Development, supply, deployment, demand: Balancing the museum digital skills ecosystem

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Abstract

Skills matter. The digital literacy of the workforce remains one of the key challenges for the adoption of technology within museums (NMC, 2015; 2016). According to Nesta, the AHRC and ACE (2014; 2015), over a third of museums in England still feel that they do not have the in-house skills to meet their digital aspirations, and rather than improving, some digital skills areas have decreased. The latest findings (Nesta and ACE, 2017) report a "lack of confidence" as a barrier—more so than the cultural sector as a whole. Addressing this pressing issue, the aim of the UK's "One by One" national project, is to work over the next two years to understand how to deliver a transformative framework for museum workforce digital literacy. This paper is the first sharing, internationally, of the emerging findings of the initial phase of the "One by One" research. Combining museology with leading-edge employment studies, the paper attempts to evidence the development, supply, demand, and deployment of digital skills in the UK museum sector, identifying key actors and mapping typical employment patterns and skills policies. The paper shares how digital skills are currently developed and recruited, how demand is articulated, what skills gaps exist, and what challenges impede skill development and deployment. Furthermore, it explores the shift from "technical skills" to "digital literacies" — what this shift represents, and the facilitators and inhibitors related to this shift that are recognized within the sector.

Keywords: skills, training, digital literacy, workforce, transformation


1. Introduction: Building the digital literacies of UK museums

The notions of museum visit and museum object, collection and exhibition, have all been disrupted and renegotiated by the influence of five decades of digital technology. “Digital” has changed the idiom of “museum”(Parry, 2007; 2010). And yet, it is widely recognized that the digital literacy of the museum workforce remains one of the key challenges continuing to impede the adoption of technology within the sector (NMC, 2015; 2016). According to Nesta, the Arts and Humanities Research Council (AHRC) and Arts Council England (ACE) (2014; 2015), over a third of museums in England still feel that they do not have the in-house skills
to meet their digital aspirations, and rather than improving, some digital skills areas have decreased. Challengingly, the most recent findings captured in the UK Government’s “Culture is Digital” report, point to a cultural sector as a whole with “particular skills gaps around intellectual property and data analysis” (DCMS, 2018). Addressing this pressing issue, the aim of the “One by One” project is to leverage interdisciplinary scholarship, and specifically the concept of the “postdigital museum,” to understand how to deliver a transformative framework for museum workforce digital literacy.

Specifically, this research is investigating the following: the existing profile and reach of workforce digital development in UK museums; what new digital literacies are necessary for working in (or to become) a digitally mature museum in the UK today; and what the most appropriate “activations” are, and ways of supporting each of these digital literacies, within different museum settings—be that internally/externally, formal/informal, accredited/non-accredited, for individuals/teams.

Intellectually, the project harnesses an important recent shift in museological research around digital. A decade ago, the “cultural turn” in digital heritage research was marked by a new theorizing of the subject (Parry, 2005; Cameron and Kenderdine, 2006). From “visualization” (Ch’ng et al., 2013), to “participation” (Kouper, 2016; Ridge 2014), and from mobile media (Tallon and Walker, 2008), to social media (Charitonos et al., 2012; Drotner and Schröder, 2013; McKenzie and Poole, 2011), few areas of digital media in museums have in this time eluded scholarly investigation. However, it is only more recently that another discourse (“the postdigital”) has begun to offer an alternative conceptual framework in which museum studies research can engage with digital without defaulting to routine questions around technological “innovation” and “adoption” (Parry, 2013; Edmundson, 2015; Wellington and Oliver, 2015; Kelly, 2016). The postdigital is allowing us to think about the museum after the digital revolution, where digital is managed normatively, and where digital pervasively becomes innate within a range of operations and definitions within the museum. Using this progressive conceptual framework, the “One by One” project aims to evidence the extent to which digital maturity is emerging within UK museums. In doing so, this project builds upon a body of scholarship that has focused on museum workforce skills and literacies. Importantly, this previous scholarship has shown that perceptions of the literacies required by professionals have changed over time (Marty, 2006: 331); that, with IT orientated roles, the museum sector can struggle to compete with other sectors (Davies, 2007); that the creative industries sector skills gaps are intensifying in part due to the speed of digital change (Creative and Cultural Skills, 2011: 45; Howard, 2016); that the interplay of skills and knowledge required for modern digital curatorship is complex (Jeonghyun et al., 2013); and that some modeling of these literacies and how they might be leveraged by the sector is possible (Baker, 2013). However—as mostly surveys of existing provision—what this existing research has not attempted or investigated are substantive approaches to developing alternative and progressive approaches to digital literacy development within the museum sector. Addressing this methodological gap, the “One by One” project is using humanities scholarship to design, empirically test, and propose this alternative training and development provision.

