginally less likely to have been offered education/training than other IT specialists - 14% stating this to have been the case in Q3.21.

Source: BCS analysis of data provided by ONS (Labour Force Survey)

Figure 18:
EDUCATION/TRAINING BY OCCUPATION AND REGION/NATION

Wales is big on training



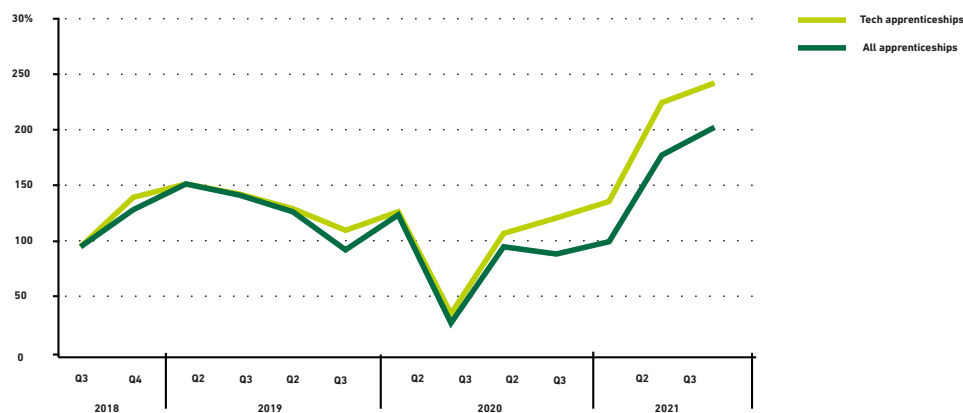
Source: BCS analysis of data provided by ONS (Labour Force Survey)

Across the UK, IT specialists working in **Wales** were most likely to have received education/ training in the 13 weeks prior up to Q3.21 and amongst IT industry workers too, **Wales** was the area associated with the highest incidence of education/training provision - 42% of IT industry workers in Wales stating that they had received education/training during the prior 3 month.

Interestingly, for workers as a whole (i.e. all occupations/industries) the **North East** was associated with the highest incidence of education/training (27%) during the third quarter of the year.

Figure 19:
APPRENTICESHIP VACANCIES (ENGLAND, INDEXED)

More openings for tech apprentices in Q3.21



Source: BCS analysis of ONS Labour Force Survey data

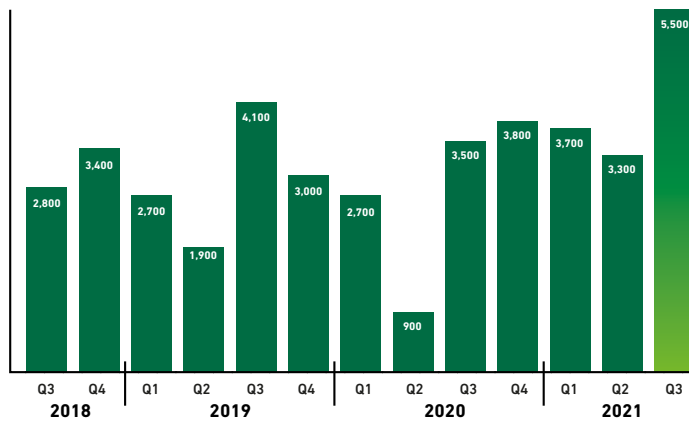
There were approximately 4,400 vacancies for tech apprenticeships in the third quarter of 2021 - an increase of 8% over the previous quarter and 117% over the previous year. Of these vacancies, nine in ten (89%) were at advanced level (compared with 48% of all apprenticeship vacancies) and the number of advanced tech apprenticeship positions advertised was up by 30% QoQ.

Growth in apprenticeship vacancies overall was slightly higher over the Q2-Q3.21 period (13%) though the YoY change was lower at 104% for the Q3.20-21 period.

Figure 20:

TECH APPRENTICESHIP STARTS (ENGLAND)

Apprenticeship starts surge upwards



Source: BCS analysis of data provided by DfE

Provisional estimates from DfE suggest a large increase (▲ 68%) in **tech apprenticeship starts** between the second and third quarter of 2021 bringing the total number of quarterly starts to approximately 5,500. By comparison apprenticeship **starts as a whole** (all standards) increased by approximately 114% QoQ.

