The Digital Workplace Skills Framework

Ensuring the workforce is ready to work digitally

Digital Workforce Skills Assessment

Measuring the digital readiness of your workforce

Introduction

How should organizations get started with digital literacy? What skills do they need to foster in the workforce? For senior managers trying to come to grips with the digital skills challenge inside the organization, it can be hard to know where to invest their efforts. Taking a data-driven approach to improving the digital readiness of employees to work digitally can help organizations ensure that precious resources are invested in digital skills initiatives that meet the real needs of the workforce, in turn contributing to successful digital transformation.

Why measure?

The Digital Workplace Skills Framework is designed as a basis for measuring the 'Digital IQ' of the organization. This is important in order to:

- **Gain insight** - gain actionable insights into your workforce's digital readiness and a clear view of how it may help or hinder digital workplace progress.
- **Focus investment** - understand where best to focus investment in digital skills initiatives to achieve the greatest impact and most beneficial outcomes, and how to design digital skills interventions.
- **Track progress** - get a baseline measure of current digital skills in the workforce against which to track the effectiveness of digital initiatives, as well as enabling recognition and certification.

Methodology & approach

The Digital Workforce Skills Assessment provides organisations with a well-considered approach to assessing the digital capabilities of its employees. It uses the Digital Workplace Skills Framework described in this in-depth report as the basis for detailed and informative research into the specific digital skills needed by people in your organization. From project briefing, through qualitative and quantitative data collection, to analysis and reporting – a comprehensive approach is taken to provide your organisation with actionable insights to inform your digital initiatives.

Project deliverables

- Project briefing
- In-depth interviews
- Quantitative survey
- Coding and data analysis
- Detailed written report
- Report back meeting.
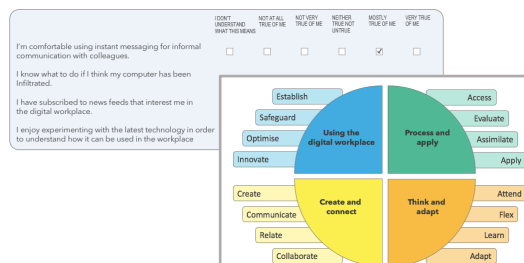
Get in touch

To learn more about the Digital Workforce Skills Assessment and discuss your organisation's requirements, please contact Elizabeth Marsh on elizabeth@digitalworkresearch.com or +44 (0)7815 107231.
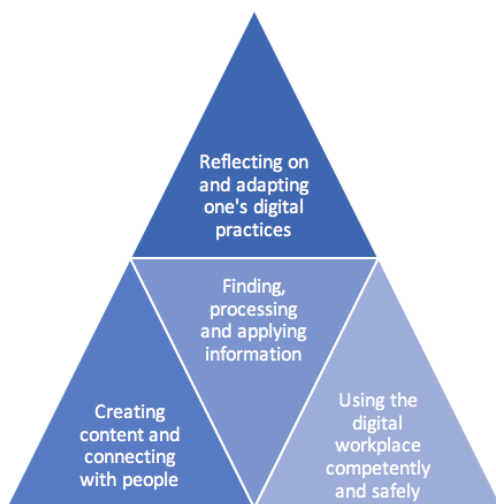
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1. Executive summary

A digitally skilled workforce is a key ingredient for organisations undertaking digital transformation to realise expected benefits in both operational efficiency and customer experience. The most digitally mature companies understand this: they are five times more likely to provide their employees with resources and opportunities to develop their digital skills than those at an early stage[1].

However, recent research by the European Commission on digital skills in the workplace found that 88 percent of organisations have not taken any action to tackle the lack of digital skills of their employees[2]. This is especially worrying given that over a third report that the digital skills deficiency in their workforce is impacting on performance, with lost productivity and decreased customers the main negative impacts. Indeed, the research found that digital transformation in organisations across the world is being hindered by a lack of appropriate digital skills and inadequate training for employees.

This research paper is intended to help organisations get to grips with this challenge by supporting them in taking a well-considered and thorough approach to growing the digital capabilities of the workforce.

> **"Digital transformation in organisations across the world is being hindered by a lack of appropriate digital skills."**

Author bio

Elizabeth Marsh is a freelance digital workplace consultant, researcher and writer with a wealth of industry experience working with a wide range of organisations. In 2014 she co-authored 'The Digital Renaissance of Work' book with with DWG CEO Paul Miller, which was shortlisted for the CMI Management Book of the Year 2015. Elizabeth has recently been awarded an MSc

It starts out by providing an introduction to the concept of digital literacy and presenting evidence of why digital skills are essential to organisational success in the digital age. Building on this foundation, a detailed Digital Workplace Skills Framework is set out to enable organisations to understand, assess, and improve across four areas and sixteen sub-facets of capability.

The framework is introduced and then described in detail, including example survey items to assess each of the sixteen sub-facets. Finally, suggestions and examples on how to improve the organisation's digital capability are provided.

[1] Kiron et al. (2016)
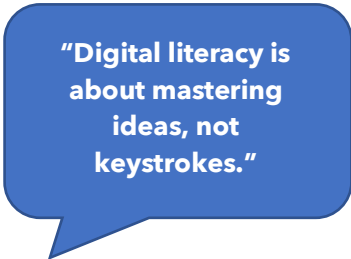[2] Curtarelli et al. (2017)

2. What do we mean when we talk about digital literacy?

Before launching into a detailed description of the skills needed by employees in the digital workplace, it is helpful to step back and consider what we mean when we talk about digital literacy. The term first came into use in the 1990s, perhaps most prominently by writer Paul Gilster who wrote a seminal book on the topic in 1997[3]. By this time, a substantial body of research had already developed around related concepts such as visual, computer, media, and information literacy.

To some extent, these terms are used in an interchangeable way and the choice of definition depends on one's background, for instance, 'information literacy' is commonly used in library and information science while 'new media literacy' has emerged from media and cultural studies. Each has its own emphasis, however, and 'digital literacy' is sometimes considered an umbrella term that is inclusive of a wide range of skills needed in the digital era. Needless to say, the proliferation of terms means that digital literacy research and resources may go under a number of related labels such as e-skills, digital skills, digital competence and technological literacy.

> **"Digital literacy is about mastering ideas, not keystrokes."**

Although Gilster was writing at a relatively early stage in the digital era, his conceptualisation of digital literacy as 'being about ideas, not keystrokes' remains popular and relevant to the present, perhaps because it implies a much broader set of skills than just being able to operate a computer. Gilster elaborated this brief description further, defining digital literacy as: 'the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers'.

Since Gilster's work, many researchers and practitioners have set out definitions of digital literacy. These range from relatively narrow depictions of technical skills through to broader conceptualisations that also encapsulate the mind-sets and social practices needed to fully leverage digital for both work and daily life. The latter provide an integrative view of what is involved in using digital technologies in an effective way in various settings and for different purposes. In fact, some prefer to talk about 'digital literacies' in the plural to encompass the wide range of skills, competencies and practices involved, while others fold digital literacy into the wider concept of 'twenty-first century literacies' or 'new literacies' to represent an all-encompassing set of practices related to living in a global,
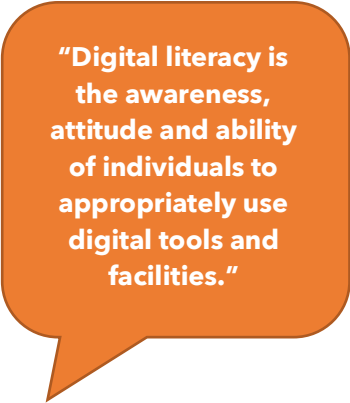
[3] Gilster (1997)

technological society. The notion of digital literacy is likely to remain fluid as technologies continue to change and new skills and practices are needed.

Work done on the DigEULit project furnishes a definition that provides a good example (if somewhat wordy!) of the broader notion of digital literacy[4]:

'Digital Literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process.'

The definition is underpinned by a layered model which depicts technology users as advancing through three stages: digital competence (in which a range of skills are gained), digital usage (in which these skills are used in an applied setting), and finally digital transformation (in which the application of skills leads to innovation and creativity). As this definition and model suggest, becoming digitally literate involves a number of stages and elements that require the individual to engage in a process of continuous learning and adaptation over time.

