ROUTLEDGE FOCUS

Museums and Digital Confidence

Organisation, Collection, Interface

EDITED BY
ROSS PARRY, VINCE DZIEKAN
AND KARIN DE WILD

Museums and Digital Confidence

Museums and Digital Confidence explores the evolving nature of digital practices in museums. It interrogates the skills, literacies, and mindsets that can support the use of digital technologies within these institutions. It also reflects on why digital adoption has faltered (at times), why digital continues to matter, and how the digital museum may flourish into the future.

Underscored by national and international research, this edited volume brings together leading experts from museology, museum management and curation, organisational studies, and cultural policy to outline a new framing of museum digital confidence. It does so by offering a series of critically engaged perspectives derived from a range of practices that reveal how museums have managed to successfully re-orient themselves in order to not only face but also embrace the ongoing challenges presented by the highly interconnected, media-pervasive, and technologised world to which contemporary museums must continually adapt. This book presents a set of 'framings' to help museums clarify how they can work purposefully, productively, and sustainably with digital at an organisational level, in terms of managing collections, and through curating public-facing exhibitions and programmes.

Museums and Digital Confidence shares insights that will be essential reading for students, researchers, and museum practitioners who are interested in better understanding – and acting upon – the digital transformation of museums.

Ross Parry is Professor of Museum Technology and founding director of the Institute for Digital Culture, University of Leicester, United Kingdom.

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Critical Perspectives on Museums and Digital Technology

Series Editors: Vince Dziekan and Ross Parry

Critical Perspectives on Museums and Digital Technology contends that digital – more than ever – is critical to the future of the cultural sector. The series considers how the relationship between the museum and the sociocultural and technological conditions within which it must coexist, might be reframed.

By promoting interdisciplinary writing that seeks to address contemporaneous issues in a time-sensitive way, the series is perceptive and attuned to contextual precedents and emergent issues from across the museum technology field directly, and digital culture more broadly. Contributions are "critical" in that each book in the series brings a high level of originality, intellectuality and reflexivity to the way it negotiates its subject. These titles speak to issues that are timely, urgent and, therefore, "critical" to how we understand current issues and practices.

The museum sector now finds itself stepping into its second half-century of working with computers. Reflecting upon the myriad ways that digital technology continues to influence the ways that museums organise themselves, manage collections, shape exhibitions, this book establishes core digital literacies and what they mean for how we work *within* the institution, *with* collections and *through* their various curatorial interfaces. Marking the evolution of the digital museum into its burgeoning post-digital phase, the writings in this book will demonstrate some of the ways that digital values are coming to inform organizational, data management, exhibition strategies and the relationships they establish both within their own operational and internal working processes and those they forge, strengthen, bind and mend with their publics. In so doing, these contributions demonstrate, variously

through theoretical critique and reflective analysis, how digital confidence might enable museums to move forward with greater empathy and a sense of purpose across the fullest range of things they do.

Critical Perspectives on Museums and Digital Technology includes solo, collaborative and ensemble volumes that are accessible and supported by practice-based insights. The series is intended to provide essential readings for academics, students and professionals around the world, with interests in museums and heritage, digital humanities, media and communication, art and design, education, business and economics.

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For Effie Kapsalis

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This volume is substantially informed by 'One by One', a multi-institutional research initiative designed to support museums of any type and size to build their digital confidence. The editors are especially grateful to the UK's Arts and Humanities Research Council (AHRC) for generously funding the inaugural 'One by One': building the digital literacies of UK museums' (AH/P014038/1) research programme which was undertaken between 2017 and 2020. In this first instance, 'One by One' was embarked upon as a nationally focused research project designed to help UK museums better define, improve, measure, and embed the digital skills and literacy of their staff and volunteers in all roles and at all levels. 'One by One' was led by the University of Leicester in partnership with Culture24 (now integrated into The Audience Agency), together with a range of museum and academic partners: Amgueddfa Cymru; National Museums Scotland; National Army Museum; Museum of London; Derby Museums; Royal Pavilion and Museums Brighton and Hove; School of Museum Studies, University of Leicester; and the Institute for Employment Research, University of Warwick. Members of the research team included the three editors – Ross Parry (Principal Investigator), Vince Dziekan (International Advisor), and Karin de Wild (Digital Fellow) – and author Sophie Frost (Digital Fellow), all represented in this volume. We would like to extend additional recognition to Yoti Goudas, Marco Mason, and Lauren Vargas (Digital Fellows); Isobel Woodliffe (Research Project Officer) and Peter Alfano (Research Assistant) at the University of Leicester; Sally-Anne Barnes and Erika Kispeter (Institute for Employment Research, University of Warwick); Doris Ruth Eikhof (CAMEo Research Institute, University

of Leicester); and Sejul Malde, Anra Kennedy, and Jane Finnis (Culture24), whose extensive knowledge of the museum sector in the United Kingdom was indispensable. It was an honour and pleasure to explore the various ways, shapes, and forms that digital confidence can take across the museum sector with such an inspiring team of collaborators.

The project delivered new organisational mindsets in museums to help support their digital transformation needs by advocating the use of human-centred design principles. At the heart of it all, the project's multiple outcomes were the product of invaluable collaborations involving a wide array of academic and museum partners. We are indebted to the openness of the participants who actively contributed to workshops and dedicated digital summits that took place at key junctures during the research. In particular, we would like to acknowledge the contribution of those who specifically supported key fieldwork activities; notably the numerous colleagues involved in hosting a series of Literacy Labs at Amgueddfa Cymru, National Museums Scotland, and Royal Pavilion and Museums Brighton and Hove; along with Peter Alfano, Rosie Clarke, Bridget McKenzie, Kate McNab, Ian Maine, and, of course, all of the participants who contributed so thoughtfully, energetically, and creatively to those collegial events. Such collaborative spirit characterises the community of practice that has grown from this process to become a large cohort of museum leaders, action researchers, and policy makers. We would like to express our gratitude to important strategic stakeholders that represented the needs of UK museums across the sector, provided vital advisory support, and were integral to sharing and implementing the project's key findings: Arts Council England; Museums Association; Association of Independent Museums; Museum Development Network; National Lottery Heritage Fund; National Museum Directors' Council; Collections Trust; and Nesta. We wish to single out the following people who were instrumental in co-designing, supporting, and supervising the fieldwork undertaken by One by One's team of Digital Fellows throughout the project: Dafydd James (Amgueddfa Cymru); Hannah Fox (Derby Museums); Gemma George-Lawrence (Museum of London); Ian Maine (National Army Museum); Rob Cawston (National Museums Scotland); and Kevin Bacon (Royal Pavilion and Museums Brighton and Hove). We are grateful to them all for their generosity in sharing their knowledge and expertise, and their commitment to driving important aspects of this work.