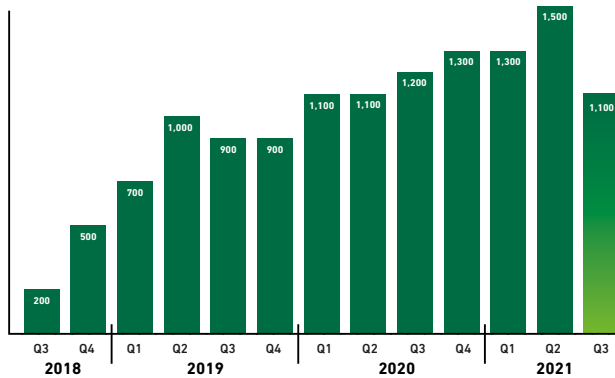
Higher level tech apprenticeships were associated with the biggest quarterly increase in starts Q2-Q3.21 (▲ 227%) followed by **advanced apprenticeships**. Conversely a fall (▼ 8%) was recorded in the number of **intermediate level** tech apprenticeship starts.

NB – figures derive from provisional/final data

Figure 21:

TECH APPRENTICESHIP ACHIEVEMENTS (ENGLAND)

Apprentice achievement decline



Source: BCS analysis of data provided by DfE

The number of tech apprenticeship **achievements** decreased by approximately 27% over the Q2-Q3.21 period, with provisional estimates from DfE indicating around 1,100 achievements in total during the third quarter compared with 15,00 in Q2.

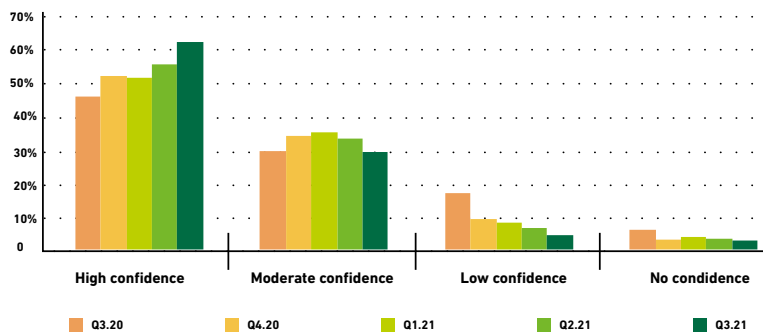
The decline in tech achievements was likely greater for advanced level apprenticeships (▼ 29% versus ▼ 19% for higher level) and occurred in a period where the **total number of achievements** (all standards) is thought to have increased by approximately 4% QoQ.

NB – figures derive from provisional/final data

Figure 22:

BUSINESS CONFIDENCE

Business confidence returns to IT and other businesses



Source: BCS analysis of ONS Labour Force Survey data

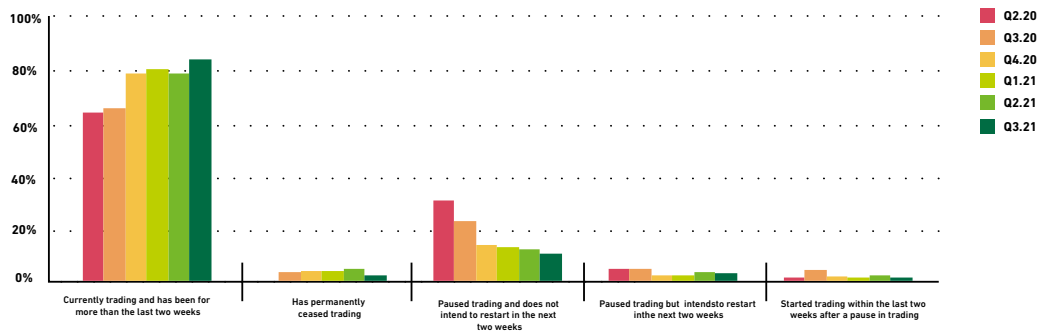
Business confidence amongst **IT firms** increased throughout the past year and by the third quarter of 2021 just 7% of firms stated that they had low/no confidence of surviving the next 3 months compared with 23% during the equivalent period of 2020.