On this basis, the Digital Workplace Skills Framework takes as its foundation a broad conceptualisation of digital literacy that encompasses technical, cognitive, and socio-emotional skills. This is critical as it is not sufficient for employees simply to be able to operate a range of devices and applications, they also need to find and share information, communicate and collaborate, and constantly learn and adapt in order to achieve tasks, solve problems, be productive, and flourish in the digital workplace.

"Digital literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities."
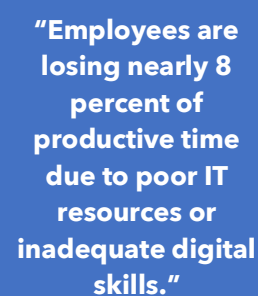
[4] Martin & Grudziecki (2006)

3. Why should organisations focus on digital literacy?

Although digital workplace technologies are now an integral part of most workplaces, and organisations are increasingly making large investments in them[5], many have learned the hard way that just implementing such technologies does not guarantee their success. For expected benefits such as improved productivity, accelerated innovation, and higher employee satisfaction to be realised it is essential that individuals adopt and use them as intended. This involves a range of elements from ensuring strategic alignment and robust governance to investment in good user experience design and ongoing change management.

It has also been shown that the digital literacy of the workforce can contribute to successful technology adoption outcomes[6]. Thus, organisations need to invest not only in the technologies, but also in the people and skills that enable the workforce to use them optimally thereby enabling what Soule et al. (2016) have described as 'digital dexterity', or the ability for the organisation as a whole to move swiftly to exploit new digital opportunities.

"Employees are losing nearly 8 percent of productive time due to poor IT resources or inadequate digital skills."

In fact, digital skills have been highlighted among the elements required for the workforce to operate effectively in the digital workplace[7]. This is underlined by findings from studies that suggest workers are wasting 22 minutes per day dealing with IT-related issues[8], and that they may be losing as much as 8 percent of productive time due to poor IT resources or inadequate digital skills[9]. A high-level of digital literacy, on the other hand, can help to reduce cognitive load for individuals when using technology, thereby freeing them to focus on the task at hand[10]. It can also enable them to quickly and conveniently access information, collaborate with others, and share knowledge, as well as solve problems more proficiently in technology-rich environments[11].

In addition, digital skills can aid inclusion and well-being in the workplace as well as the management of social relationships and identities in a virtual

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[5] One estimate from Markets and Markets (2017) suggests that the digital workplace transformation market will grow to USD 18.06 billion by 2021.
[6] Mohammadyari & Singh (2015)
[7] Briggs & Makice (2012), Kiron et al. (2016), Soule et al. (2016)
[8] CareerBuilder/ Harris Poll (2014)
[9] Van Deursen & Van Dijk (2012)
[10] Ng (2012)
[11] OECD (2016)

workplace[12]. In fact, digital literacy is seen as essential for the modern workforce and is thought to be one of the top ten workplace skills for future organisations[13].

In an extensive investigation of the state of information-processing and other high-level cognitive and interpersonal skills in the labour market, the The Organisation for Economic Co-operation and Development (OECD) found significant deficiencies among OECD countries relating to both core ICT skills and problem-solving skills in technology-rich environments. According to their research, on average only around 31.1 percent of the population of participating countries demonstrate more than basic skills in these areas, and just 5.4 percent have advanced skills. Figure 1 shows the percentage of the population in OECD-Europe countries that have more than a basic ability to use digital technology to acquire and evaluate information, communicate with others, and perform practical tasks.
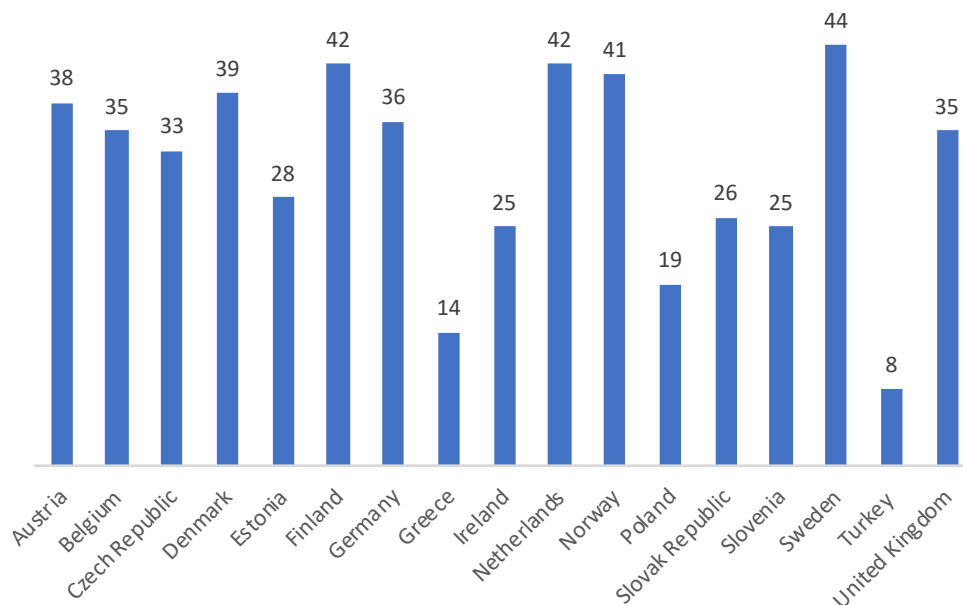
Figure 1: *Percentage of the population in OECD-Europe countries (that participated in the study) with more than just basic skills for problem solving in technology-rich environments.*

It is evident, therefore, that individuals are not necessarily arriving in organisations with sufficient digital proficiency to make the most of the digital workplace. This includes so-called 'digital natives', as suggested by the finding from a Capgemini UK study that, despite the digital savviness of younger workers, 47 percent of senior decision makers do not believe that they know how to use digital skills for work purposes[14]. This research

[12] Collard et al. (2017), Jones & Hafner (2012)
[13] Briggs & Makice (2012), Senter & McClelland (2015)
[14] Capgemini (2016)

is not alone in suggesting that growing up with digital technologies does not automatically lead to proficiency in how to leverage them within a work context.

The onus is firmly on organisations to take the initiative in digitally preparing their workforce to thrive in the digital world of work. In fact, 70 percent of employees expect their organisations to help them develop the skills to thrive in a digital environment, but only 42 percent believe this currently occurs[15]. This also involves recognizing that specific groups of employees may need different interventions and support. For instance, Eshet-Alkalai and Chajut (2010) studied the digital literacy of different age groups and found that, although younger participants had better technical skills, they performed less well on critical thinking skills than older participants. Organisations, therefore, need to develop a nuanced understanding of the digital capabilities and deficiencies of different groups of employees in order to tailor interventions and support.

Despite the evidence, it appears that many organisations are not taking the digital skills, or lack thereof, of the workforce seriously. In 2016, The House of Commons reported that almost 50 percent of UK employers have a digital skills gap in their business and that this gap is costing the UK economy an estimated GBP 63 billion a year in lost additional GDP. In addition, recent research by the European Commission on digital skills in the workplace found that 88 percent of workplaces have not taken any action to tackle the lack of digital skills of their employees[16]. This is especially worrying given that over a third report that the digital skills deficiency in their workforce is impacting on performance, with lost productivity and decreased customers the main negative impacts. Further underlining these findings, researchers in the academic sphere have shown empirically that a lack of digital skills among the workforce can reduce the organisation's ability to benefit from digital workplace technologies and participate fully in the knowledge economy.[17]

> **"One third of UK businesses say that the digital skills deficiency in their workforce is impacting on performance."**

The case for understanding and investing in the digital skills of the workforce is compelling, as the evidence corralled together in this relatively brief section demonstrates. For organisations wanting to understand the current digital skills of the workforce and develop an approach to support and improve them, the following sections provide guidance on the range of skills and competencies they need to consider.

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[15] Kiron et al. (2016)
[16] Curtarelli et al. (2017)
[17] Jones & Hafner (2012), Kiron et al. (2016), Mitrovic (2010)

4. Introducing the Digital Workplace Skills Framework

To support successful digital transformation and achieve digital dexterity, organisations need first to understand the skills, approaches and mind-sets they need to foster among their employees.