The successful outcomes of 'One by One' inspired two subsequent international projects: '2 by 2: Structuring museums to deliver new digital experiences' (2020) and '3 by 3: Modeling new digital leadership in museums' (2021–2022). '2 by 2' was a nine-month, multi-partner, interdisciplinary, action research project funded by UK Research and innovation (UKRI AH/T013192/1) and jointly led by the University of Leicester and Southern University at New Orleans. The research exemplified sector-wide transatlantic partnership around digital leadership and skills for helping museums to build the organisational conditions to support new forms of visitor experience and participation at a time of social change. The project brought together national professional bodies and established communities of practice, with leading digital heritage scholars. The project was indebted to a core group of eight museum teams with an international reputation for digital leadership – the Smithsonian Institution through the Cooper Hewitt Smithsonian Design Museum, National Air and Space Museum, Smithsonian American Art Museum, and the cross-organisation American Women's History Initiative and supporting UK partner organisations, the Science Museum Group, Victoria and Albert Museum, Amgueddfa Cymru, and National Museums Scotland), as well as an group of outstanding institutional, commissioning and community partners; notably: Microsoft, Arts Council England, Harvard University and Johns Hopkins University; the American Alliance of Museums, and Museums Association; and the US Museum Computer Network and UK's Museums Computer Group.

For its part, '3 by 3' was supported by a unique joint funding programme between the National Endowment for the Humanities (NEH) in the USA, and the Arts and Humanities Research Council (AHRC) in the UK – its 'New Directions for Digital Scholarship in Cultural Institutions' scheme (AH/V009710/1). This collaborative research project was able to produce professional development resources on digital leadership for the cultural heritage field thanks to outstanding and inspirational collaboration between: Rob Cawston (Head of Digital Media, National Museums Scotland); Dafydd James (Head of Digital and Strategic Projects Lead, Amgueddfa Cymru); Kati Price Head of Digital Media, Victoria & Albert Museum); John Stack (Digital Director, Science Museum Group); Sophie Frost (Research Associate, University of Leicester); Lauren Vargas (Research Associate, University of Leicester); Stephanie Cunningham (Co-Founder and Executive Director of Museum Hue); Ted Ellis (Director

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Foreword: Leading Digital Confidence in the Post-Digital Museum

Carolyn Royston

It is an extraordinary time to be working digitally in museums. Organisations have only recently emerged from a global pandemic in which they were forced overnight to close their doors and rely solely upon their virtual presence to deliver on their missions. During this unprecedented time, those working in digital roles in museums were suddenly in the spotlight. Their work was highlighted, brought to the centre of attention, and suddenly very visible. The labour and skills required to produce this work suddenly became much more valued by the leadership and staff of museums who had perhaps up until that moment regarded digital at best as a means of augmenting and amplifying collections and exhibitions, and at worst, as yet another demand being placed upon the sort of skill sets that had not traditionally been integral to those possessed by museum staff, and which offered no clear impact.

Those museums which were able to redirect their efforts and resources more easily were better prepared than others, which until then had perhaps prioritised the on-site experience over the digital experience. Small organisations showed they could be enterprising and creative in terms of the approaches and ideas they would use to reach their audiences. Suddenly, that fact that they no longer needed to compete with in-gallery activity, and instead had to focus upon their virtual presence, encouraged some museums to try new things, to take risks, and to work in new ways. Audience reach shifted from the hyper-local to the national to the international. We were genuinely 'museums without walls', creating online destinations or repurposing content for online audiences who were not going to visit our physical buildings. We were liberated from the bricks and mortar, no longer

having to fight for attention, budget, or resources with our physical, on-site offer. This was a dramatic, catalytic moment for the use of digital in museums, in which we saw digital leadership called upon at all levels of the organisation, as well as across the functions of a museum.

And then we reopened.

Today we are at a different pivot point, a different catalytic moment, confronting the question of whether to return to 'business as usual' or to continue the pivot towards digital. Museums have found themselves asking whether they should forget about what happened during periods of closure during the pandemic and just go back to the same old ways of working, or alternatively to take the opportunity to pause, reflect, and re-imagine. We are left reflecting upon why it took a catastrophic event to force museums to change their relationship with digital so fundamentally, so quickly, and unquestionably. What did we learn during this time? What do we want to take forward with us? How do we embed a digital mindset that was so necessary during closure into a permanent, critical feature of the culture of museums in the future?

I would argue that the period of closure to museums during the pandemic opened a door to new possibilities, and brought about a genuine change in museums and the way they operate. Museums cannot go back, and should instead find a way to move forward that can continue to support this work, and to service both new audiences and greater global reach. And yet they should do so while still welcoming visitors through the door, and while providing exceptional onsite experiences. Nonetheless, in order to achieve this, there has to be a fundamental shift in our thinking that will enable us to operate – with confidence – in a genuinely hybrid state, in which we can provide equitable experiences for both physical and virtual audiences. A shift in museum thinking is called for, so as to imagine what it will take to service audiences within this new reality.

As our museums become more accepting of digital delivery and more reliant upon its outputs, and as technology advances, we start to see the divide between digital and physical merge. Digital specialists emerge within other departments outside of core digital teams, creating an opportunity to break down silos as digital ceases to be considered 'other' or secondary to the in-person, bricks and mortar experience, but rather an integrated part of a holistic visitor journey. Similarly, we start to see new positions appearing within the museum

sector, outside of but still connected to digital departments. Roles such as 'Head of Engagement' or 'Head of Experience' have become more common – roles that recognise the importance of creating seamless customer journeys, as part of which the brand and mission of an organisation is clearly articulated across all touch points. Likewise, instead of 'digital leadership' (where the focus is upon building a robust and solid digital team that functions to support a virtual version of the physical museum), we now imagine a museum that operates across a number of equitable spaces, each with its own, overlapping characteristics, audiences, products, and services. In the era of rapidly evolving artificial intelligence (AI) capabilities our job has assumed a new technical challenge, to build an infrastructure that can support multiple versions of the museum, whilst at the same time giving audiences seamless and authentic through-lines to connect content to the organisation and mission across different spaces and platforms. We are, in other words, in new territory, that of the post-digital museum, in which the idea of a museum website and social media presence seems outdated for audiences hungry for new on-demand experiences and layers of content that are evermore experiential and immersive.

