



# ASSESSING THE IT SKILLS GAP IN THE UK

October 2018

Given the breadth and pace of innovation, all signs point to a widening skills gap. This will put further pressure on organisations of all sizes to rethink their workforce strategies. While the notion of a skills gap is a seemingly straightforward concept, below the surface, there are many nuances to the story. And with Brexit happening, business executives and information technology (IT) managers in the UK foresee a mix of positive and negative impacts on the tech workforce. This CompTIA research brief explores these issues, setting the stage for approaches to tackling the IT skills gap.

## KEY POINTS

### **Skills gap has become somewhat of a catch-all term to describe a range of workforce concerns**

At the most basic level, skills gap can be characterised as the variance between the performance employers desire from their workforce and what workers can or choose to deliver. Things get murky when skills gap discussions venture into other workforce challenges, such as labor supply gap, pipeline gap, pay gap, location gap, or generational gap. For example, what may be thought of as a skills gap by an employer may in fact be a difference in millennial work styles. Furthermore, the skills gap and related issues are not limited to information technology (IT) occupations. Organisations report varying degrees of skills gaps across business functions.

### **Despite the consequences, most organisations do not have a formal strategy to address skills gaps**

Organisations report a number of consequences attributed to skills gaps, from lower staff productivity and sales, to deficiencies with innovation and new product development. Despite the negative impact to the bottom line, only about 4 in 10 organisations indicate they have a formal process and resources in place to address skills gap challenges (39%). The remaining 6 in 10 respondents report having only an informal process or no process at all in place. Compounding this lack of focus, more than half of organisations (55%) acknowledge they struggle to some degree in identifying and assessing skills gaps among their workforce. Obviously, knowing what to fix must precede discussions of how to fix it.

### **Emerging tech skills gaps are especially of concern**

With 6 in 10 UK managers most concerned about skills gaps with emerging tech (i.e. IoT, AI, automation, blockchain, AR / VR), this is the top tech area of concern, even ahead of cybersecurity (56%) and other areas such as integrating different apps / data sources etc. (56%), cloud infrastructure and apps (55%), and data management / analytics (54%). Still, skills gaps in foundational areas such as tech / IT support and network / systems administration remain of notable concern (48% and 45%, respectively) and cannot be discounted in efforts to enhance other tech skills.

### **The multifaceted nature of skills gaps require an equally diverse set of solutions**

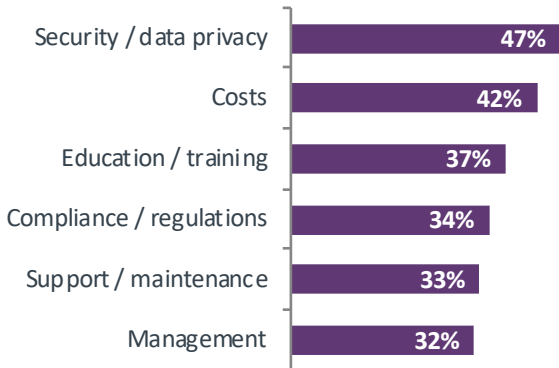
Is a persistent skills gap the new normal, or can meaningful steps be taken to mitigate the problem? Looking ahead five or 10 years, what will the skills gap landscape look like? While there are no easy answers, it is certain that without efforts on multiple fronts, the outlook for progress is bleak. A minority of the UK managers in our study think the Brexit will have a mostly positive impact on the skills gap (13%). Another third think Brexit will have a mostly negative affect (34%). Almost half expect both negative and positive impacts (46%).

Nearly half of UK organisations believe the skills gap is growing (46%). Twenty-nine percent report it unchanged, while 24% see improvement.

## THE GROWING ROLE OF EMERGING TECH

As previous CompTIA research shows, IT and business executives agree that technology plays a notable role overall in attaining their organisation's strategic objectives. And as firms in the UK move forward in their efforts to adopt emerging technology, 44% report their strategy will be primarily focused on internal development of initiatives around emerging tech. Another 38% expect they'll contract with outside firms to expand use of technology and explore emerging areas. The remaining 18% will wait until emerging tech is available in products they are easily installed. In comparison, a somewhat larger portion of US firms indicate taking on the more internal approach (51%). Though, with more larger-size firms represented, they tend to have more resources to focus on such efforts in-house. [FURTHER READING](#)