The following framework is aimed as a tool to help them develop this understanding, assess current capabilities, and underpin design of approaches to digitally upskill the workforce. It is based on a review of selected digital literacy models and frameworks (see Section 7) with a digital workplace lens based on the author's industry experience applied. Four overarching skill areas were identified, as shown in Figure 2.

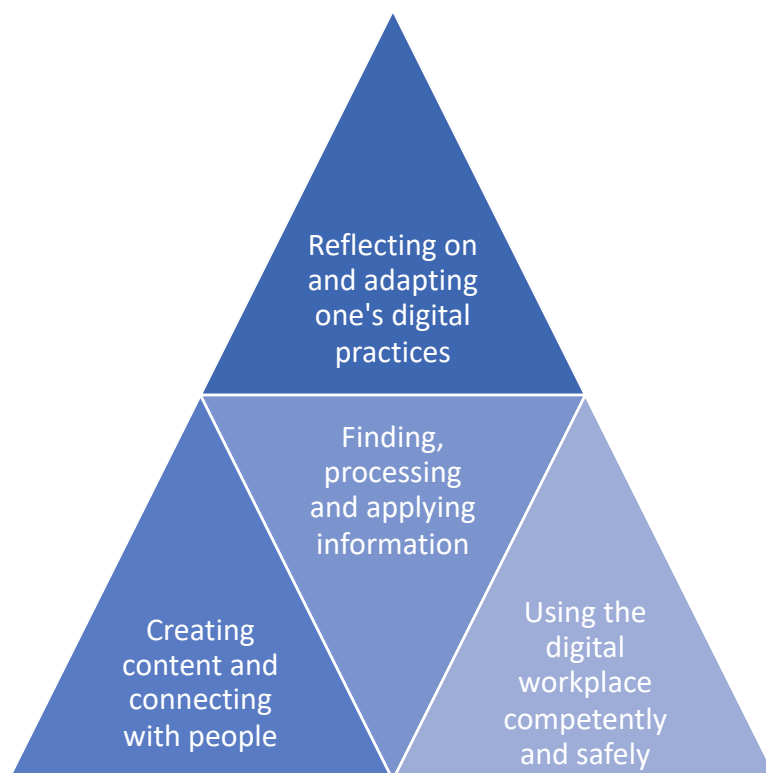**Figure 2:** *The four overarching skill areas of the Digital Workplace Skills Framework.*

These four overarching areas are then further segmented into sixteen sub-facets which describe specific areas of skill such as staying safe online, evaluating information, building relationships, and continuous learning. The full framework is outlined below and explored in greater depth in the following section:

The Digital Workplace Skills Framework

Using the digital workplace	Establish	The basic skills to use digital workplace devices and applications. Awareness of what is available, how to use it, and how to get help and support.
	Safeguard	Awareness of potential risks and issues relating to digital environments and understanding how to manage them in order to safeguard both individuals and the organisation.
	Optimise	The skills for employees to optimise their personal digital working environment in order to maximise productivity.
	Innovate	Leverage digital workplace tools and resources to come up with novel or innovative ideas, solutions, and ways of working.
Process & apply	Access	The ability to formulate a clear information need, navigate across disparate sources, and gain access to needed resources.
	Evaluate	Critically evaluating retrieved resources and interpreting their meaning in a range of formats.
	Assimilate	The ability to process a large amount of data and information from a range of sources for present and future use.
	Apply	Leverage the acquired information to perform day-to-day tasks and responsibilities as well as innovate.
Create & connect	Create	Create new resources in a range of formats, either from scratch or by re-mixing existing digital artefacts.
	Communicate	Communicate in the digital workplace using the most appropriate tools and in a manner that is suited to the audience, context, and channel.
	Relate	Establish an appropriate digital identity and use social tools effectively to connect with colleagues and build a network.
	Collaborate	The skills to work productively and effectively with others as part of a virtual team or community, including establishing trust and shared ownership.
Think & adapt	Attend	The ability to manage cognitive load in context of multiple real-time inputs and large quantities of data and information.
	Flex	The ability to work flexibly, independently and effectively by adopting tools and work practices that support both productivity and wellbeing.
	Learn	The skills to make the most of a range of learning opportunities in the digital workplace from personal learning and informal resources through to more formal mechanisms.
	Reflect	Being aware of one's digital practices, reflecting on what works well and identifying opportunities to enhance them.

Figure 3: An overview of the four skill areas and sixteen sub-facets of the Digital Workplace Skills Framework.
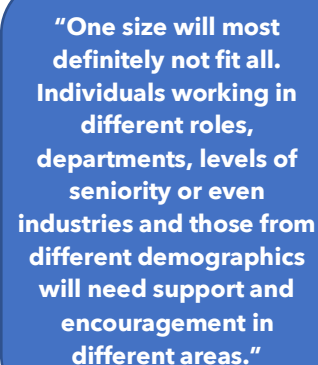
5. The Digital Workplace Skills Framework in detail

In this section, we look at each area of the framework in more detail. Because one of the key first steps in developing an approach to digitally upskilling the workforce is to assess current capabilities, examples are given of questionnaire items to assess proficiency in the various capabilities. These are intended to kick-start thinking and do not represent exhaustive lists. (Note: some items are negatively worded as this can help reduce acquiescent or extreme response bias).

Insights gathered from both quantitative and qualitative research into current skills can help cut through internal assumptions about what is needed and accurately guide efforts to improve digital skills at all levels and in all parts of the organisation. Such work is crucial to help ensure that valuable investment is not wasted in inappropriate or ineffective interventions.

It is worth highlighting that digitally upskilling the workforce should not be seen as an antidote for poorly conceived, designed or delivered digital workplace tools – in this respect, digital literacy is just one aspect (albeit a critical one) of a good practice programme that will enable successful digital workplace transformation. This wider picture is out of scope of this report although much has been written, and in great detail, about this in Digital Workplace Group's Research Programme[18].

With regard to digital skills interventions, one size will most definitely not fit all. Individuals working in different roles, departments, levels of seniority or even industries and those from different demographics will need support and encouragement in different areas. The framework provides a broad view of required skills, as a starting point for organisations to hone in on what is most relevant. Nevertheless, as we have already seen, being digitally literate requires a broad range of skills and focusing narrowly on only a few areas may hamper progress for the organisation. Note: the framework does not cover specialist skills for roles such as programmers or architects.

> "One size will most definitely not fit all. Individuals working in different roles, departments, levels of seniority or even industries and those from different demographics will need support and encouragement in different areas."

Using the digital workplace

As digital tools permeate the workplace, the core skills needed for individuals to operate effectively in the digital workplace have become essential. Yet the OECD found that over 40 percent of those using technology at work every day do not have the skills to do so effectively. Organisations need to ensure that the workforce have the fundamental skills to use the digital workplace, as well as safeguarding both themselves and the organisation while doing so. Building on this are opportunities to develop these skills further so that employees can optimise their approach to working digitally and leverage the tools to come up with innovative practices or ideas.
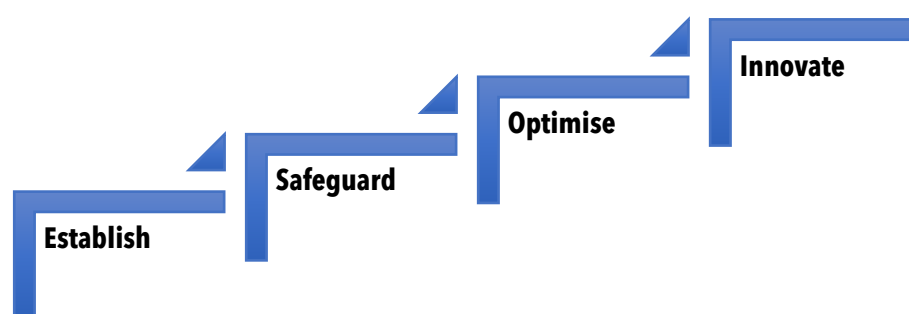
Establish

The basic skills to use digital workplace devices and applications. Awareness of what is available, how to use it, and how to get help and support.

At the foundation of the framework are the basic skills needed to use digital workplace devices (e.g. laptops, tablets, kiosks) and applications (e.g. email, holiday booking, e-learning). This starts with being aware of the range of devices and applications that are available to an employee in their job role and what the benefits are of using them. It also means having the ability to operate these tools in order for employees to perform daily tasks, work with colleagues and manage their careers.