The perspectives shared in this volume helps us to delineate this new confidence for museums in the post-digital era. The contributions here articulate digital as a necessary and critical function for museums, rather than a separate entity led by a small team with limited resources. The examples and approaches shared here show that digital is not additive and optional, but rather part of a holistic, integrated experience; part of a core offer and service across all functions of the museum. The authors gathered within this volume speak to a prioritisation of training and upskilling of museum staff who feel truly confident using digital tools and creating innovative digital outputs alongside more conventional physical outputs. The assumptions made across these chapters are that audiences should be valued equally across physical and virtual spaces, and that data is to be used to determine new metrics and measures of success that provide a return on investment and impact beyond ticket sales and other forms of revenue. Together the chapters show the new models of leadership, new skill sets and mindsets, as well as new processes and systems, that together constitute museums' new 'digital confidence'.

Introduction

Museums and Digital Confidence

Ross Parry, Vince Dziekan and Karin de Wild

This book explores the evolving nature of digital confidence in museums: why it has faltered (at times), why it matters (especially in times when the global pandemic made us question how we work productively and function sustainably), and how it may flourish (now, and as an integral part of the museum's post-digital future). Underscored by national and international research collaborations, this edited volume brings together leading experts from museology, museum management, organisational studies, curatorial practice, and cultural policy to outline a new framing of museum digital confidence. The focus is not on technology *per se*, nor will it develop a framework that encompasses specific sets of technical skills. Instead, we position digital confidence as being primarily about people, and emphasise how the digital generates new visions and new ways of working. Collectively, the perspectives shared across these chapters will stress the importance of questioning conventional and widely accepted mindsets, and will demonstrate that digital confidence involves understanding how to think strategically, engage critically, and respond creatively in digitally-informed ways.

To encompass this breadth, the book is divided into three parts which present how museums can build digital confidence by making organisational changes, navigating new ways of working, managing their collections, and curating exhibitions. The set of chapters that make up the volume's first part (Part I, Organisation) explore the dimensions that together can comprise a holistic view of a digitally mature museum: its vision and leadership; its processes and systems; and (perhaps most crucially) its culture and people. Part II, Collection, reflects upon the growth of digitised museum collections

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and the challenges presented by born-digital content. Reinforcing the importance of investing in people in order to respond and adapt to digital change, this part will reflect upon ways to continually develop competencies (individual skills and knowledge), capabilities (the range of competencies within a team or organisation), and literacy (gaining fundamental understanding and resilience). Finally, Part III, Interface*,* focuses most directly upon some of the ways that museums demonstrate their growing confidence in how digital technologies are integrated within their public-facing programmes. In this part, digital is framed as something that can be used (a tool), managed (a process), created (an object), and understood (a societal context and cultural condition). In this respect, exhibition-making serves as a key interface, connecting the internal operations of the museum with sociocultural processes that exist in the wider (external) world.

The book's opening part approaches the museum as an organisation – an ensemble of people, practices, and processes. Its three chapters work together to demonstrate the importance of taking a holistic view of digital confidence. In short, this means that instead of assuming that fluency with technology will come from developing specific competencies within particular parts of the institution, digital confidence can only truly thrive when all aspects of the museum's work are considered as an interrelated whole. This part includes both original research findings and insights from leading practice that demonstrate what is needed for the development of institutional digital confidence. In the first chapter, we set the stage by offering a set of frameworks with which to understand digital confidence and provide guidance on how museums can move forward in building this confidence. This is followed by a chapter from Kati Price and Dafydd James, both heads of digital teams at two prominent national museums (the Victoria and Albert Museum, and Amgueddfa Cymru – National Museum Wales). Their account reflects upon what is needed to develop digital confidence within museums, based upon their shared practical experience of establishing institutional working processes and organisational structures. The final chapter of the book's opening part by Sophie Frost considers the emotional dimension of developing digital confidence in museums. It asserts that emotional labour is needed wherever there is a call for change – wherever silos need to be dismantled, hierarchies challenged, or the status quo interrogated.

The second part of this book focuses upon how museums develop confidence when working with both physical and digital collections.

Now that collections are increasingly represented as data within open digital infrastructures, the contributors to this part interrogate how this is impacting the competencies, capabilities, and literacies needed within the museum sector. In the first chapter, Joyce Ray explores the role of universities in the emerging landscape of digital curation. The constantly evolving nature of digital skills require new strategies in which universities educate a new generation of museum professionals and digital humanities scholars, whilst also developing an infrastructure for lifelong learning. This is followed by a chapter coauthored by Anna Kennedy, Harry Verwayen, and Beth Daley addressing the challenge of building digital capacities within museums in Europe. They propose that in order to fully benefit from the new opportunities that digital collections can bring, effective leadership is essential to support international collaboration, to embed digital capabilities throughout an organisation, and to establish a working culture adaptable to change. In the final chapter, Dominic Oldman focuses upon digital literacies. The emergence of digital collections does not only demand new skills but recognises the need for a broader understanding of the digital realm, which will inevitably change how we approach museum collections more generally.

The final part concentrates most directly upon some of the ways that museums demonstrate their growing confidence in utilising digital technology as part of their public-facing programmes. Marking the evolution of the digital museum into its burgeoning post-digital phase, authors Nancy Proctor, Sarah Cook, Kate Hennessy, and Hannah Turner exemplify how digital literacies are coming to inform curatorial and interpretation strategies, and influence both the shapes that exhibitions assume, and the relationships that public programmes form between museums and their audiences. This set of chapters will reveal, variously through theoretical critique and reflective analysis, cases in which digital confidence has been honed in response to the museum's growing appetite for digital forms of engagement and experience. In the process, these reflections will take account of a number of challenges raised by increased institutional ambition, evolving visitor, community and public expectation, and shifting socio-cultural circumstances.

In composing this volume, we invited key experts to critically reflect upon the state-of-the-art within the current field. Their chapters give in-depth insights into what can be learnt from some of the ways that museums have managed successfully to re-orient themselves in order

not only to face, but also to embrace, the ongoing challenges presented by our highly interconnected, media-pervasive, digital world. The authors variously draw upon their respective disciplinary experiences and professional settings (across Britain, Europe, North America, and Australasia). By representing diversity of understandings about how knowledge is acquired, formed, practiced, and ultimately shared, each contribution to the book in its own distinctive way challenges mindsets that are still prevalent across much of the museum sector. Collectively, these accounts critically interrogate how 'digital' in the museum has found itself positioned to date. Throughout the book, as editors, we have aimed to carefully align insights from museum professionals, policy makers, and academics. By bringing together these different perspectives, we hope to offer the right balance, providing both progressive thinking about how museums can build digital confidence, as well as new knowledge and understandings that future museum practitioners might draw upon in this continually evolving field.

