Institute for Apprenticeships & Technical Education

Emerging digital trends/skills

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Background

- Technology and use of digital tools is becoming more prevalent across all sectors and we have been exploring what the key cross-cutting digital trends of the future are.

- This is to help our employer groups across all 15 routes in considering future skills needs when developing or revising apprenticeships.

- The trends identified are a starting point and not an exclusive list. We recognise that predicting the future is not an exact science, and there will be other trends and technologies that might be more important to specific sectors that are not included here.

Enabling digital across the economy

The way we live and work is changing, and while the UK is a world leader in digital, the speed of change is leaving many people behind. 11.8 million people (36% of the UK workforce) of working age are still without the Essential Digital Skills (EDS) for life and work.

Right now, this skills gap is preventing individuals and businesses from taking full advantage of digital technology; it's damaging the UK's competitiveness and productivity. Digital skills are now entry requirements for two-thirds of UK occupations, accounting for 82% of online job vacancies. However, many businesses are struggling to recruit people with the digital skills they need. *[source: future.now]*

How is this being addressed?

Digital Skills for All

The Essential Digital Skills Framework reflects the range of skills people need to safely benefit from, participate in and contribute to the digital world of today and tomorrow, in life and at work.

Developed in 2018 on behalf of the Department for Education, the framework outlines five key skills (namely, Problem Solving; Communicating; Transacting; Handling Information; and Being safe and legal online) and provides examples of tasks that people should be able to complete to demonstrate each skill.

The Essential Digital Skills report developed by Lloyds Banking Group is the UK's digital skills benchmark, measuring the basic tasks needed to access the online world, and the essential digital skills needed for life and work.

The roll-out of Essential Digital Skills Qualifications will also equip the most vulnerable with the right tools to safely benefit from, participate in and contribute to the digital world of today and the future, 2019). The Government will provide entitlement funding for learners aged 16-19 and 19+ (employed or unemployed) who have a foundation of limited digital skills and are taking Ofqual approved Essential Digital Skills qualifications.

Digital Skills and Characteristics Framework – for Apprenticeships and Technical Education

The Institute for Apprenticeships & Technical Education have also co-produced a Digital Skills and Characteristics Framework in collaboration with its Digital Route Panel to support the inclusion of appropriate digital content in new and revised occupational standards at all levels.

To ensure consistency and assessibility, this framework builds on themes from the Essential Digital Skills Framework. However, the Digital Route Panel have looked beyond the foundation digital skills required by citizens and have specifically articulated a set of digital characteristics in an occupational context and mapped these across to the various occupational levels for an apprenticeship.
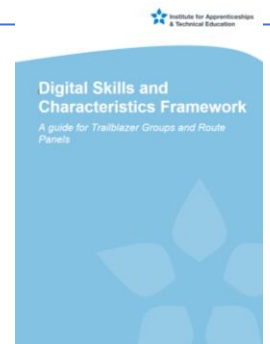
Key future digital trends that will impact all sectors

Technology and the use of digital tools is prevalent across all sectors, and in recognition of that, the Institute and Digital Route Panel have identified a number of cross-cutting digital trends of the future.

1. Transition to the next-generation workforce

What is it?

Digital practices welcome numerous advantages for organisations, such as enhanced productivity, improved communication levels and greater efficiency. Therefore, a workforce that is highly equipped, digitally-skilled and familiar with technology concepts from day one is more important than ever before.

IT literacy gives way to expanded digital competency in the future – where adoption of digital solutions (e.g. no/low-code, automation) becomes part of the day job. Industries will be expected to adopt a digital-first mindset as the workforce responds to the pace of technical change.

We expect this to impact sectors immediately - short term.

Related technologies

Self-learning platforms: *E.g. All employees will be expected to self-learn through online training and upskilling, even YouTube!*

Data manipulation: *E.g. An employee will be expected to create, read and interrogate a PowerBI Dashboard to answer business-critical questions.*

No Code: *E.g. A marketeer will use a No-code platform like Braze to create an automated, personalised segmentation campaign for a brand's customers.*

Artificial Intelligence: *E.g. A maintenance worker will rely on AI-driven traffic automation to schedule in maintenance work on the road based on expected traffic throughput.*

Automation: *E.g. A worker will need to identify key areas of any workflow that could be done by robotics or computers, so that they are focussed on the human-add value.*

2. AI/Automation

What is it?

"AI refers to systems or machines that mimic human intelligence to perform tasks and can iteratively improve themselves based on the information they collect. AI manifests in a number of forms."

AI creates new opportunities to drive growth, potentially exponentially. It'll have an impact on every aspect of a company, people, processes, systems, and applications, leading to new ways of customer engagement, new business models, improving human productivity to the next level, and enhancing human interaction within and outside the company.

It can help provide better experiences, for example, if you are trying to get home in rush hour traffic, Google Maps can quickly help figure out the best route. Or when you finish watching a film on Netflix, another film that you might be interested in is recommended.

It can also help us work smarter, redirecting human talent to more rewarding work. With AI, a company can reimagine the way it does things and do them in a way that humans could never do alone.

We expect this to impact sectors medium – long term.

Related technologies

Computer vision, sensors, machine learning, deep learning, neural networks.

3. Edge computing and connectivity

What is it?

Edge computing allows computing infrastructures to be closer to the data source, leading to faster and more reliable use of devices.

Together, 5G and Edge computing can lead to almost unimaginable innovation. While Edge provides new and faster experiences, 5G provides the connectivity to grow and expand those new experiences.

It will be key to enable a "smart" future and the Internet of Things (IoT) where cars drive themselves, homes automatically adjust to your lifestyle and preference, farms have autonomous drones which can identify weeds and spot treat them with pesticides.

We expect this to impact sectors medium – long term.

Related technologies

Edge Computing, 5G, Connected devices, IoT, Artificial Intelligence

Next steps

- AI workshop(s) to:
  - improve understanding of the emergence of AI technology and application in industry among our employer groups
  - increase awareness of the next wave of AI trends and how they may impact sectors in the next 5 years
  - Identify and capture common themes
  - Lead to translation of emerging applications into skills, knowledge and behaviours that apprenticeships (and technical qualifications) should include

Problem - keeping pace with change. Apprenticeships can take up to a year to develop and publish. Do we make content generic enough to allow for change (and risk being ambiguous) or allow for rapid revisions (and risk creating uncertainty for learners, providers and assessment bodies?).

Any questions?

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