This includes both general tools such as email and instant messaging (IM) as well as any specific tools that relate to an individual's role such as financial or customer relationship management applications. Using applications hosted in the cloud and accessing them via multiple devices is important (e.g. accessing a timesheet from a mobile device as well as the desktop) as mobile continues to make inroads inside organisations. Understanding how to connect to WIFI and VPN would also be important for those in roles that require travel or remote working.

Skills at this level also include the ability to gain competence with digital workplace tools by identifying appropriate help and resources to support

usage. This could involve locating manuals or 'how to' guides online or identifying individuals such as help desk agents or digital champions who can provide support, as well as using problem-solving skills to work through barriers or frustrations on their own.

Example items to assess 'Establish' skills:
- I'm comfortable using instant messaging for informal communication with colleagues.
- I know how to manage my email inbox without feeling overwhelmed.
- It is easy for me to find help (e.g. 'how to' guides, support desk) on using digital workplace tools.
- The digital workplace helps me to be productive in my work.
- If I find a digital workplace tool frustrating I tend to try to avoid it.

Safeguard

Awareness of potential risks and issues relating to digital environments and understanding how to manage them in order to safeguard both individuals and the organisation.

According to the Identity Management Institute, over 90 percent of data breach incidents in cyberattacks are due to employees unwittingly giving access and credentials to hackers[19]. It comes as no surprise then that a critical aspect of the framework is understanding how to use the digital workplace safely in order to safeguard both the organisation and the individual. Although this can rightly be considered part of the fundamental skillset identified in the 'Establish' category, its criticality for organisations means that it warrants being highlighted separately.

This involves protecting organisational hardware, applications and data when working inside and beyond the walls of the organisation. For employees, it means being aware of and following policies and procedures relating to technology use, intellectual property, mandated tools, client confidentiality etc. As issues and threats change, policies get updated and employees need to stay up-to-date with the latest guidelines and training. This includes knowing the procedures for disaster recovery and how a breach would be dealt with.

It also involves a general awareness of the potential issues that can arise in digital environments such as spam, data theft or bullying, as well as the practices to manage and report such issues. A basic understanding of common cybersecurity terms such as 'phishing' and 'malware' is also

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[19] https://www.identitymanagementinstitute.org/featured-articles

important. Employees need to become fluent in good practices for staying safe online, for instance, creating secure passwords, only opening attachments from known senders, keeping BYOD devices up-to-date with the latest software.

Example items to assess 'Safeguard' skills:
- Protecting digital workplace hardware, applications and data is a priority for me.
- I know where to find policies relating to appropriate technology use.
- I am familiar with the kind of risks that can arise online (e.g. bullying, data theft, spam) and how to manage them.
- Using non-mandated tools (e.g. Google Docs, Dropbox) is a practice that puts the organisation at considerable risk.
- I know what to do if I think my computer has been infiltrated.
- It is unclear to me where in the digital workplace I should/shouldn't share client information.

Optimise

The skills for employees to optimise their personal digital working environment in order to maximise productivity.

Building on the foundational skills, employees need to be able to optimise their personal digital working environment in order to maximise their productivity. This includes how to use the tools be productive, perform tasks effectively, and produce quality outputs. It may also involve the individual in providing constructive feedback (e.g. via forums or feedback forms) in order to help digital workplace teams improve the toolset.

Opportunities to customise tools can be used here to help optimise the experience. For example, subscribing to relevant information feeds, arranging links or widgets for easy access to commonly used applications or switching between different role profiles on the intranet. Where available, it also means using data to optimise performance (e.g. a travel and expenses dashboard).

Optimising the digital workplace experience for the individual user may also mean taking advantage of Bring Your Own Device (BYOD) schemes to utilise personal technology for work purposes. Doing so can bring benefits for the individual such as greater familiarity and ease with the device operation, as well as improved productivity and communication.

Example items to assess 'Optimise' skills:
- I have subscribed to news feeds that interest me in the digital workplace.
- I have a custom list of links online to enable quick access to applications I use frequently.
- I regularly use performance data in the digital workplace to fine-tune the way I work.
- I would be apprehensive about using my personal smartphone for work purposes.

Innovate

Leverage digital workplace tools and resources to come up with novel or innovative ideas, solutions, and ways of working.

Using digital workplace tools and resources to innovate may involve generating new ideas from discussions or knowledge shared online by colleagues, designing a new way for a team to work by leveraging collaboration tools, or reinventing a process with online workflow. This represents a more advanced level at which the individual employee's digital workplace competence enables them to leverage the available resources and tools in order to be creative and innovative.

Innovative use of the digital workplace involves the ability to use online tools to design job tasks and processes that optimise personal and team productivity. For example, transferring paper or manual processes to digital format and creating workflows for everyday business processes such as contract approvals or sales opportunity management which automatically trigger actions, ownership, alerts, and follow-ups. Where the technology is available, employees may even be able to build apps, pulling in data from a range of sources, to aid in common tasks.

Capabilities in this area also relate to a technological future-orientation that may manifest in having an understanding of emerging technology trends, experimenting with new tools, getting involved in pilots, or championing new digital workplace initiatives. This leads to a new set of skills that relate to, for instance, working with cognitive computing systems or workplace robots.

Example items to assess 'Innovate' skills:
- I am familiar with tools to create online workflow that helps automate day-to-day tasks and processes.
- I frequently identify ways to improve how work happens using digital workplace tools.

- I understand how to make the most of smart systems (e.g. virtual analytics or personal digital assistants) in decision-making.
- I enjoy experimenting with the latest technology in order to understand how it can be used in the workplace.

Process and apply information

Knowing how to identify, evaluate, absorb and apply information represents a core set of skills in technology-rich work environments. OECD research has shown that high-performance work practices (including how work is organised and managed) are positively related to the use of information-processing skills at work. Information literate employees are not only an asset to the organisation, the research also shows that they do better in their careers.
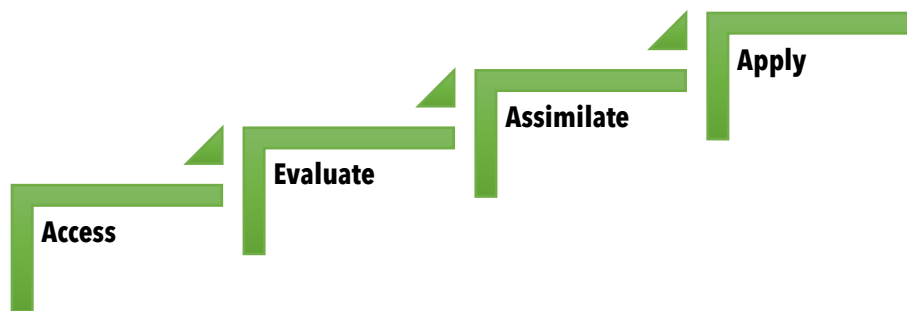
Apply

Assimilate

Evaluate

Access

Access

The ability to formulate a clear information need, navigate across disparate sources, and gain access to needed resources.

Access to information and people in the workplace is a critical need for employees. However, it presents a challenge for many, with search tools and navigation structures often unintuitive and hard-to-use. Statistics on the impacts of these issues are well known in the industry, for instance 21 percent of productivity lost through finding and managing information[20], or managers spending 2 hours per day searching for information[21]. While user experience failings of digital workplace tools cannot be compensated for by improving workforce digital literacy, organisations do need to ensure that employees have adequate skills to formulate appropriate searches and locate needed information.

Skills in this area start with the ability to formulate a clear information need (e.g. search term, question) in order to gain access to appropriate

[20] Feldman & Sherman (2004)
[21] Accenture (2007)

resources. Framing an appropriate search involves not only general principles of search construction (e.g. keywords, syntax, scope) but also understanding any specifics or 'quirks' of the organisation's search tool. For employees used to getting relatively good results from quite poorly expressed searches on Google, this can be both challenging and frustrating. This may especially be the case for new starters who are not yet steeped in the language of the organisation, including the favoured buzz words and acronyms.

With resources to satisfy an information need often located across multiple platforms using various access mechanisms (e.g. navigation menu, A-Z), another aspect of skill here relates to being able to navigate in a non-linear manner and gather together findings into a meaningful solution. This involves building up a mental map of the various sources available in order to not become lost or confused when seeking information, especially where effective enterprise search is not available. It may also involve an understanding of authentication and permissions to gain access to different sources. Satisfying an information need may also involve using web searches to identify useful external information.