By exploring ways of moving forward towards the digitally confident museum, this volume provides a contextual, holistic, empathetic, and purposeful approach. This involves providing an understanding of organisational changes, digital values, and an integration of digital skills and literacies across the fullest range of things that museums do. However, the extensive research that has preceded this volume also clearly reveals that there is no single pathway to digital confidence. Even though some critical models and persuasive commentaries might promise otherwise, there is, in practice, no simple step-by-step guide or single route to reaching digital confidence in museums. Instead, the reality for most museums is much more complex and far more contextual. Indeed, the ways to build digital confidence are as varied, situated, and nuanced as museums themselves. Instead, the key to building digital confidence comes not from searching for a common sector-wide approach, but rather by framing the unique experience of each individual, each team, and each institution.

Part I

Organisation

1 Contextual, Holistic, and Purposeful: A Re-framing of Digital Skills for Museums

Ross Parry, Vince Dziekan, and Karin de Wild

Introduction

Questions of relevance, purpose, and value remain multi-dimensional, inter-sectional, and at times overwhelming for the museum. Amidst this turbulence, confidence is crucial, resilience enabling, and adaptability essential. Never more so than when dealing with how museums are adopting digital technology operationally and adapting organisationally to the digital age and all the contentions that come with it. At no other time has it been as important to have clarity on how the museum workforce might develop its digital skills, grow its confidence, and do so in a way that is itself reflective of the diversity of museum contexts and the fluidity and rapidity of technological change (Newman et al., 2022: 3). It is to this climate of sectoral change that the reframing of digital skills in museums we propose in this chapter responds.

By considering the current ecosystem of digital skills development in museums (given particular attention to its focus and setting of the UK), and by reflecting upon a series of creative action research interventions co-designed and delivered with an alliance of museum partners and professional bodies, this chapter makes a case for a new integrative approach to building digital confidence within the sector – one that distinctively gives primacy to context (of the individual and the institution), and that encourages a holistic and institution-wide approach. In doing so, the discussion here not only provides the conceptual 'framings' and everyday tools for leading effectively digital

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change in the museum, but it does so in way that challenges what it sees as some entrenched normative approaches to skills development, creating instead a fresh set of co-ordinates for discourse, practice, and purpose around digital technology. In effect, a new signature for digital within the museum.

The empirical research underpinning this discussion draws upon a five-year programme of international research, falling under the rubric of 'One by One'. Since 2016, this ambitious multi-partner initiative has brought together cultural organisations, academics, policy makers, professional associations, sector support agencies, and communities of practice in various forms and formats, with the singular aim of leveraging action research to build digitally confident museums. The foundational principles that would guide this course of research came from a collegial act of bottom-up, self-organisation from within the sector itself – the so-called 'Baltimore Principles' (NMC, 2016: 24; Parry, Royston, James, Finnis & Dziekan, 2016). These served as an 'unequivocal […] call' (Parry, Eikhof, Barnes & Kispeter, 2018) and groundswell for a unified and co-ordinated shift in the way digital training was conceived and delivered in the museum sector. The outcome of consensus between training providers, practitioners and professional bodies, the Baltimore Principles were forged at an international congress[1], articulating the need to de-centre technology and take instead a person-centred approach to digital skills development – what was expressed as a move from digital training being 'about technology', to understanding how to be 'with technology'. The Principles advocated for an expansion of thinking away from 'technical skills' towards the notion of 'digital literacies'. Adopting a postdigital stance (Chan & Giannini, 2019), this approach encouraged a move from 'reactive training' (time-bound and contained within specific institutional units and silos), towards a model based upon on-going, institution-wide 'strategic improvement and professional development'. Crucially, the Baltimore Principles challenged training providers to develop a learning offer that would harness collective expertise across organisations (rather than a specific group of identified experts), and that would look outward to other sectors for inspiration (Chan & Giannini, 2019).

Galvanised by the purpose that the Baltimore Principles extolled, through three successive large-scale projects over five years (funded by the UK's Arts and Humanities Research Council), the One by One programme of research worked across multiple organisational sites

to consider, firstly, the subject of digital skills, then organisational structure (and forms of digital transformation), and finally models of leadership (particularly the forms that leaderful behaviour might take to support digital literacy and mobilise positive change in museums). Partnering throughout were the UK's Museum Association, and Museums Computer Group, and then latterly the American Alliance of Museums, Museum Computer Network, and Smithsonian Institution. In each case the scope of work was characterised by its: interdisciplinary approach (intersecting and moving between museum studies, business and management studies, education, design and media studies, digital studies); internationalist stance (staging comparative studies and knowledge exchange between UK and US institutions and global networks); and its emphasis on practice-led, situated action research, with equitable alliances between university-based and museum-based research partners.

The work was also supported by a series of planned initiatives delivered through a network of associated partners, each of which brought the insights and outputs of the research into practical, real-world training and development contexts. In the UK, the 'Let's Get Real' [LGR] on-going action research programme, delivered by Culture24 and (more recently) The Audience Agency, tested the 'framings' that emerged from the research, which in turn fed back into their reiteration and refinement. Through its 'learning from others', 'learning by doing' and 'learning together' methodology, LGR brought together a diversity of perspectives, and an experimental approach to everyday digital labour, bound by a community of supportive peers across the museum sector – with its sixth iteration focusing, by design, on socially purposeful digital skills (Parry, 2018). Likewise, in Canada, the 'Digital Action Research and Training' (DART) programme, provided an opportunity for participants from a range of cultural institutions to develop their digital skills. As with the LGR programme, DART applied (and critiqued) the One by One 'framings' within its own curriculum of action learning sets and mentoring encounters, providing another valued scenario of live user testing.[2]

An initial One by One study (Barnes, Kispeter, Eikhof & Parry, 2018) mapped the digital skills ecosystem within UK museums, by identifying salient features associated with supply and demand, development and deployment.[3] Alongside an extensive desk-based review involving a systematic search of the extant literature focused on evidence on the museum sector workforce, skills needs and gaps, training

and development and policy (primarily in the UK), the study drew on the primary research of 50 practitioner interviews (with museum staff from all levels of the organisation), with a follow-up focus group, along with non-participant observation at six chosen museum sites (Amgueddfa Cymru – National Museum Wales; National Museums Scotland; National Army Museum; Royal Pavilion and Museums Brighton and Hove; Derby Museums Trust; and the Museum of London). The work undertaken as part of Phase 1 of this project, evidenced a set of key foundational observations for subsequent stages of the research to follow, all of which validated the Baltimore Principles, corroborated the working assumptions of the sector as expressed in key horizon scanning (NMC, 2015; NMC, 2016) and policy documents (DCMS, 2018), and were largely consistent with previous academic studies (Parry, 2013). First, it was found that rather than homogeneity and a singular approach, there are in fact very different practices in how digital responsibilities and skills are distributed, managed and shared across museums. Second, that digital is increasingly seen as part of everyone's skill set in the museum, and that all roles have some kind of digital element to them, with the distinction between specialist digital roles and other roles is becoming blurred. Third, digital is also becoming professionalised in the museum, as digital roles and responsibilities become standard practice, museums are restructuring and evolving, introducing new roles and departments. And, fourth, museums are exploring, learning and demanding new digital skills as they innovate and create with digital.