### Top General Concerns / Priorities Around Emerging Technologies



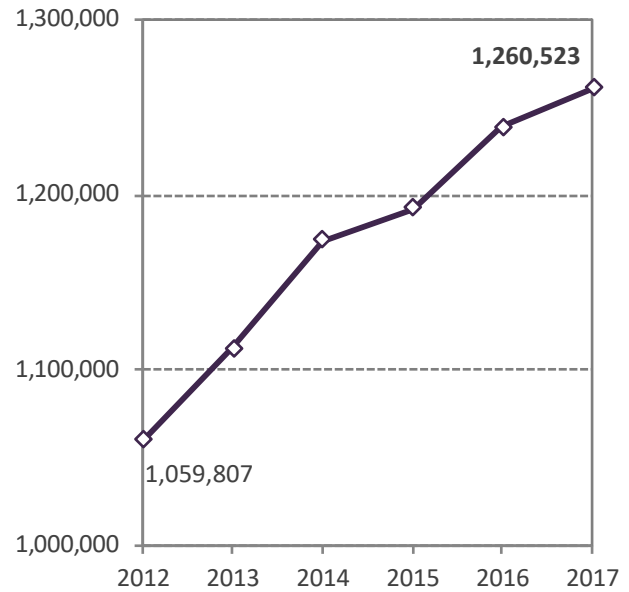
The role of technology, whether new or foundational, is not a separate matter from people of course. The two go hand-in-hand, needing each other to reach higher levels of success than either could single-handedly. And with the evolving nature of IT, so is the nature of tech skills. While the emerging tech skills gap tops the charts, skills gaps in foundational areas such as tech / IT support and network / systems administration remain of significant concern (48% and 45%, respectively) and cannot be disregarded in pursuit of enhancing skills of the more emerging areas. But rather, embracing a more encompassing approach, e.g. supporting and securing IoT devices.

### Top Ways Organisations Explore Emerging Tech

- 1 IT department explores new tech along with day-to-day responsibilities [45% UK | 58% US]
- 2 Business units bring new tech forward for consideration [36% UK | 48% US]
- 3 Partnership with another firm, university, government, etc. [33% UK | 33% US]
- 4 Outside firms pitch new tech [31% UK | 35% US]
- 5 Innovation lab dedicated to emerging tech [23% UK | 31% US]

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## UK IT Workforce Size & Growth



Source: Economic Modelling Specialists, Intl. (Emsi)

Base of IT Workers in the UK	# of Workers
Programmers & software dev pros	249,343
IT specialist managers	221,436
IT & telecommunications pros (other)	177,562
IT operations technicians	116,592
IT bus analysts, architects & sys designers	109,879
IT user support technicians	100,137
IT project & programme managers	74,405
IT & telecommunications directors	68,732
Web design & dev pros	52,446
Telecommunications engineers	48,623
IT engineers	41,368
<b>TOTAL</b>	<b>1,260,523</b>

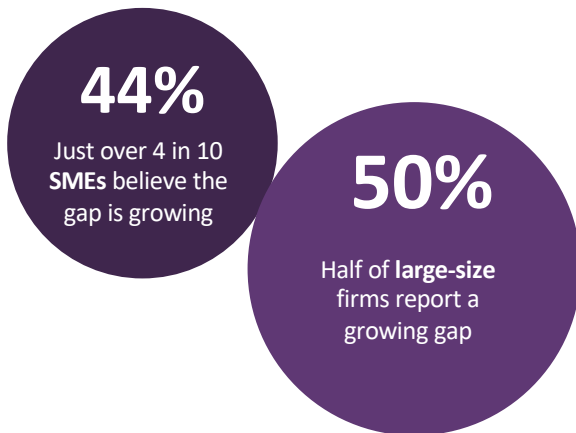
Two-thirds of IT workers in the UK are younger than 45 years of age (67%)



See the full report: [CompTIA UK IT Employment Snapshot](#)

## STATE OF THE OVERALL SKILLS GAP

When it comes to the concept of a workforce “skills gap,” most IT and business executives recall hearing or seeing something about it (89% definitely or maybe; a slightly higher rate compared to their US counterparts – 86% net.). The data shows that the skills gap tends to be a more prevalent concept among IT industry companies, IT managers, large-size organisations (250+ total employees), as well as firms with 5 or more IT employees.



Nearly half report that the skills gap situation at their organisation has grown in scope / depth over the past two years (46% significant + moderate growth; the same percentage as in the US). IT managers report growth in skills gaps somewhat more than those in executive or business management roles. Similarly on the less-surprising front, IT businesses or organisations with 5 or more IT employees are also more likely to see significant growth in skills gaps. Interestingly, those who are younger than 45 years of age – and especially those 34 years or younger – are much more likely to indicate the skills gap is growing significantly compared to their older colleagues.