This research also builds upon several years of a foundation study and international collaboration. In April 2014, higher education training providers from around the world met
(at MW14) to frame the “Baltimore Principles,” articulating the step changes needed for the next generation of digital training provision in the museum sector (NMC, 2016: 24). The “Baltimore Principles” (a vivid example of postdigital thinking) were unequivocal in their call for a shift in the way we think about digital training in museums. They asked for a move from thinking about “technical skills” around specific forms of technology, to thinking instead about “digital literacies” and forms of creative (and design) thinking; a move from digital training being “about technology,” to being “with technology.” They encouraged a switch in emphasis from “reactive training” within an institution (where skills can become siloed), to “strategic improvement and professional development” for the whole institution, where literacies and ways of thinking and making can, instead, become pervasive and naturalized. And they challenged education providers to think about a training offer that was less didactic, and more discursive; about an evolving collective expertise, rather than about a set of specific experts; outward looking, rather than inward looking; on-going, and not time-bound; for everyone in the institution, not just an IT few. Working from these principles, the “One by One” project aims to deliver a framework to support this step change within the museum sector.

This works also draws upon a series of action research projects that since 2010 have evidenced and formulated ways of planning, investing, and collaborating on the development of the next generation of digital cultural activity (Finnis et al., 2011). Led by the non-profit digital cultural publishing organization Culture24, and involving museum and heritage institutions across the UK, the “Let’s Get Real” research program has not only underscored the skills and knowledge gaps around digital within the sector, but has done so through a distributive community of practice. Leveraging this proven (action-based) approach, “One by One” draws upon this existing evidence base and harnesses these established networks.

In short, “One by One” offers a continued scrutiny of the concept of the “postdigital museum,” a further interrogation of the “Baltimore Principles,” and the proposition of an alternative workforce development framework.

2. Conceptualizing a “skills ecosystem”

The objective of the first phase of the project (running September 2017 to February 2018) has been to map how digital skills are currently supplied, developed, and deployed in the UK museum sector, and to pinpoint current changes in the demand around these skills. To understand this context, a mixed methods approach has been adopted. First, a desk-based review of digital skills and literacies in the museums sector has been undertaken. This understanding has been further developed through six case studies of museums in England, Scotland, and Wales, at Amgueddfa Cymru–National Museum Wales; National Museums Scotland; National Army Museum; Royal Pavilion and Museums Brighton and Hove; Derby Museums Trust; and Museum of London. In each case, interviews have been conducted with a range of museum staff and managers, along with analysis of museum strategies and documentation, plus non-participant observation. Crucially, the aim has been to gain in-depth understanding of how digital skills are articulated, developed, and used within the museum context through the actors involved and their interpretations. It is through the complexity of a single museum case study alongside the comparative analysis of multiple case studies that in-depth insights into museums’ ecosystems can be produced.
Informed by employment studies scholarship, this initial phase of research conceptualizes museum digital skills as an “ecosystem.” The concept of the skills ecosystem was developed by Finegold (1999) and later developed by others (such as Anderson and Warhurst, 2012; Buchanan et al., 2001), to provide a framework in which to understand the context and conditions of skills demand, supply, deployment, and development within a context—be it an organization, a sector, or a national economy. Recent research highlights the importance of understanding the context of skills recognizing that a range of mechanisms are at play within an ecosystem (Buchanan et al., 2017). The four elements (of skills demand, supply, deployment and development) have been found to be common across what were defined as self-sustaining skills ecosystems (Anderson and Warhurst, 2012; Buchanan et al., 2001; Finegold, 1999). These skills ecosystems were noted to “generate positive, mutually reinforcing dynamic that fuels ongoing knowledge creation and growth and adaption to changing competitive conditions” (Finegold, 1999: 61). Therefore today, it is a widely used concept to understand how skills are utilized and can be adapted to changing labor markets and work conditions.