The increase in business confidence mirrored that amongst employers more widely – again 7% of which had no/low confidence in surviving the upcoming three-month period.

Figure 23:

TRADING STATUS

Reports of closures now minimal



Source: BCS analysis of data provided by ONS BICS

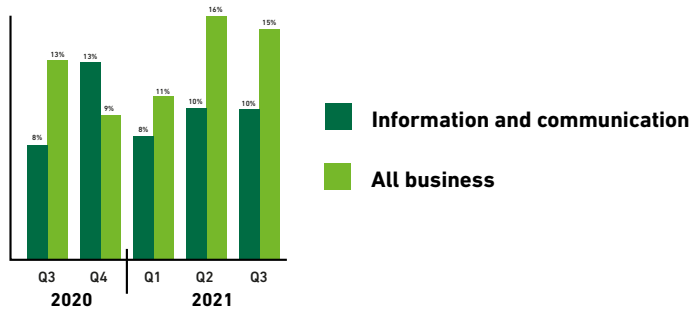
After peaking in Q2.21, the proportion of **IT businesses** stating that they were ceasing to trade more than halved from 4.5% to just 2.1% - a figure well below the **all-industry** average at that time (3.0%).

Conversely, the proportion of **IT firms** that were trading/had been doing so for at least two weeks was up from 78% to 84% over the Q2-Q3.21 period which, though encouraging, was below the level recorded across the **economy as a whole** (up from 80% to 88%).

Figure 24:

DEMAND INCREASES (GOODS/SERVICES) IN PAST MONTH

No change in demand for goods/services



Source: BCS analysis of data provided by ONSs

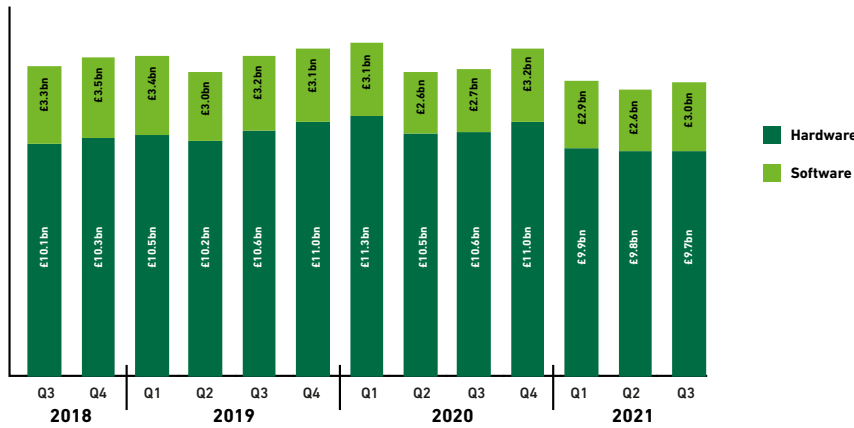
The proportion of **ICT businesses** reporting growth in 'demand for goods or services sold over the past month' remained static over the Q2-Q3.21 period at 10% - well below the figure for **all firms** (16% in Q2.21 and 16% in Q3).

There was however a small increase YoY (u 2pts) – both amongst ICT firms and for companies as a whole.

Figure 25:

PRIVATE SECTOR ICT INVESTMENTS

Investment in ICT inches up



Source: BCS analysis of data provided by ONS

Private sector investment in **tech hard/ software** rose by 2% between Q2 and Q3.2021 to £12.3bn.