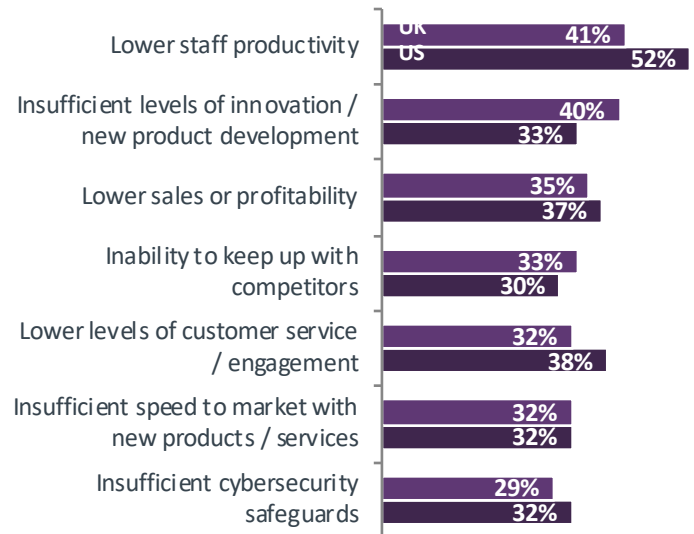
As technology evolves, so does the need for business and employees of all types to keep up. Gaps in skills not only

### Top Impressions About the “Skills Gap”

1. Too many workers lack advanced skills [89%]
2. Further education & universities are not sufficiently preparing students for today’s jobs [88%]
3. Primary & secondary schools are not sufficiently preparing students for today’s jobs [87%]
4. Skills gaps can sometimes be attributed to generational differences in the workplace [87%]
5. Not enough workers to fill available jobs [85%]

NET agreement (somewhat agree + strongly agree)

## Ways Skills Gaps Negatively Impact Business



hold a business back from achieving further success, but negative impacts are also seen in key business areas by 91% of organisations. Consider that 4 in 10 businesses report lower staff productivity due to skills gaps, or that more than one-third have lower sales or profitability due to gaps in skills, for example.

Skills gaps are not analogous to IT alone. In fact, when skill gaps / levels of proficiency are compared across six business functions, IT still ranks on top, but marketing and sales / business development are not far behind. Gap / proficiency ratings for marketing, sales / business development, and operations rate more similarly. And in comparison, skill gaps are less of an issue among accounting / finance functions customer service.

### Assessment of Overall Skill Gaps Across Functions:

- 82% IT
  - 79% Marketing
  - 79% Sales / Business development
  - 77% Operations
  - 72% Accounting / Finance
  - 71% Customer service
- NET gaps (90% proficient or less)

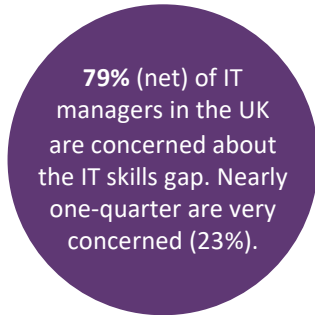
Furthermore, as job roles adapt and crossover between functions increase, additional skills gap challenges arise. As one IT manager working in the healthcare / medical industry highlights another tech skills gap area of top concern for their organisation, “*Dealing with GDPR and Data Protection issues especially for future marketing projects.*”

Considering additional international factors, among the 8 in 10 UK managers who expect that the Brexit will have at least some negative impact on the tech workforce (80% net), more than half anticipate it being more difficult to attract / hire international tech talent (53%). Another 44% foresee potential loss of tech sector competitiveness over time (44%) as another possible negative impact of the Brexit.

## STATE OF THE IT SKILLS GAP

Delving further into the IT skills gap, nearly three-quarters of IT and business executives are at least somewhat concerned with the IT skills gap at their organisation (74% net). About 1 in 5 are very concerned (21%). Who is significantly more concerned about the IT skills gap? Organisations with 10 or more total employees; as well as companies with at least 5 IT employees; and, understandably, among entities that report skills gaps are growing. Otherwise, concern levels are fairly consistent across the board. Whereas in the US for comparison, results show that concerns run significantly higher among IT industry firms, for example.

There are many other possible influences beyond work performance and tech changes that may play into IT skills gap concerns. Managers may use the skills gap discussion as a catchall for workplace challenges that are more so a factor of labor market dynamics or even personal experiences or beliefs.