This “skills ecosystem” concept was developed as a way to move beyond the commonly used “supply and demand” model of skills, in order to take account of wider and more complex educational, economic, and political contexts that can impact on skills within a given context. Critically, it is factors such as business setting, structure of jobs, work organization, and training, that are linked within this framework to understand the development and deployment of skills (Buchanan et al., 2017; Buchanan et al., 2001; Finegold, 1999; Windsor and Alcorso, 2008). Within skill ecosystems, it is recognized that advanced and specialist skills are deployed and developed through a range of mechanisms such as workforce development strategies, structure of jobs, innovative work environments, and career progression (Buchanan, 2017; Finegold, 1999). Recent international evidence suggests that within national and local contexts, a skills ecosystem can be changed to improve skills utilization and employability, combat unemployment, meet skills needs, and support profitability and growth (OECD/ILO, 2017). Consequently, for considerations of museum digital skills (and for the “One by One” research in particular), the concept of skills ecosystems provides a subtler and more differentiating framework within which to explore and question how, where, and why skills are developed, utilized, and sustained within an organization or sector.

### 3. Understanding the skills ecosystem in the context of the museum sector

The skills ecosystem is defined by four interdependencies: supply, demand, deployment, and development. Supply is considered to be the “nourishment” of the system (Finegold, 1999). There is an emphasis on recruitment—extending skills, expertise, and knowledge through new staff. Recruitment to an organization or a sector, however, is associated with its ability to attract those with the right (or demanded) skills, expertise, knowledge, and/or qualifications by offering salaries commensurate with the same roles in other sectors. Evidence from the case study museums suggest that many do not have the resources to offer commensurate salaries, particularly for digital or IT roles. However, evidence on positive ecosystems highlights the multi-dimensional element of the system with a need to address all sides of skills (Windsor and Alcorso, 2008). Supply is, therefore, also about career development pathways and strategies that focus on retention.
Within an ecosystem, it is recognized that recruitment can often not meet the skill demands of the system (Finegold, 1999); these skills can be generic, transferable, and/or specialized. Demand is concerned with recognizing what skills are needed in the ecosystem and what may be needed in the future to address the changing context. Demand is sometimes seen as playing a role in driving change and stimulating innovation and development within an ecosystem (Buchanan et al., 2001). So, within the museum sector, the drive to digital is inevitably demanding specialized skills, expertise, and knowledge, in order, for example, to manage and catalogue collections, to shape exhibitions, to disseminate knowledge, and to engage current and new audiences.

Deployment within the skills ecosystem defines how skills are utilized and effectively practiced within the context. Ecosystems benefit when the skills, expertise, and knowledge of the workforce are utilized well (Anderson and Warhurst, 2012). Utilization can be about changing job roles and structures to facilitate multi-skilling. It is intrinsically linked to skill development. Within the case study museums, this was evidenced by individual roles that had, reportedly, expanded to include digital responsibilities. For example, curatorial roles have expanded to include the production of digital content on artifacts, and traditional AV roles have changed to include the installation and maintenance of more complex digital interactives.