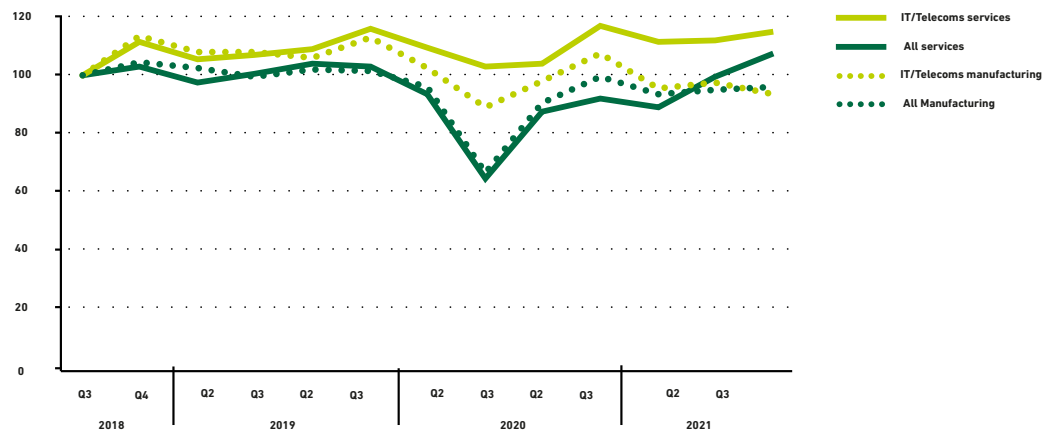
Despite this increase however, **overall spending on ICT** remained 5% lower than during the third quarter of 2020.

Further analysis of the quarterly change shows it to have been driven by a rise in **hardware** spending (▲ 13% to £3.0bn) whilst spending on **software** fell marginally (<1%) over the Q2-Q3.21 period.

Figure 26:

TURNOVER WITHIN ICT SOFTWARE & SERVICES*

Turnover shows slow rise in the ICT sector



Source: BCS analysis of ONS Labour Force Survey data

Whilst turnover amongst **IT/Telecoms services** businesses rose by 2% over the Q2-Q3.21 period to £48bn, a decline in turnover (▼ 4%) was reported by **IT/Telecoms manufactures** – in this case bringing the quarterly turnover down to £5.4bn.

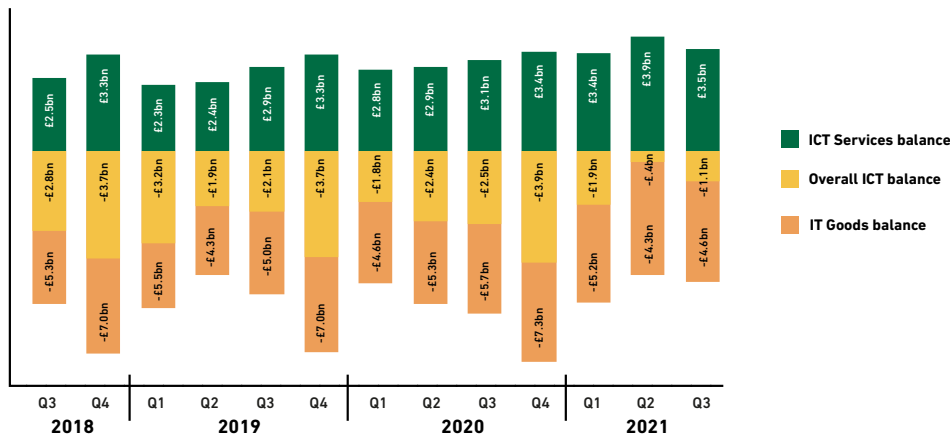
In both cases however, IT/Telecoms businesses performed worse QOQ than other elements of the economy as quarterly increases of 1% and 7% respectively were reported in the turnover of **manufacturing/ service businesses** as a whole.

* GB only

Figure 27:

TRADE IN TECH GOODS AND SERVICES

ICT trade balance has worsened slightly



Source: BCS analysis of data provided by ONS

The trade deficit for tech goods and services more than doubled over the Q2-Q3.21 period (▲ 185%) to just over £1bn.

The deterioration in the trade balance was brought about by an increase in the deficit for tech goods (▲ 6% to £4.5bn) combined with a reduction in the surplus for tech services (▼ 11% to £3.5bn) over the period.

In turn, the worsening of the trade position for tech goods was due to increases in imports whilst for tech services a fall in export values (▼ 9%) outweighed a fall in imports during the Q2-3.21 period (▼ 8%).