As well as formulating a clear information need and executing it successfully across the digital workplace and beyond, individuals also need to understand that the information to solve problems and answer questions may reside with particular experts as well as in documents and databases. This involves being able to navigate the employee directory and any skills databases to identify and reach out to individuals with the required expertise in an appropriate manner.

Example items to assess 'Access' skills:
- I find it difficult to formulate a search query on the intranet.
- I am able to identify the information I need in the digital workplace to do my job.
- I can easily find experts to answer questions in the digital workplace.
- Finding the information I need to do my job involves a lot of wasted time.

Evaluate

Critically evaluating retrieved resources and interpreting their meaning in a range of formats.

Digital literacy research has highlighted the fact that the information bombardment or flooding that we experience online may be harming

individuals' ability to think critically about the information[22]. Although filtering tools can help us to screen information, it remains important (perhaps more so) that we also continue to hone our personal information screening skills.

Thus, a key aspect of the skills needed to process and apply information appropriately involves the ability to critically evaluate retrieved resources in terms of their validity, usefulness, relevance and timeliness. In the digital workplace, this may include checking a page publication date, identifying the latest version of a document, assessing whether the content is relevant to the task or problem, and identifying how to contact its owner. It means knowing when to 'dig deeper' in order to validate the information before using it.

The difficulty of doing so is likely to vary depending on the state of content management practices inside the organisation. Arguably, if these practices are strong there should be less evaluation work for the user. Even so, individuals should know how to judge the usefulness and suitability of information, and validate its contents against personal knowledge and other sources. This kind of assessment is also particularly pertinent to external sources, for which provenance, ownership and any bias should always be established.

Evaluation also involves understanding and interpreting the meaning of digital resources appearing in a range of different formats. This may involve using not only written materials such as reports or policies but also the ability to gain information from videos, infographics, presentations and webinars.

Example items to assess 'Evaluate' skills:
- I find it easy to assess whether content found in the digital workplace is relevant to the task or problem at hand.
- I'm comfortable interpreting information from a range of formats (e.g. content pages, videos, infographics, presentations).
- I always assess external resources (e.g. news items, documents) to make sure they are valid and trustworthy.

Assimilate
The ability to process a large amount of data and information from a range of sources for present and future use.

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[22] Eshet-Alkalai & Chajut (2010)

In addition to accessing and evaluating resources, employees also need to be competent at organising and managing what they find. This may involve processing a large amount of data, information and knowledge from a wide range of sources. Capability in this area involves successfully, recording, managing, curating, storing and organising acquired resources for both present and future use.

In the digital workplace, this may involve saving bookmarks and favourites, organising outputs from notetaking, tagging posts or sharing curated resources in a community or discussion forum. These would represent more optimal practices than, for instance, saving items on a local or shared drive.

Assimilation is also about deriving meaning from the assembled resources, for example linking together facts or ideas from different sources, deriving new insights from them, and transferring them to a new context. In knowledge management, the concept of individual absorptive capacity is used to encapsulate the employee's ability to take on board new information, recognise its value, and learn from it. This capacity depends on a number of factors such as the individual's previous related knowledge, the diversity of their networks, their motivation to learn and cognitive style.

Example items to assess 'Assimilate' skills:
- I find it easy to store and organise information found in the digital workplace.
- I regularly bookmark digital workplace resources for easy access
- I regularly extend my knowledge about topics that are important to me using information I find in the digital workplace.
- It's hard to assemble information from different sources into a coherent whole.

Apply
Leverage the acquired information to perform day-to-day tasks and responsibilities as well as innovate.

The final aspect of the processing and applying information category involves the ability to put the information that has been accessed, evaluated and assimilated to good use. This means using it to answer questions, solve problems, perform job tasks, avoid mistakes, and generate ideas. This involves formulating hypotheses about the causes of a problem based on the information identified and feeding this into the decision-making process.

To do so effectively, employees need to be able to identify and highlight the patterns, themes, and trends inherent in a large body of data and information. They also need to be able to combine the information acquired and repurpose it in fresh ways or different formats, while doing so in an appropriate and compliant manner (e.g. copyright, licensing). This is particularly pertinent in a business environment of constant flux and change, in which employees need to come up with novel solutions to unexpected problems.

Example items to assess 'Apply' skills:
- I am able to use information I find in the digital workplace to help solve problems.
- I regularly get new insights and ideas from data, information or knowledge I find online.
- Information in the digital workplace helps answer questions that I have.

Create and connect
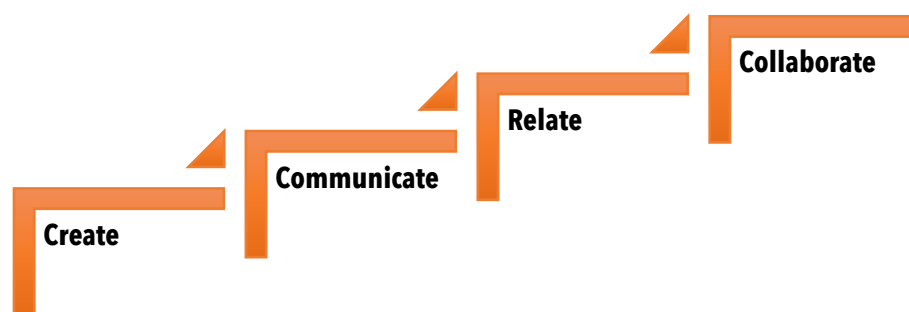
Create

The ability to create new resources in a range of formats, either from scratch or by re-mixing existing digital artefacts.

The creative aspect of the skills framework relates to creating new digital artefacts in the digital workplace (e.g. intranet pages, community posts). At a more advanced level it combines with 'Collaborate' skills to involve co-creation of content with colleagues in real-time, for instance on a virtual whiteboard or in a shared document.

This may involve creating new resources in a range of media formats from scratch or by re-mixing/ re-using existing artefacts. A quick video of a lesson learned out in the field, editing a wiki page, and a blog post about a recent win, would all be examples. All of these examples would also involve the individual in navigating any submission guidelines and

processes in order to create appropriate content and get it published in the right place.

As user-generated content in the enterprise grows, employees also need to understand ethical and copyright issues relating to digital content and how to reuse items in an appropriate manner.

Example items to assess 'Create' skills:
- I regularly create new digital artefacts from existing content and images in the digital workplace.
- I am comfortable creating a video clip to share on the intranet.
- Editing an existing wiki page is difficult for me.
- I understand the different types of licenses that apply to digital content.

Communicate

Communicate in the digital workplace using the most appropriate tools and in a manner that is suited to the audience, context, and channel.

With the average worker reportedly spending 28 percent of their time managing email[23] and nearly 15 percent of time on inefficient communications[24], understanding how to communicate confidently and fluently in the digital workplace is a critical skill for all employees.

Developing skill in this area involves having an awareness of the different channels available for employees to communicate and knowledge of which one to use for what purpose. For instance, choosing between an email, a post in a community site, an instant message, or an update to an activity feed. The ability to use a range of different channels and formats demonstrates capacity to communicate well in the digital workplace. Within each channel, it is important to know how best to process, prioritise, organise and create messages.

Employees who are skilled in this area communicate information and ideas in a manner that is appropriate to the audience, context, and format. This includes starting new discussion threads on forums and responding to existing ones in a skilful way. This is essential for individuals to participate effectively in knowledge sharing activities. Adapting the tone, length, and style of messages across different communication channels is also key. An aspect of this is sensitivity to the communication preferences of different

[23] https://www.mckinsey.com/industries/high-tech/our-insights/the-social-economy
[24] http://mitel.co.uk/newsroom/news-releases/businesses-lose-average-11000-employee-every-year-due-ineffective

colleagues or team members, and taking them into account as far as possible when crafting messages.

Communicating well in the digital workplace also involves an understanding of the 'netiquette' of online interactions. For instance, expressing disagreement in a discussion thread while remaining courteous and respectful of another's view, writing messages with consideration of how they may be perceived by the recipient, or only replying to everyone on an email where absolutely necessary. Notions of 'netiquette' can also extend to face-to-face interactions where, for example, using a smartphone during a meeting ('phubbing' in popular parlance) would be poor practice.