Development is focused on how skills, competencies, and expertise are nurtured within a context and, importantly, goes beyond training interventions. Skills development can be part of formal learning, in-house or on-the-job training, or informal learning. As suggested by some, skills development within an ecosystem can be effective where experimentation is fostered and supported (Buchanan et al., 2001). Within the museum context, where the workforce is encouraged and supported in their use of technology, skills can be developed. This in the medium term leads to a more digitally confident workforce—a digitally literate workforce. Within the case study museums, evidence of experimentation was found in the use of social media tools (such as Instagram, Twitter and Periscope) and/or live streaming to reach and engage new audiences.

4. Identifying the characteristics of a changing museum digital skills ecosystem: Initial findings

The demand, supply, deployment, and development dimensions of the ecosystem framework help to reveal (and evidence) the ways museums are starting to challenge traditional systems.
Demand: from “technical skills” to “digital literacy”

Across the case study museums, it was evident that demand has been for a workforce with technical skills (such as AV maintenance, Web programming language, database management) specific to the needs of the organization and its activities. Technical skills may have been prioritized as a result of financial constraints, where resources are not available to recruit more generally to expand the workforce. There are examples of where specialists have been recruited on a short-term contract, or agencies hired to bring in specific skills to meet a demand that cannot be met in-house. For example, one museum representative spoke of project demands for specific skills:

*When we’ve got big capital projects like opening a new gallery, where there’s a lot more demand on our team to kind of do content that goes into the gallery, we’ll sometimes get short-term members of staff for, like, nine-month contracts. So […] this time last year […] we were a team of eight, so we had, like, a filmmaker embedded and someone to help us with the content and another producer.*

Once the contract is finished, the skills are often lost and would need to be bought in again. However, there are examples of demand shifting from technical skills to digital literacy, as illustrated here by two museum managers talking about the shift in demand:

*Digital is just another way of interpreting something. Or communicating with someone about something. And if you’re communicating with a written bit of text, you can easily*
communicate that digitally. And we hope that everybody understands that and everybody thinks about and considers digital as a way to communicate, and I think they’re beginning to.

and

So, we see digital cropping up in exhibitions. We see people talking about hashtags and wanting to know what it means. We see people wanting to include digital in exhibitions, which... you know, without prompting. So, I knew the Imperial War Museum [...] they’ve just changed their roles of digital interpretation officers to just be interpretation, because they’ve dropped the digital, because actually, it’s not a standalone thing. It fits in as part of an interpretive strategy and your digital is just one strand of it, for exhibitions, for example.

Case study museums interviewees also spoke of the increasing expectations of audiences and the need to reach wider (and new) audiences. A curator talked about the need to meet visitor expectations:

I think meeting the expectations of our visitors and stakeholders, well, various stakeholders, but our visitors and users of our collections. That’s a massive driver. And just improving access to collections and adding context to objects, stories, galleries.

This has resulted in, for example, demands to use technology to be more creative and innovative, to be up-to-date, and to keep up with others (not just those in the sector), as well as engage with new forms of dissemination and communication. The case study museums were found to be engaging with social media, creating new forms of interactives in exhibitions, and communicating live with geographically dispersed audiences. Whilst there is evidence of museums actively addressing the digital demands of the sector, many expressed caution about investing (both financially and in terms of upskilling the workforce) in new technology. This was caveated with a need to stand back and see what others did, and then share learning and good practice.

**Supply: from “qualifications and expertise” to “competence and confidence”**

The case study museums had, in the past, recruited a workforce with a particular set of qualifications and expertise—a focus on specific technical skills. For example, curatorial staff were recruited with museology, history, and arts qualifications; external relations staff with marketing qualifications; and IT staff with computing qualifications and expertise. There were some examples of how museums were rethinking how skills, particularly digital, were supplied to the museum (see also Hutchinson and Cartmell, 2016; Shipp, 2016), as illustrated here by a digital manager:

At one point I was like [...] we’ve got to start including digital literacy in every role that was advertised by the museum. But actually, I’ve got confidence that a lot of the managers will see that applying that competency within their own subject areas is probably more valuable than me putting a random strapline in about being digitally competent. So, they can focus it around say, with a curator, experience of making, producing content for social media. And then it’s [...] They’ll own that. But what you can [do] then [is] come in and support that individual to, firstly, understand the organization, but also to have them planning campaigns together and quite critically have them evaluate the impact of what they’re doing.
For example, engaging young people to do social media around specific events, and volunteers to fill workforce skill gaps. There was also evidence of museums recruiting individuals with a range of digital competences and confidence, who were able to take on a digital task or role and competently apply their knowledge to a range of digital tasks and technologies. Those that had prioritized wider digital literacy and demanded “generalists” in terms of digital skills talked about the benefits these individuals brought to the museum, for instance one museum representative said the following:

Some people are trying to really specialize in what they offer, but there are lots of people who are kind of [...] have a general skill set when it comes to digital, so they’ve done a bit of website management, they’ve done a bit of publications. So, you kind of get these generalists who are [...] used to working in big cultural organizations, but, of course, they’ve done a lot of digital kind of projects, and they’re the people who are probably more valuable than the specialists, because you have three or four people doing in-house development, I’ll just have one super developer on the team.

Recruiting varied forms of digital competence and confidence was reported by a number of the museum staff interviewed. When recruiting staff for certain roles, the focus may be on the candidate’s experience and confidence in using various digital tools and platforms, and not on their qualifications or experience that are directly relevant to the museum. For instance, one museum manager said:

The [...] posts that we have, they’ve all [...] chosen to apply for those positions because of the digital aspect to it. [...] They’re primarily interested in creating online content or using digital technologies. [...] They have got an interest in working in the museum, but from a point of view of combining that with digital. [...] They’re museum digital people.

It is interesting to note that some of the museum workforce may have digital competences when they join the museum or develop these while they are in post. Many were found to have successfully deployed digital competences. These competences then become part of the demand, as the interviewee working in a museum’s HR department explained:

[sometimes] we find someone that accidentally has [digital] skills, and maybe, if we’re good, we remember then to put it in the job description when that person leaves.

This highlights the interaction between demand and supply, which is also found when issues of deployment are examined.

**Deployment: from “limited use” to “flexible influence”**

In skills ecosystems focused on technical skills, there can be limitations in how these skills and competences can be used or deployed. For example, evidence from the case study museums illustrate how the UK museum sector is having to adapt in response to demand and supply issues, but that it is struggling with the tension between specialist technical skills and generalist digital skills and literacies. Digital skills are typically deployed in four main museum activities. First, digitalizing collections and opening the digitalized records up to a wider public audience. This area of deployment requires knowledge of digital archiving and databases, as well as expertise around IP and copyright. It draws mainly on the skills of a reasonably small group of specialists. Second, digital skills are used in Web-presence and social media activities. The skills deployed here range from those provided by specialists (for example Web
usage statistics, audience engagement techniques, and the production of specialist content),
to more basic skills provided by a wider range of museum staff and volunteers (such as
contributing tweets and Instagram posts). For instance, one digital officer talked about how
social media is a shared responsibility in their museum:

So, [colleague’s name] manages that now, but we basically [...] we started with just the one
account, and then we’ve got a few other accounts now, and we allow staff to have their own
account and they can mention the museum and they can do what they like. And we trust
people. There’s no accountability [...] And social media is about being social [...] it’s not an
advertising tool. It may have that function, as well, but actually, it’s about being social with
people. It’s about working with people in a friendly way, and that means it’s useful for people
to know who we are and believe that we’re people. It’s not just a machine producing tweets.