BICS	Business Impact of Coronavirus (COVID-19) Survey (BICS) is a voluntary, fortnightly business survey of around 9,000 firms (responses) covering a variety of topics including; business confidence, sales, turnover, workforce and trading status.
The Office for National Statistics (ONS)	<p>1) The ONS Trade in ICT Services series presents a summary of the UK's trade in services and shows exports, imports and balances by main type of service (£ms, seasonally adjusted).</p> <p>2) The ONS Trade in ICT Goods series analyses the value of UK exports and imports of goods grouped by industry.</p> <p>3) The Labour Force Survey (LFS) is a quarterly social survey of around 60,000 households providing a wide range of socio-economic data relating to individuals and households across the UK. All LFS data presented in this report relates to individuals of working age (males aged 16-64 and females aged 16-59) in employment unless otherwise stated.</p> <p>4) The ONS Turnover series provides information on turnover of Distribution and Services Industries at the three digit UK Standard Industrial Classification.</p>
ICT	The term ICT (Information and Communications Technology) is used within the Bulletin to describe industries/occupations relating to IT and/or Telecommunications.
Data currency	Data presented within this report is correct at time of publication, though it should be noted that certain data sets (particularly ONS) may be updated from time to time in accordance with revisions undertaken by data providers.
Salaries	ONS earnings data presented are four quarter rolling averages for individuals aged 16-64 working as employees in full-time, permanent positions with a filter applied against hourly rates above £100phr in accordance with ONS methodology. Further methodological details are available on request.
Skills shortages and gaps	Skills shortages refer to the recruitment process and in particular, recruitment difficulties due to a lack of applicants with the required skills, qualifications or experience. Skills gaps are mismatches in the skills held/needed from ICT staff by their employers.
Rounding	Advertised annual salaries rounded to nearest £100, actual weekly pay data rounded to the nearest £10, workforce figures rounded to the nearest 1,000 unless otherwise stated.
The ICT industry sector	Definitions of the ICT industry sector/ICT firms and associated employment figures may again vary according to the sources employed. For LFS data the ICT industry up to/including Q4.08 was described according to the ONS 'Standard Industrial Classification' SIC92 codes: 32.2 (Telecoms Manufacturing); 64.2 (Telecoms Services); 22.33 & 30.02 (IT Manufacturing) and 72.1-72.6 (IT Services). From Q1.09, a move from SIC97 to SIC07 means that the sector is now represented by the following codes: 18.20.3/26.30/26.30.1 - ICT manufacturing; 46.51/46.52/47.42.1/47.42.9 - ICT retail/wholesale; 61.10/61.20/61.30/61.90 - Telecoms services; 58.21/58.29/62.01.1//62.01.2/62.03/62.09/63.11/63.12 - Other ICT services; 62.02 - Computer consultancy and 95.11/95.12 - ICT repair.
ICT staff	Definitions of ICT staff can also vary. LFS data is again presented according to the internationally based 'Standard Occupational Classification' SOC 2000 codes: Telecoms Engineers (5242), Line Repairers/Cable Jointers (5243), ICT Managers (1136), IT Strategy and Planning Professionals (2131), Software Professionals (2132), IT Operations Technicians (3131), IT User Support Technicians (3132) and Computer Engineers (5245). The terms ICT staff and ICT professionals have been used interchangeably within this report.
Indexed charts	Unless otherwise stated the data presented in these charts shows the change in respective values relative to that for Q3.20 which is given a nominal value of 100. These charts have been used as a means of displaying data of widely differing magnitudes on a single chart.

Ready applicants (summary page)	Defined as ICT staff in work and seeking new jobs plus those classed as ILO unemployed that were previously working in ICT roles. The use the ratio of ready candidates: job is used as a broad indicator of supply/demand in the labour market.
Revisions, comparisons and trends	The weighting of estimates generated by the ONS Labour Force Survey are periodically updated and as such figures presented within this bulletin may vary slightly from those presented within other/previous BCS. Publications. These variations tend to be small in scale and as such are unlikely to alter the broad trends/findings shown.

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For further information please contact:

BCS

The Chartered Institute for IT

T +44 (0)1793 417 417

www.bcs.org

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