An accurate evaluation of the IT skills gap is more difficult when fewer than half of organisations report having a good handle on identifying and assessing skills gaps themselves (43%). The one-third who often struggle are more likely to have 10 or more total employees, or be IT managers. Conversely, executive managers report having a good handle on identifying and assessing gaps at a significantly higher rate (54% vs. 35% of business managers and 40% IT managers).

Regardless of the measurement of skills gaps, perceptions are real nonetheless. The top impression shared by most IT and business executives is that too many workers lack advanced skills. Fortunately, this is a relatively easier, more tangible area to address via improved training efforts focused on specialised topics such as analysis.

*“It is common these days to hear people talking about skill gaps. A skill gap is a gap between what employers want or need their employees to be able to do, and what those employees can actually do when they walk into work.”*  
 -- IT professional working in the retail / wholesale (non-IT) industry

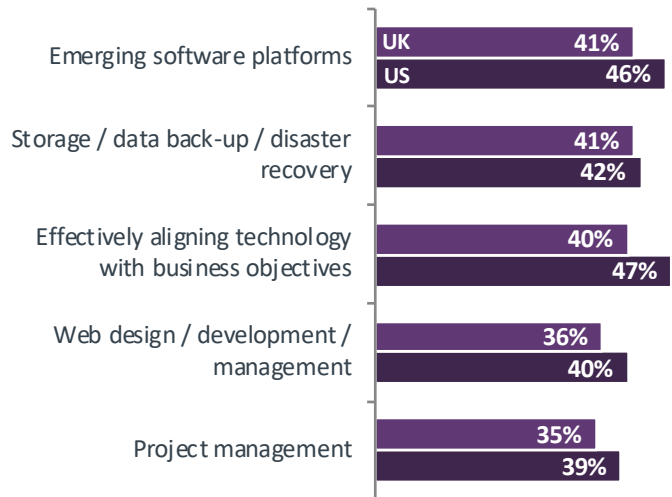
## Top IT Skills Gap Areas

1.	Emerging Tech, i.e. IoT, AI, automation [60%]
2.	Cybersecurity [56%]
3.	Integrating different apps, data sources, platforms, devices [56%]
4.	Cloud infrastructure / cloud apps [55%]
5.	Data management / data analytics (big data) [54%]
6.	Digital business transformation / modernising legacy hardware or software [52%]
7.	Software or app development [51%]

NET gaps (moderate + significant gaps)

Already, nearly all organisations provide at least some support for professional development, training, or continuing education for their IT workers to keep up to date with their skills, albeit most commonly at an informal-strategy level. Still, more employer support is needed and would be welcomed as IT professionals already have a penchant for continued learning and desire additional training resources. [FURTHER READING](#)

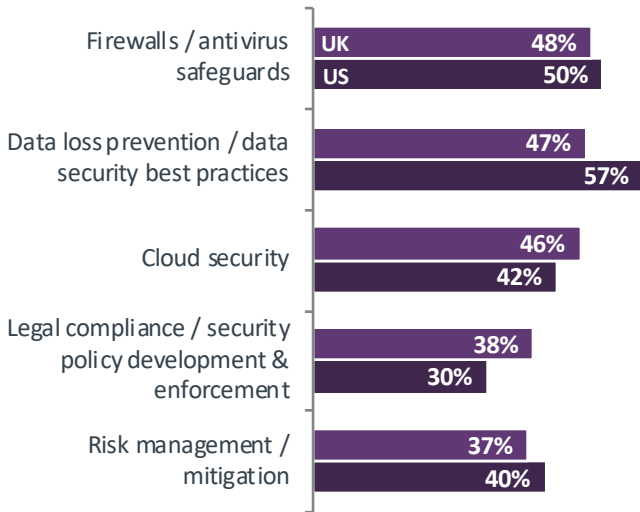
## Top Digital Business Transformation Skills Gap Concerns



## Top Emerging Tech Skills Gap Concerns

1. Internet of Things [36%]
2. Artificial intelligence [36%]
3. Machine learning [31%]
4. Automation of workflow / bus. processes [30%]
5. Blockchain tech [28%]

## Top Cybersecurity Skills Gap Concerns

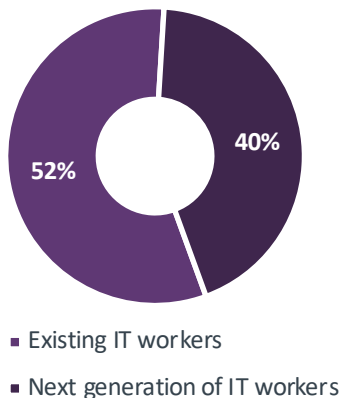


Cybersecurity skills gap concerns manifest themselves in two ways. The first way is the direct referencing of expertise or experience shortcomings that pertain to some aspect of cybersecurity. The top skills gap mentions include: traditional security safeguards such as firewalls and antivirus software, data security, and cloud security.