Third, the use of digital technology in exhibitions, as well as learning and outreach activities
illustrates where deployment requires specialist skills at the interface of AV and IT (how
something can be made to happen) and curatorial/pedagogical skills (what works with
different audiences). This is illustrated by one curator who has learnt to scan in order to
digitize objects for use in the museum’s education program:

There was a scrapbook of this particular suffragette, a local lady. And the scrapbook itself was
in such a fragile state that we wanted to use it for an educational resource, schools resource,
and we wouldn’t have been able to allow close contact with that item, with that object. [...] So,
I digitized all of the pages of the scrapbook, and now they’re on a tablet, or a couple of tablets,
for schools and children to look through and research. So again, that’s allowing access.

Fourth, digital skills are used in operational management and communication activities. And
here, the case studies in the “One by One” research currently evidence varying use of digital
technology to connect departments and staff across the organizations—such as sharing of
files and calendars, learning resources, HR self-services, and electronic communication. These
represent digital skills that are, to a large extent, not specific to museums.

This range of activities not only highlights how digital is deployed throughout the UK museum
workforce, but also how a number of traditional museum roles across the organization will
have changed (see also MU.Sa, 2017). It is evident that there is a shift taking place from
singular and localized responsibility for digital, to any activity that is collective and distributed
across the organization. So, for example, digital is part of everyone’s role, and some case
study museums have recognized the need to mainstream digital into all that the museum
does, and to connect digital into all considerations, as discussed here by one museum
manager:

[...] there’s nobody here whose role is entirely digital. And there’s nobody here whose role is
entirely analogue, I wouldn’t have said. Everybody does something digitally, even if it’s writing
letters and printing them out, there’s some digital activity, sending emails or whatever it is.
And I think that’s kind of normal in life, now, isn’t it? I’d hope. [...] There are a few people,
maybe, who... you know, our front of house staff now have an iPad that they use. They can
look at e-mails on it, they can look things up on it, they can find out information, they can
work the diaries on it. They only have one between them. There’s five staff who work here. [...] Even our café manager has... you know, the music in the café is on Spotify, you know, it’s
digital stuff.
Therefore, digital is not additive, but instead constitutive—and part of the initial thinking and conversation around new exhibits and displays. A digitally confident workforce will arguably be adaptable, and able to shape how technology is adopted and used across a range of museum activities.

**Development: from “siloed training” to “agile learning”**

Developing digital skills and literacy is considered particularly challenging within the museum context, as a number of factors impacting the sector result in a high demand for workforce development. For instance, the workforce spoke of the speed of technological change and keeping pace to not only meet audience expectations, but to also remain competitive. One curator talked about keeping their digital skills up-to-date as part of their professional practice:

*Yes, you’re always just picking on these things as you sort of go along. And then the stuff is there for us to use, and because that’s all open source, most of its open source, I can then go home and keep my learning up at home. So, I do tend to, I mean, personally, I try and stay as much up to date with digital as I can [...] I think it’s important professionally, but I’m also personally interested.*

Digital literacy is, to some degree, becoming a greater integrated part of museums as roles develop to include digital activities. Therefore, recognizing that there is a need, for some, to upskill and reskill in terms of digital.

Current practices around the development of digital within the museum sector seem to be undertaken on an ad hoc basis. Few of the case study museums had formal or, what can be considered, traditional approaches to developing digital skills and competences. Most training is designed to meet specific needs and often carried out on a one-to-one basis when requested. One museum representative spoke of digital literacy training and the need for a more developed and long-term program of support for digital literacy and competence:

*We don’t have a kind of program of kind of digital up-skilling. I mean, our team [digital team] will do training around Twitter, writing to the web, and some of the things like that. And then the photography team do how to take object photos with curators, so pockets of activity, but the organization hasn’t quite worked out how to do a sustained long-term program of up-skilling people in terms of just basic digital literacy, so how do I use Microsoft Office 365, what are the tools out there that will help me do my specific job better? We haven’t quite got that and we don’t have that person who kind of bridges the gap between our ICT team and our training team.*