However, this initial study also exposed key areas of need. Namely that, then, there was little evidence that museums were systematically assessing and identifying digital skills needs. That the need and strategic importance of certain kinds of skills warrants greater assessment or analysis to identify in-house digital skills was recognised, but the challenge remains finding the necessary time to do so. That there was little evidence of coordinated in-house, formal and planned training dedicated to digital skills or digital literacy. And, lastly, that there was a prevailing assumption in museums that 'digital skills' relate to a specific set of technical competencies (Parry, 2013). Subsequently, evidence garnered from Phase 2 of One by One established the clear mandate and evidential base for a new approach to digital confidence-building within the museum sector. Such a reframing would need to be: led by individuals' needs rather than new technologies or other external drivers; clearly related to propose and organisational

missions; designed to help people understand and relate skills to their own practice and workplace setting; be based on clear, consistent and widely serviceable definitions; designed to help people set priorities and plan and track progress and proficiency on their own terms; and with supporting guidance, tools and resources to enable them to continue to build their digital skills effectively (Malde et al., 2019). Plainly put, a new framework for digital skills development was called for, with a mandate requiring it to be: individualised (person-centred, not organisation- or technology-centred, and therefore able to scale and flex to ensure benefits can ripple out from the individual to the wider sector and beyond); values-led (clear on the values that digital skills and literacy-building for museum workers brings to their museums and their audiences, the public and wider society, all the while relating to organisational values and mission); dynamic (situated, evolving, and responsive to the sheer variety of contexts that operate within the museum sector); and active (enabling any individual to take initiative, action and effect positive change) (Malde et al., 2019).

Understanding the contextual basis of digital confidence

Proceeding from the premise that there is no single formula or pathway to digital maturation (Vargas, 2019; Malde et al., 2019: 2), the One by One research has helped instigate a highly 'context-based' approach to building digital confidence in the museum. Adhering to these design principles, the resulting One by One 'framings' for digital confidence building, have taken a distinctive approach to their structure. Firstly, they decline the fixed logic of most models of digital literacy. Familiar schemas for representing digital skills development and the dimensions of digital literacy typically present as a static structure and conform to a single shape. The orthodoxy is to visualise the concepts geometrically, as a circular dial of skills segments, or organise them as a tabulated listing and inventory. Second, these framings also decline another common trope of these models – namely, that they depict a linear pathway of learning. The tendency is to build a framework of digital literacy predicated upon a pedagogic model of accrued learning – one, say, that might be sequenced through steps reminiscent of Bloom's taxonomy. Evident in these sorts of common-place models is a recurring progression of digital skills development, from 'understanding', to 'application', to 'analysis', to 'evaluation', to 'creation'. Consequently, 'digital' is treated as something that can

be learned in an incremental fashion. In doing so, digital technology retains the identity of something new, something to be assimilated, and something to be mastered. In intentional contrast to these orthodoxies, the One by One approach, instead, is defiantly modular and mutable. Importantly, digital is treated as a normative (rather than an additive) feature of the museum. The tools employed are suggestive, not instructive. They are designed to be disassembled and reassembled, used fully or fractionally as necessary. They are, in other words, self-styled 'framings' – as much a guide for thinking, the means to initiate and lead a structured conversation, rather than a set of predetermined competencies to be met or completed. They serve as a set of sharable components to assist transparency, to support careful articulation, and (most importantly) to enable an expression of digital skills development and confidence building on the user's/users' own terms. Not so much an all-encompassing model, as a set of (evidenced, robust, relevant) constituent parts designed to enable anyone to build their own context-based expression of their own digital skills context and aspiration, that speaks to their own circumstance. In short: these four 'framings' (see Figure 1.1) serve as devices designed to support context-based thinking.

The first framing relates to 'situation'. Its components provide the opportunity for the user to notice 'where' they are, and to 'whom' this reflection relates. Conceived as a set of concentric rings (from the individual, out to the societal), but equally mobilised as a set of discrete 'cards', this frame situates the process of digital confidence building. Crucially, this frame enables an explicit recognition of whether the focus is being directed towards:

- the PERSON (in the world, outside of their role in their organisational setting);
- the INDIVIDUAL (in their particular role as a museum worker);
- the TEAM (the unit, department or function they serve within the museum);
- the ORGANISATION (collectively as a whole museum or institution);
- the NETWORK (the wider community of practice or professionals with similar responsibilities and modes of working within the sector);
- the SECTOR (the museum domain in its entirety);
- or on SOCIETY (outside of the museum, and in relation to the world more expansively, culturally, politically, socially).