Example items to assess 'Communicate' skills:
- I understand the options available to me to communicate in the digital workplace, and when to use each one (e.g. email, instant messaging, discussion post).
- I regularly share information and ideas in the digital workplace.
- I tend to adapt the style of my message depending on the communication channel I'm using and the intended audience.
- Checking my messages before I send them (e.g. for mistakes) is standard practice for me.

Relate

Establish an appropriate digital identity and use social tools effectively to connect with colleagues and build a network.

Building on the communication skills outlined above, workers also need skills in relating with others using the digital workplace. This may include co-located or virtual working team mates, colleagues in other departments/ countries, senior leaders and managers, and external partners. The ability to relate well digitally is important not only for productivity and effectiveness but also for wellbeing and inclusion in the digital workplace, especially where employees work remotely.

Successfully relating in the digital workplace starts with the ability to develop and maintain an appropriate and engaging digital identity both internally (e.g. on the employee directory) and externally (e.g. on LinkedIn). This involves investing time and effort to share, for instance, an up-to-date profile photo, information about skills and interests, recent projects, status updates etc. Some of this information may be automated (e.g. driven from HR systems and collaboration platforms) but some manual effort is likely required to enrich the basic profile. Developing a rich and authentic self-representation in the digital workplace is an

important investment for employees wanting to flourish at work in the digital era. Knowing how to develop an online identity and maintain presence digitally are particularly important for remote workers.

Building a network using the digital workplace requires an understanding of how to use social tools to develop relationships as well as participating in and running inclusive and effective online meetings. This involves interacting in a socially and emotionally aware manner with a diverse range of people and groups, as well as being conscious of the impact that one's online communications may have on others. Empathy, which some research suggests may have declined due to increased technology use[25], is as important in online as offline interactions. Adoption of a global mind-set including sensitivity to differences in culture, ways of working, and viewpoints (e.g. across countries, subsidiaries, teams) is also an important aspect of relating well in the digital workplace.

Example items to assess 'Relate' skills:
- I know how to build and maintain an appropriate digital identity in the digital workplace.
- Building work relationships using the digital workplace is difficult.
- I feel confident in building my network using social tools at work.
- Emotional intelligence is very important when interacting with colleagues online.

Collaborate

The skills to work productively and effectively with others as part of a virtual team or community, including establishing trust and shared ownership.

Skills in communicating and relating online also contribute to individuals' capacity to collaborate with others using the digital workplace in order to share knowledge and achieve common tasks or goals. Employees will need to navigate a range of formal and informal collaboration environments as well as participating in both synchronous and asynchronous activities. This involves an understanding of how to work with others as part of a virtual team to solve problems, demonstrating shared ownership and accountability.

All employees need to be fluent in how to collaborate in a range of contexts from informal 'watercooler' discussions on the microblogging tool, through to more formal project collaboration with team mates and/or external partners. Participating in teleconferences, communities,

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[25] http://www.researchmaze.com/2017/07/17/does-technology-affect-empathy

discussions and wikis in a productive and effective way is central to this skill area. This may involve skills such as actively listening to team members, analysing problems without attributing blame, compromising when necessary, and taking personal responsibility for any missteps.

More advanced skills may include creating and facilitating groups in digital environments in order to help the organisation and colleagues get the most out of collaboration platforms. Those in such facilitative roles may be responsible for identifying obstacles to collaboration, mediating where conflict arises, encouraging reluctant members to contribute and giving credit where it is due.

Where gamification features such as points, badges and leaderboards are available, an understanding is needed of how benefits to one's personal profile and reputation can flow from actively participating and sharing value online. However, participating in collaborative environments means balancing personal benefits with contribution to wider organisational goals.

Employees need to understand how to build trust online (an extension of the 'Relate' capabilities) so that that virtual teams can quickly become cohesive and work effectively together. For instance, sharing information about personal interests or sharing video during calls as ways of building social capital with virtual colleagues. Trust is also key for individuals to feel that they can shared unfinished 'work in progress' in online collaboration environments, rather than only be comfortable with publishing a perfect, finished output.

Example items to assess 'Collaborate' skills:
- I am comfortable working as part of a virtual team.
- I frequently interact with others in the digital workplace while solving a problem or dealing with a task.
- I routinely use screen-sharing to work with colleagues.
- Sharing unfinished 'work in progress' online makes me uncomfortable.
- I worry what others will think if I ask a question relating to my work online.

Think and adapt
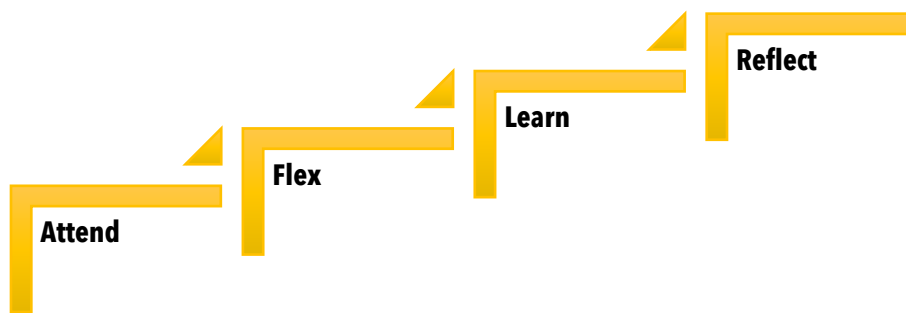
Attend

The ability to manage cognitive load in context of multiple real-time inputs and large quantities of data and information.

As employees work increasingly in the digital workplace, they need to develop the ability to manage their cognitive load in context of large quantities of data and information as well as multiple real-time inputs. This includes the capacity to switch between tasks effectively and manage distractions. This is important as researchers have found that continuous disruptions can lead to difficulty in focusing on complex problem-solving or creative idea-generation tasks[26], as well as considerable lost time (25 minutes on average) in returning to a task following a distraction[27].

Improving digital skills across the framework can help to reduce cognitive load for individuals using the digital workplace, thereby freeing them to focus on the task at hand[28]. Employees also need to develop tactics for dealing with distractions and interruptions in the digital workplace. For instance, filtering or queuing inputs or even temporarily switching off distracting tools.

This is partly about understanding the different types of work that need to be undertaken and the level of focus and attention that each require in order to tailor one's digital and physical environment to best support them. This involves communicating to colleagues about one's work patterns and practices so that expectations are set around, for example, digital presence and message response times.

Example items to assess 'Attend' skills:
- I find it easy to limit distractions in the digital workplace when I need to do focused work.

[26] Jackson, Dawson & Wilson (2001)
[27] Mark, Gudith, & Klocke (2008)
[28] Ng (2012)

- Digital workplace capabilities like instant messaging and activity feeds make me feel overwhelmed.
- I find it hard to quickly return to the task at hand following a digital interruption (e.g. IM, SMS).
- I'm concerned that colleagues will think I'm taking unwarranted time off if I'm not digitally present all of the time.

Flex

The ability to work flexibly, independently and effectively by adopting tools and work practices that support both productivity and wellbeing.

As the nature of work across both physical and digital workplaces continues to shift, workers need to be able to operate flexibly and independently across both environments. As well as drawing on the critical skills already covered in areas such as 'Communicate' and 'Collaborate' in order to act effectively as part of a virtual team, this also means being able to work autonomously and be self-motived and driven. To be skilled in the 'Flex' area also means developing an understanding of the various tools and options available for working flexibly, the benefits of adopting them, the potential pitfalls of working in this way, as well as best practices for achieving both productivity and wellbeing.

Working effectively in this way requires the ability to maintain a balance between connection and disconnection. With the digital workplace available anywhere and at any time, it is easy to become over-connected, with one study suggesting that some workers are effectively cancelling out their entire annual leave allowance due to checking email out-of-hours[29]. Maturity in working flexibility means having the ability to maintain clear boundaries around digital working despite the ability to connect at any time or place. As well as ensuring that personal time and spaces are honoured, managing work-life balance in this way provides important opportunities for psychological detachment, relaxation, and recovery[30]. Workers can avoid 'technostress' or 'digital burnout' by developing maturity in this area.