This highlights some of the challenges of trying to integrate digital training across the varied roles within the museum context. An ad hoc approach to workforce development that is undertaken on a one-to-one basis means that digital literacy becomes siloed and experiences are not shared. In response, museums are changing these forms of development to more innovative approaches and informal learning amongst colleagues and museums. Supporting and enabling the workforce to “test and learn” digital activities (such as social media, blogging, vlogging, and live streaming) was common practice across a number of the case study museums. For example, one museum representative said that staff are experimenting with videos and live streaming:
There’s much more video around now [...] some of the team are, sort of, self-taught on creating and editing videos that we will then put on the website, that we will put through social media. So, we’ll do some of that ourselves. [...] So, we’re learning lots of skills and kind of trial and error, but it’s good. It’s quite organic. [...] If you take somebody on who has some skill and is keen to do it, they are more likely to push it. So, we’ve had a couple of new people in the team, so they’ve brought some level of skill. And they’ve been sharing it with other people and then sort of training across the team.

This is a vivid example of how bringing in new staff with digital competences and confidence can support the museum workforce in developing and deploying digital skills. However, more evidence is needed on whether embedding the development of digital literacy and competences across museum roles results in a museum that is more agile and responsive to changing technology. One museum representative gave an example of how they are trying to develop digital confidence:

So we set up a team of digital champions within the Learning Department because we recognize that skills and things were sort of falling behind other organizations, and there’s a lot of people quite frightened of digital. So we set up a team [...] some were naturally drawn to digital and others wanted to improve their skills.

5. Conclusion: Adapting the digital skills ecosystem for museums

The early findings of the “One by One” research project point to an existing mindset, evident within the UK museum sector, that assumes digital skills relate to specific technical skills. This is a mindset in which the key digital challenge for museums is seen in terms of needing to react to a changing set of specific hardware and software technologies. This is a system in which specific technical skills are then prioritized, leading to the recruitment of particular sets of qualifications and expertise. These finite technical competences are then not only limited in how they can be deployed in the institution, but lead to siloed and more traditional forms of training and development, which then self-determines a demand for yet more of these technical skills. In this context (and cycle), museums create specific projects relying on particular competences that only a few IT professionals can master. This creates a relationship with digital that is reactive, narrow, and disconnected both from the needs of audiences and the wider needs of museums, resulting in a fundamental lack of digital confidence across the museum.

However, importantly, this research is also showing evidence of the traditional skills ecosystem having the potential to adapt—incorporating a new set of interdependencies. This alternative system (if only in aspiration rather than practice) is one in which the museum prioritizes a wider digital literacy (rather than a narrower set of technical skills), leading to the recruitment of more varied forms of digital competency and—perhaps more significantly—confidence. With, then, a more adaptable workforce, there is greater flexibility in how these wider literacies and varied confidences can influence the organization, including in the development of a more responsive culture of learning and development, which in turn sustains the value given to prioritizing digital literacy over specific technical skills. This more progressive, more digitally mature system (and cycle), is less about generic technical skills being determined by a higher national skill set or curriculum. Instead—crucially—these are digital literacies that grow from below, out of the needs of individuals, within particular
professional settings, in the local contexts of their specific institutions. This adapted ecosystem is characterized by the movement from the mindset of developing technical skills within a small specialist group such as IT teams, to instead cultivating digital literacies within everyone’s roles within the institution.

With a digital history that goes back to the late 1960s, the museum sector is about to step into its second half-century of working with computers. Over that time the advent of digital technology has changed the way museums manage collections, do research, shape exhibitions, and build relationships with their audiences. But despite fifty years of computer-enabled advancement and transformation in the ways museums work, the sector as a whole still lacks digital confidence. It still does not have (or at least it does not think it has) the digital skills needed to meet its (and its visitors’) expectations. This initial research, as part of the ongoing work of the “One by One” project, is not only helping to explain this lack of capability within the sector, but—tantalizingly—it is also already offering an emerging picture of how the demand, supply, deployment, and development of digital skills can adapt to create a transformative, innovative, creative, and digitally fluent workforce.

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