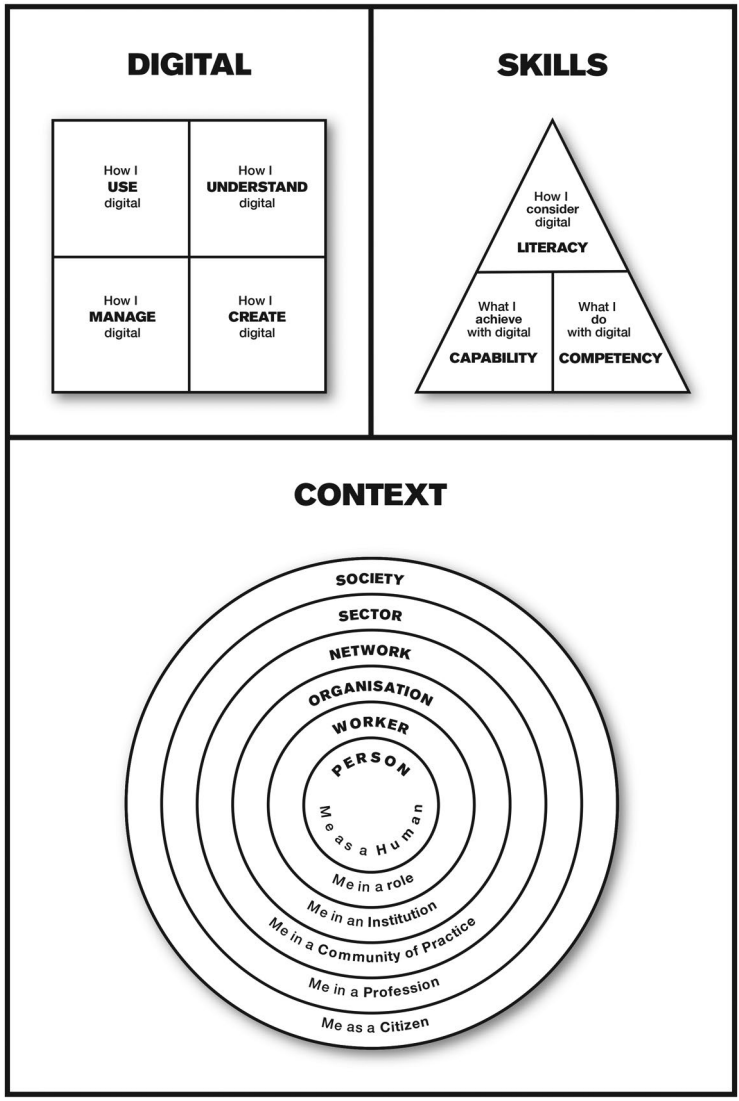

Figure 1.1 Framings For Building Digital Skills And Confidence, One by One Research Project, 2025. (Design: Vince Dziekan).

This contextual framing invites the user to make a key decision at the start of their reflection; one that can all too often be conflated within discussions and actions around digital skills development and confidence building, namely: that the personal and the organisational (the individual, and the institutional) are clearly differentiated. In effect, whether the focus here is on you personally, or your organisation. This contextualisation provides vital clarity. Importantly, primacy is given to a person-centred principle at the outset of the framing process.

The second framing relates to the concept of 'digital' itself. Here the components enable the user to acknowledge 'what' aspect of technology application within the museum is their focus, and 'how' they are defining their relationship with digital. Unlike the concentricity that characterises the contextual framing, here the components can be conceived through the mnemonic of a square, organised in a grid of equally valued elements. However, as before with the contextual framing, these four elements can be easily disassembled and liberated, for instance, when translated into a set of cards from which the user can choose what aspect relates best to them. Specifically, this framing differentiates between:

- USE (how digital technology is used within the museum – the hardware, the software, the tools, systems, platforms, and devices);
- MANAGE (how digital technology is managed within the museum – the process of digitalisation, the strategising of digital change and transformation, the processes, policies and workflows for adopting and delivering digitally-enabled and digitally-supported practice and provision);
- CREATE (how museums create digital things – the production of digital content, outputs, interactives, experiences, and interfaces; but also, how museums might collect digital things from the world in their role as memory institution);
- UNDERSTAND (how, somewhat uniquely compared to other sectors, museums make sense of society's digital condition, – the responsibility museums have for interpreting and narrating our dataful, networked, connected age)

The One by One research (through a combination of literature review, a national roadshow of 'Literacy Labs' with practitioners, and an experts 'design retreat') identified relationships with digital

technology distinctive to museums – dimensions that characterise how digital is used particularly within the museum sector. Some of these elements ('use' and 'manage') consequently are shared by other sectors, but others ('create' and 'understand') are a combination more characteristic to the museum domain. In other words, whereas many industries would recognise the need to developing confidence in using technology, or in managing the move to digitalisation, far fewer sectors are involved in creating, and particularly collecting digital content, and rarely with the remit to aid understandings of digital culture for society at large. In other words, together, these four elements describe a signature for digital within the museum, and consequently a means to add precision to how confidence might be reframed to better service the distinctive needs of the sector.

The third framing relates to 'skills'. The term and concept of skills itself has been used variously and not always consistently in the context of museum professional development, and therefore is in need of definition and anchorage here. With the 'context' clear (where and to who the framing of digital context relates), and with 'digital' defined (what aspect of technology is relevant to this reflection), the final consideration relates to 'why' digital confidence is sought, and specifically 'which' aspect of digital skills development is sought by the individual museum worker or the institution at large. The elements here can be represented as a triangle, but, like the other framings, can just as easily be broken down into constituent motile 'cards'. Here the framing enables the user to recognise subtle but consequential differences between the elements that might be seen to make up a 'digital skill'. Specifically, this framing separates out:

- Digital COMPETENCY (what a person can *do* with digital, their action; developing the ability to undertake an activity)
- Digital CAPABILITY (what a person might *achieve* with digital, their intention; using their competency to enable them to complete a specific task in a given context)
- Digital LITERACY (how a person might *consider* digital, their reflection; judging their competency and capability within a wider setting of practice by themselves and by others)

An analogy that helps illustrate this tripartite model might be the differentiation between: a competency in knowing how to use a hammer and nails; then a capability in applying that knowledge to

making a chair; but then a literacy to realise that it could have been more useful to make a bench. These elements of digital competency, digital capability, and digital literacy, together constitute what we frame as a 'digital skill'. And yet, it is by being separated out that a more nuanced understanding of digital skill is enabled, identifying which aspect of skills development might need to be the primary focus for a practitioner in any given context or circumstance.

The fourth, and final, framing prompts us to notice the affective dimension to growing digital confidence in organisations, particularly with respect to leading digital change (Parry, 2023b). This observation reflects an important, albeit often overlooked premise relating to emotional intelligence. Whilst museums have worked hard over several decades to understand the operation and deployment of digital technology, and whilst in recent years that skill has extended to include an understanding of implementing and co-ordinating digital processes, there has nonetheless been a crucial dimension to digital skills that has been missing. That being, alongside understanding the affordances of technology and businesses processes, digital skills development and leadership also requires a nuanced appreciation of human experience. In short, besides the stated need for both technical and process skills, sits emotional skill (Parry et al., 2022). Here the framing supports the individual in recognising the value of personal investment in digital confidence building (Vargas, 2020c). Remembered through its acronym ('CALM'), this framing (the development of which was led by Lauren Vargas) distinguishes between:

> the importance of COLLABORATIVE working ('engaging openly and transparently with other staff to plan and develop (internal or external) work products');
>
> working in an ANTICIPATORY way ('planning effectively using agile methods, being aware of relevant data (through analysis and reporting) and building in a process for feedback');
>
> LETTING GO of command-and-control leadership and embracing collective leadership ('locating and enabling leaders at all levels whilst developing a shared sense of decision-making and accountability');
>
> and being MINDFUL in the approach to digital confidence building and leading digital change ('making time and space to reflect on information and decisions').
>
> (Vargas, 2020c)