The second way is indirectly through practices or pursuits that inevitably have a cybersecurity component. For example, more than half of organisations report skills gap challenges that inhibit the integration of different applications, data sources, platforms, or devices (56%). This is a critical step for organisations seeking to modernise through business transformation. While cybersecurity is not specifically mentioned, it is an implied requirement.

Similarly, organisations testing the waters with IoT, artificial intelligence, or robotics, for example, face skills gaps due to the emerging and fluid essence of these technologies. It takes time for training material and opportunities for workers to gain experience to catch up. Security best practices, and the corresponding skill sets, must be a priority from the onset.

## Preference for Where Organisations Want to Focus Skills Gap Improvement Efforts



[don't know responses not shown]

## Top Cited Strategies for Addressing Skills Gap Challenges Among the IT Workforce Pipeline

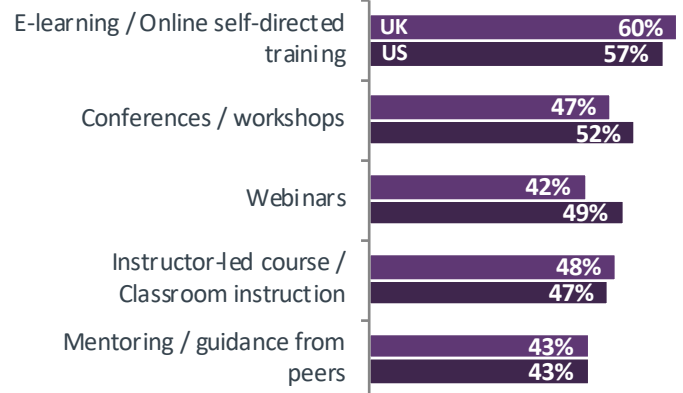
- 1 Early student exposure to careers in IT
- 2 Better ways to provide on-the-job experience, such as internships
- 3 Better ways to provide intense job training, such as apprenticeships
- 4 Better assessments / methods for evaluating the skills of job candidates
- 5 Certifications / credentials to validate skills and knowledge in specific tech areas

When given the choice between focusing skills gap improvement efforts on existing IT workers or the next generation of IT workers, managers are split as a slight majority of survey respondents preferred to focus on existing workers (52%) over new hires (40%). This speaks to short-term self-interests (even more so in the US where 59% cite existing workers), which makes sense given the segment of organisations struggling to keep up with skills gap challenges.

However, with more than 125,000 IT workers in the UK age 55 or older\* and looming retirements, delaying efforts to address the quantity and quality of the talent pipeline will only exacerbate the problem.

Among possible strategies cited for addressing skills gap challenges among the IT workforce pipeline, respondents emphasised the need for better approaches to enable candidates to gain relevant work experience and on-the-job training. Although the practice of apprenticeships has been around for hundreds of years, there has been renewed interest of late in applying the concept to fields not traditionally associated with apprenticeships, such as IT. The research confirms this assertion with about 9 in 10 of UK firms who have or would consider an apprenticeship programme for an IT role (89% net). This is virtually the same as in the US where 90% indicate as such. Somewhat surprising, given the traditionally more highly regarded practice of apprenticeships in Europe. Another sign of promise for such tech skills gap resolutions.

## Top Types of IT Training Encouraged for IT Staff



\*CompTIA analysis of Emsi and ONS data

## RESEARCH METHODOLOGY

This quantitative study consisted of an online survey fielded to IT and business executives during September 2018. A total of 551 professionals based in the United Kingdom participated in the survey, yielding an overall margin of sampling error proxy at 95% confidence of +/- 4.2 percentage points. Sampling error is larger for subgroups of the data.

As with any survey, sampling error is only one source of possible error. While non-sampling error cannot be accurately calculated, precautionary steps were taken in all phases of the survey design, collection and processing of the data to minimise its influence.

A similar but separate study was conducted within the US and published in 2017. See CompTIA's [Assessing the IT Skills Gap](#) for the US version. Note that data comparisons between the UK and the US contained within this brief are more contextual rather than direct.

CompTIA is responsible for all content and analysis. Any questions regarding the study should be directed to CompTIA Research and Market Intelligence staff at [research@comptia.org](mailto:research@comptia.org).

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