Fostering such capabilities in leaders, managers and employees may potentially be more effective and sustainable than mandating that email or other channels are switched off at certain times or not used on certain days. This also reflects the fact that optimal technology practice may vary from person to person[31]. By providing training in this area, organisations

[29] http://www.managers.org.uk/about-us/media-centre/cmi-press-releases/excess-hours-worked-cancel-out-holiday-entitlement
[30] Sonnentag, Binneswies & Mojza (2008)
[31] Mazmanian, M., Orlikowski, W. J., & Yates, J. (2013)

can also send a strong signal to its workers that it is fostering a culture in which 'always on' behaviour is not one of the norms.

Example items to assess 'Flex' skills:
- I understand the options available to me to work outside of the office (e.g. flexibly working options, digital workplace tools).
- Being self-motivated when working remotely is easy for me.
- I have agreed with my manager/team times when I am not connected (e.g. after a certain time, at weekends, on holidays).
- I suffer from 'digital burnout' due to constant connection to the digital workplace.

Learn

The skills to make the most of a range of learning opportunities in the digital workplace from personal learning and informal resources through to more formal mechanisms.

Acquiring skills to flourish in the digital workplace does not represent a one-off investment of time and energy for workers. Continuous learning is critical in order to keep up with changes to technology and developments in digital working practices. Individuals need to be ready to identify, participate in, and benefit from both formal and informal learning opportunities in the digital workplace. These may range from formal classroom training, webinars and e-learning through to community support groups, drop-in sessions, or mentoring – they may also extend to external resources such as Massively Open Online Courses (MOOCs).

Key here is fostering an attitude towards learning about the digital workplace on an ongoing basis. This may involve creating space and time for personal learning. Learning may be structured using a personal digital skills development plan to help set goals, track progress, and maintain momentum over time.

Becoming a skilled digital workplace user is not only about explicit learning but also about the implicit learning that can occur through the individual's approach to using the tools. This encompasses the willingness to learn through trial and error while using the digital workplace, accepting a certain amount of risk in trying out new practices and learning from the results. It also involves an open mind-set towards changes in the digital workplace environment and adopting new technologies and practices. This implies a high degree of adaptability in the face of rapidly changing context and demands.

Individuals with advanced digital workplace skills may also get involved in supporting colleagues with the learning process, for example by teaming up with them to provide mentoring sessions or answering questions via online communities. The role of recognised champions and mentors can be an important one in helping to model the continuous learning mind-set in relation to the digital workplace and spread good digital practices around the organisation.

Example items to assess 'Learn' skills:
- I regularly participate in learning opportunities in the digital workplace (e.g. e-learning, webinars, discussions).
- I create time for personal learning about digital workplaces devices and applications.
- I am confident in providing mentoring and coaching for colleagues on how to get the most out of the digital workplace.
- Adapting to changes in work technologies and practices takes a lot of effort.

Reflect

Being aware of one's digital practices, reflecting on what works well and identifying opportunities to enhance them.

The 'Reflect' area connects to all other aspects of the Digital Workplace Skills Framework, encompassing the skills to be self-aware while working and interacting within digital environments. It involves stepping back and reflecting on what works well and identifying opportunities to enhance one's approach, mind-set and capabilities in relation to digital tools. As well as operating at an individual level, this is also an important process for teams and groups to optimise their collective digital ways of working.

This may involve a range of practices such as
- identifying when it is best to meet face-to-face instead of digitally
- sensitivity to the impact of online interactions on emotional health
- how to maintain physical wellbeing while working digitally
- the ethical use of technology and content
- the benefits of uni-tasking versus multi-tasking
- developing mindfulness and focus in digital contexts
- understanding digital addiction and 'fear of missing out' (FOMO).

It implies awareness of the skills and knowledge one has to use technology at work, the role one gives to the digital workplace in context of life and work, and the way in which one engages with it. Together these

constitute an approach that enables the individual to truly flourish and grow in the digital world of work.

Example items to assess 'Reflect' skills:
- I regularly assess the success, or otherwise, of my digital working practices (e.g. achieving tasks or solving problems in the digital workplace).
- I sometimes forget to engage in physical activity (e.g. go for a walk, have a stretch) when working in the digital workplace.
- Our team regularly reviews our shared digital working practices to identify what works well and what we could do better.

6. What approaches can organisations take to improve digital skills?

Once a clear understanding of the current digital literacy of the workforce has been established, using the framework to assess all relevant skill areas, this information can be used to develop interventions to help employees, tailored to the specific needs of particular roles or groups. This should be done with reference to digital goals and strategies that set out a clear view of what the organisation is trying to achieve in terms of its digital workplace, and what capabilities within the workforce are critical to enable them. Although it is not within the scope of this report to go into the detail about interventions to improve the digital skills of the workforce, let us at least take a brief look at some approaches and examples.

Offering a range of approaches will help support individuals with different learning needs and styles. As well as providing formal training for employees, interventions could include **informal learning** opportunities such as drop-in sessions. These can help employees gain new skills around particular tools or applications, get hands-on with them, as well as having the opportunity to ask specific questions. Sessions could be creatively designed and named, for instance **JLL** (Jones Lang LaSalle) provide a 'genius bar' where employees can take their equipment to be fixed or gain extra training[32]. Sessions can also extend to longer events: **Warwickshire County Council** run "Google Days" where employees can drop in and try out new tools[33].

Curating content for easy access online can enable staff to draw on resources as they need them and that suit their individual learning style. These could range from in-depth courses to webinars, video clips, 'how to' guides, or hints and tips. Resources may be both from inside and beyond the organisation. For instance, online education provider **FutureLearn** offers a CPD certified course to develop digital skills in the workplace[34], and the Government of Singapore's **SkillsFuture** initiative provides organisations with digital workplace training (see below).

Another powerful element of a digital literacy programme can be **peer learning and mentoring**, with Communities of Practice (CoPs) potentially playing an important role in spreading good digital practices throughout staff. Teaming employees or managers up with a more digitally savvy

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[32] https://spacestor.com/insights/top-workplace-trends-for-2017,679
[33] http://www.hrmagazine.co.uk/article-details/are-you-heading-for-a-digital-skills-shortage
[34] https://www.futurelearn.com/courses/blended-learning-digital-skills

colleague can help build confidence by providing one-to-one support around specific questions or issues. **Bosch** have used a mentoring approach to help senior leaders gain digitally savvy[35]. For **Cancer Research UK**, it has proved a good approach for developing Digital Champions (see below).

It is important that the effectiveness of such approaches is understood by actively **monitoring progress**. This means assessing digital skills at periodic intervals to understand progress and which approaches are working well and tailor interventions. Gamification elements such as badges and leaderboards can provide a real-time view of staff engagement with digital skills training. For example, charitable organanisation, **NCVO** uses a leaderboard to make progress visible and encourage some friendly competition (see below).

As well as improving the digital skills of the workforce through a mix of formal and informal training, consideration can also be given to building workforce readiness for digital working through **recruitment**. Prioritising digital skills when recruiting new staff can help where a digital skills gap has been identified. These new employees will be prime candidates to get involved with mentoring or championing roles, thereby helping to build digital competence and confidence in the wider workforce.

While far from an exhaustive list, these interventions demonstrate some of the possibilities for organisations to develop a creative and diverse approach to developing the digital skills of the workforce. Examples of organisations successfully implementing such programmes help to bring to life such interventions and approaches, a few of which are highlighted here.

[35] https://www.youtube.com/watch?v=gw_Zp9Qsuvc

NCVO's Learning Lab

The National Council for Voluntary Organisations (NCVO) is a charity that supports the voluntary and community sector in the UK. It has around 100 employees. A digital skills programme, called 'Learning Lab', has reportedly engaged 70 percent of current staff, with 95 percent saying that they felt more confident after attending a session[36].

The programme formed part of a 5-year strategy, defined in 2014, in which digital played a key role. It recognised that as well as building the tools, the organisation also needed to support staff in gaining digital skills and confidence. An all-staff survey was used to identify skills/ gaps. Although digital literacy levels were found to be sufficient, the survey identified that people needed help building confidence to try out new tools and ways of working. To keep costs down, the Digital Communications team developed the sessions in-house, following a 6-month research and planning phase.

The 'Learning Lab' approach includes sessions covering a range of tools and approaches, a library of resources, as well as peer support and informal sharing.

Figure 4: *Attendees are added to a leaderboard when they get six badges* [37].