By implementing this framework in multiple 'card exercises' in various institutional settings, the 'One by One' research has shown how, when used together, these 'framings' can help activate the expression, and then the reflection upon, of highly contextualised and situated formulas of digital confidence building. For instance, in the case of a curator who identifies that she wants to develop her video editing skills in order to share content in a more timely and accessible way through social media, the framings would help her to notice what is needed at an individual and personal level. By focusing on her competency with using that particular technology, and given the perceived need to adopt this new skill (and others after it), it is likely that she will need to call upon emotional skills of adaption and resilience to succeed in this venture. A contemporary art museum with an aim to develop a new Collections Management System, in contrast, can use the framings to articulate this need as an institutional level priority. The framings help the museum to focus on its capability to manage a new set of digital workflows, and recognise the need to empathise the diverse and individual contexts of the staff members being asked to adapt to a new set of systems and processes. And, finally, the example of a national network of museum educationalists, who agree on an ambition to research new digital forms of learning emerging in schools, where the framings are mobilised to help prioritise how a whole community of practice understands digital society, and the crucial role that communication will play to support and sustain that community as it works collectively to build this literacy.

In each of these illustrative cases (for the curator, the museum, the network) the framings encourage the user(s) to look beyond generalising terms of 'digital' and 'skill', and instead to locate and then articulate their needs and priorities with more differentiating precision. By dis-assembling the concepts of 'digital' (the what), 'skill' (the why), and 'user' (the who, and where), and then overlaying them with the concept of 'CALM' (the how), this framework not only scaffolds critical reflection, but helps to build an essential 'consensus and shared understanding' (Finnis & Kennedy, 2020: 5) of key concepts enabling a clarity in discussions and decision-making around digital skills development and confidence building – for a team, for an institution, for a network, and for (even, strategically) an entire sector.

These framings (borne out of this act of multi-partner collaborative research) have now become embedded in the sector's practice. Having partnered with the One by One collective, national bodies such as Arts

Council England and the National Lottery Heritage Fund (in the UK) have, for instance, ingrained the principles of the 'framings' within their commissioning of the 'Digital Culture Charter' – a shared reference point 'for all cultural organisations in the UK using, or planning to use, digital content, services, experiences, data, systems or technologies as part of their work' (Digital Culture Compass, 2020a). Wider still, the framings are now captured within the International Council of Museums' dictionary definition of 'digital', and so providing a transparent and consensual understanding for museums around the world working with this complex and multi-dimensional concept and set of practices (Parry, 2023a). 'Use', 'manage', 'create/collect', and 'understand', now serve the sector as a shared set of co-ordinates for discourse and practice around digital. And they do so, of course, as 'live' concepts and terms, aware of their need for continued constructive review, adaption, and extension (Finnis & Kennedy, 2020: 10).

Understanding digital confidence in an holistic sense

Alongside its highly 'context-based' approach, the One by One 'framings' also advocate for an approach to digital confidence building in the museum that is intentionally holistic and institution-wide. These underpinning insights were informed by a set of large-scale participatory action research interventions based in six institutional locations across the UK.[4] In each case the intervention was able to iteratively investigate in real-world, real-time professional settings how different dimensions of organisational structure and working practice impact upon the building of digital skills and confidence in museums.

Partnering with Derby Museums (an independent trust in the UK), the project worked closely with the leadership team at a defining moment of ideation and planning to determine the role that digital technology would play within the envisioning of a new museum – the Museum of Making (Mason, 2020a). The intervention helped evidence the crucial role that digital thinking can play in articulating a museum's values, and how the act of visioning can recognise the contribution that digital working practices make as part of the broader service design strategy of the organisation. In this case:

> Derby Museums is a value-driven organisation. The vision would be pointless without clear values that define why the trust exists.

> The vision statement is fundamental for digital activity to thrive. For example, Derby Museums' staff members are encouraged to use their own Twitter accounts together with the official social media and marketing tools […] In this example, the overall values of the organisation, as stated in its vision, are projected to the community through the different voices of museum people who are using their personal social media accounts to open conversations with public, communities, and peers.
>
> (Mason, 2020a)

Consequently, with digital technology, digital culture, and digital practice embedded within the museum's articulation of itself, in its vision and visioning process, the use of digital skills and the fostering of digital confidence become an 'innate' function of the organisation (Mason, 2020a). Digital becomes prioritised within the museum's everyday operation (what it does) and higher-level strategy (where it is heading). The example of Derby Museums showed how a digitally-informed vision of the museum (and, in turn, a museum visioning process informed by digital), allows workers to 'develop a 'digital' mindset and digital practices that are aligned with and normalised within the museum's culture and organisational working practices' (Mason, 2020b).

Collaborating with the National Army Museum (NAM) and the Museum of London (MoL), the project also considered the role that leadership plays within the building of digital skills and confidence within a museum. Through participatory action research involving the embedding of a researcher working closely with members of the executive team and those with leadership roles related to digital portfolios, the research concentrated on the adoption of new digital practices and processes at both institutions (Vargas, 2020a, b). At NAM, the intervention's objective was to 'ensure all museum people encourage, and influence, digital skills to flourish across the organisation' (Vargas, 2020b), with a particular focus on promoting and sustaining cross-departmental collaboration to support major museum events and exhibitions planning, processes and practices. The challenge, therefore, for the project was to understand:

> the right balance and architecture of in-person and online collaboration, without adding to already hectic workloads and complex timelines. We also needed to prevent slow-moving bureaucracies

> from impeding those converting to a new way of working, by clearly defining scope, responsibility, and methods for reporting concerns to managers (escalation processes). The solution was to use collaboration across the site with flexible, or agile, working methods to be proactive in developing, and communicating about, the museum's major projects. This approach enabled all museum staff to find the most appropriate ways to set priorities and to break project planning processes and practices into small steps.
>
> (Vargas, 2020b)

As well facilitating the distribution of digital leadership at all levels of the museum, this practice-based research also crucially developed platforms (i.e., a new 'digital commons' online community space) for sharing skills development (Vargas, 2020b). At MoL, a similar strategic focus was placed on gaining better understanding of how members of staff across the whole organisation might have the opportunity to influence the growth of digital skills in the museum, but in this case by taking the specific example of developing 'a central content theme for proactive, consistent and cohesive content guiding the majority of the museum's digital content' (Vargas, 2020a). Central to this transformative work with the museum was identifying the need to create spaces for shared skills development, leading to the initiation of a working group (a 'digital hub'), and new programmes (such as 'Work Out Loud Wednesdays').