NCVO have shared a toolkit online so that other organisations can make use of the templates, resources, and guidance it has developed as a result of its internal digital skills programme.

[36] https://blogs.ncvo.org.uk/2016/04/19/building-a-digital-workforce
[37] https://askcharity.charitycomms.org.uk/articles/culture-confidence-and-cats-building-a-digital-workforce

Cancer Research UK

Cancer Research UK (CRUK) is a cancer research and awareness charity with nearly 4,000 employees across the United Kingdom. To support its goal of 3 in 4 people surviving cancer by 2034, it has been working on becoming a more digital organisation, including building the digital skills and confidence of its people[38]. At the core of this is its hub and spoke model, in which the Digital Team works with parts of the organisation to increase both digital capabilities and skills.

To help spread digital skills and confidence throughout the organization, the Digital Team have established a Digital Champions scheme. Champions receive support in the form of mentors to help develop their digital personal development plan, face-to-face training, a Slack channel for questions and ideas, and twice weekly 'Digital Hour' drop-in sessions.
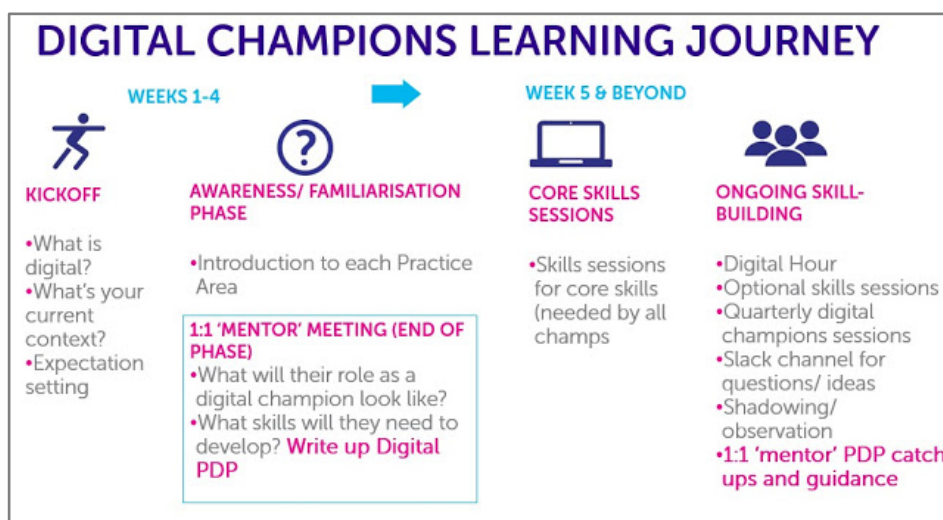
DIGITAL CHAMPIONS LEARNING JOURNEY

WEEKS 1-4

KICKOFF
- What is digital?
- What's your current context?
- Expectation setting

AWARENESS/ FAMILIARISATION PHASE
- Introduction to each Practice Area

1:1 'MENTOR' MEETING (END OF PHASE)
- What will their role as a digital champion look like?
- What skills will they need to develop? **Write up Digital PDP**

WEEK 5 & BEYOND

CORE SKILLS SESSIONS
- Skills sessions for core skills (needed by all champs)

ONGOING SKILL-BUILDING
- Digital Hour
- Optional skills sessions
- Quarterly digital champions sessions
- Slack channel for questions/ ideas
- Shadowing/ observation
- **1:1 'mentor' PDP catch ups and guidance**

Figure 5: *Digital Champions are supported through an 8-week learning journey.*

The Digital Team report real world positive impacts as a result of the Digital Champion programme, including big increases in participants' digital confidence levels, as well as reshaping roles and teams around new ways of working.

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[38] http://modernworkplacelearning.com/magazine/building-digital-confidence-at-cancer-research-uk

Government of Singapore's SkillsFuture for Digital Workplace

In 2017, the Singaporean government launched SkillsFuture for Digital Workplace, an initiative aimed at ensuring that its people have the right skills and mind-set to work digitally[39]. The programme, delivered via a 2-day workshop, aims to equip Singaporeans with the ability to work successfully in a technology-rich environment, covering areas such as use of mobile apps, awareness of cyber-security, understanding of how to use data and information, and the ability to achieve functional outcomes in the digital workplace and beyond. It also focuses on ongoing development by helping participants develop an action plan to continue learning[40].

Depending on the training delivery partner, modules include:
- Using workplace productivity and collaboration tools such as Slack and Trello.
- Hands-on introduction to cognitive computing and how to interact with smart applications.
- Transforming paper and manual processes to digital format and creating workflow.
- Getting the most out of enterprise social networking.
- Using gamification in the digital workplace.
- Safeguarding work applications.
- Using technology to enhance personal productivity and innovation.

Importantly, the programme places the focus not only on functional skills, but also on helping employees to develop the right mind-set to meet and embrace ongoing technological change in the workplace and take advantage of new technologies for life and work.

[39] https://www.opengovasia.com/articles/8109-skillsfuture-for-digital-workplace-launched-in-singapore-to-prepare-singaporeans-for-the-digital-economy
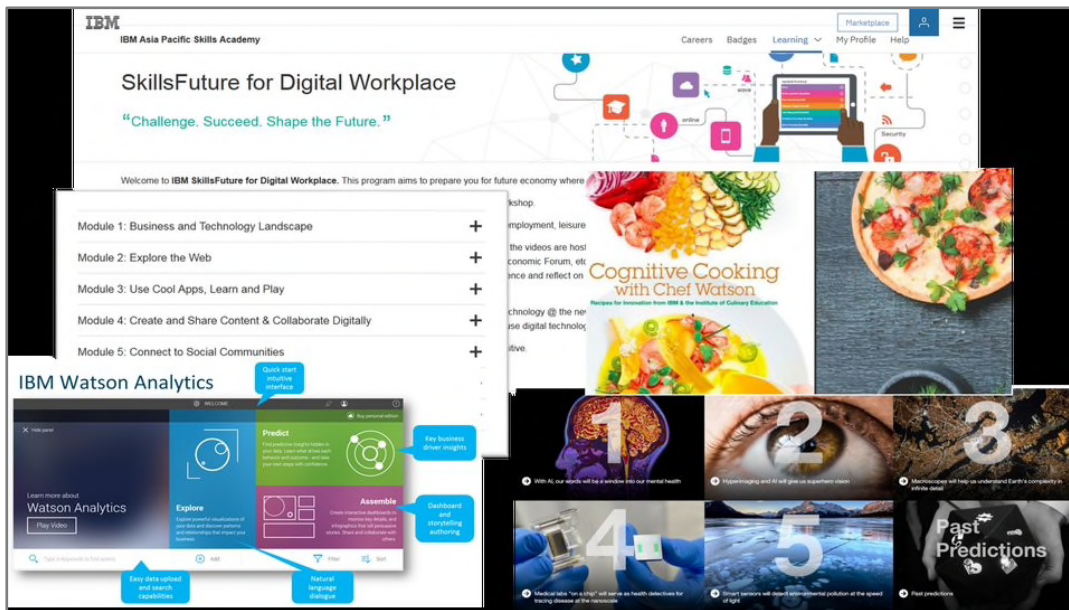[40] http://www.skillsfuture.sg/digitalworkplace#whatisit

Figure 6: *Technology partners such as IBM and Samsung are involved in delivery of tailored versions of the programme[41].*

Tailored versions of the programme are being delivered for specific industries using a range of training partners. For instance, the Council for Estate Agencies (CEA) and NTUC LearningHub have tailored the programme for real estate professionals, while the Asian Culinary Institute (ACI) offer a version specifically for hospitality workers. These tailored programmes include a range of stimulating learning experiences such as a field trip to the National Design Centre with hands-on 3D printing experience, as well as opportunities to try out technologies such as virtual reality and cognitive computing.

The pilot programme has reportedly received positive feedback. 4,600 Singaporeans have already been through the programme[42], with major organisations such as Singtel, Maybank, Courts and SIA Engineering Company sending staff on it. In October 2017, over 35 companies had committed to sending staff on the programme in the following 12 months.

[41] https://www.ibm.com/sg-en/marketplace/skillsfuture-for-digital-workplace
[42] https://www.channelnewsasia.com/news/singapore/more-than-285-000-singaporeans-benefited-from-skillsfuture-9915914

7. Resources

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