> The museum had no shortage of digital content ideas, opportunities and staff who wanted to find a way to communicate with a diverse set of audiences. Staff members were accomplishing existing and new museum goals separately. What came to the surface during the discovery process was there were many people creating a lot of successful digital content within their own departments without a shared content vision, strategy, or planning practices and processes. If this digital content was to achieve greater success, senior managers recognised the need to create a shared space to address new ways of working. This needed to bring together all areas of the museum to develop a careful and considered content approach, encompassing the current strategies and information about visitors as well as taking account of aspirations for the new museum.
>
> (Vargas, 2020a)

In both organisational cases (at NAM and at MoL) the One by One research highlighted the power of leadership to activate digital skills development in the museum. However, this was 'leadership' understood not just in terms of those individuals at executive or unit head level with explicit responsibility for digital, but by assuming the form of 'leaderful behaviour' that all members of staff could openly demonstrate through their engagement within an active and validating culture that promotes skills sharing across the organisation.

Working alongside these studies of 'vision(ing)' and 'leadership', a third partnership (with National Museums Scotland) provided the opportunity to understand the role that organisational processes have within the building of digital skills and confidence. Specifically, this collaborative research intervention set out to find ways to incorporate digital skills development into existing, well-established business processes within the museum, to energise individuals about their own digital development and broaden understanding of what 'digital' means to different teams across the organisation (Cawston & De Wild, 2020). Signalling both the human/developmental and infrastructural/technical dimension to the challenge, the research brought together the museum's Digital Media and Human Resources teams, along with its Collection Services, Curatorial Teams (in Natural Sciences, and Science and Technology), and parts of the Learning and Programmes team. Building upon this cross-institution support and mandate, the alliance of organisational partners designed and tested a process for individual staff members to identify their current digital skills and the areas of improvement to help them in their specific roles.

> We named this process: Developing Digital Potential. It involved line managers across the organisation having open and exploratory conversations with their staff members about their digital skills and ambitions. This was then written up between both the staff member and their manager in a Digital Development Plan, which set out current skills and training needs across the next 12 months and in the longer term which in turn helped the HR department to identify learning needs across the organisation.
>
> (Cawston & De Wild, 2020)

The new 'Developing Digital Potential' process was supported by an all-staff survey, a monthly focus-group, and a new seminar series.

Ultimately, the research intervention with National Museums Scotland evidenced the value of clear data insights into staff digital skill and confidence, as well as the impact of incorporating a digital skills discussion into existing staff development processes and systems.

> The initial conversations with team leaders and managers revealed that they are often not aware of the digital skills development needs of their staff and that there was confusion around what the term 'digital' meant when applied in different work contexts. The Developing Digital Potential process was seen as a valuable way to address these issues and to consider individual development needs. The open discussion process wasn't reliant on completing a set form and took into consideration long-term needs and ambitions rather than only focusing on annual objectives.
>
> (Cawston & De Wild, 2020)

As well as generating a new guide for 'Developing Staff Digital Skills' (De Wild, 2020) for other museums to use freely, this institution-wide conversation at NMS helped the museum to see differences in the perception of 'digital' in different contexts across the organisation. More profoundly, the research also presented the museum with the opportunity to assess where digital skills development might now be factored into the existing staff appraisal processes, and how it could be considered through the recruitment process, in job descriptions, as well as in the organisation's existing competency frameworks (Cawston & De Wild, 2020).

For the One by One research programme as a whole, alongside the adjacent studies into the role of vision(ing) (in Derby) and of leadership (NAM and MoL), the NMS intervention substantively evidenced the enabling role of business processes and systems in workforce digital skills development. However, two further interventions (at Amgueddfa Cymru – National Museum Wales (AC-NMW), and at Brighton and Hove Museums (BHM)), demonstrated the vital role that workplace culture also plays within this multi-dimensional understanding of digital skills building. Working across the seven museums spread across Wales, the collaborative research intervention with AC-NMW looked to develop ways in which people within the museum could overcome departmental barriers and silos to: increase transparency around who is leading and creating digital change within the museum; encourage collaboration and sharing amongst departments and teams;

and promote curiosity and awareness of what is happening outside the museum sector and how these trends and practices could apply to their work within the museum (Goudas, 2020a).

> We needed to bring people together from all disciplines and areas throughout the museum's different sites and create opportunities for them to learn from one another in an informal, friendly and collaborative way. We also wanted a way for different departments and business areas within the museum to showcase and share knowledge of the various digital initiatives that they are leading or best practices they are employing.
>
> (Goudas, 2020a)

Building on a baseline staff survey, 'digital leaders' were identified in the museum who were then able to form the core and active group of a new 'Digital Community of Practice' (Goudas, 2020b) – at the centre of which was a regular 'safe space' collaborative forum.

Complementarily, the action research intervention with Brighton and Hove Museums sought to understand the role that organisational culture plays within the development of digital skills, specifically with respect to building 'digital courage' (Frost, 2020a) in the workforce. Interviews across the organisations identified a challenge not unfamiliar to other museums, namely:

> A lack of time and funds to upskill current staff and volunteers or to hire in the right people. A lack of consistent support from senior leadership. Reasons for this included fear of undermining the city council and a reluctance to overhaul current social media approaches. A workforce of whom roughly 50 per cent did not feel particularly confident with social media and who expressed concern about its privacy and ethics.
>
> (Frost, 2020a)

The response was to trial a 'courageous' approach to two new digital initiatives within the museum: the development of a consensus-based social media blueprint for the organisation (Frost, 2020b); and a staff-led podcast series entitled 'Voices of the Royal Pavilion and Museums' telling stories about the objects, collections and buildings of the museum through the voices of its staff and volunteers (Frost, 2020c).

The collaborative formulation of the social media blueprint not only provided a coherent strategy for the museum into which all staff had invested, but it served to 'galvanise museum people around the organisation's mission and vision and help them to feel more closely affiliated with its values'. Likewise, the co-production of a staff podcast engendered an organisational culture around digital in which there was a 'willingness to listen to all voices regardless of job role or salary band' (Frost, 2020a). The podcast:

> aimed to be a platform for employee self-expression, seeking to encourage creativity through personal storytelling. The microphone was used to empower staff and volunteers to reflect, consider and create alternative narratives about the buildings, objects, collections and histories of the museum service. The podcast sought to position [the museum's] five sites as intrinsic to the staff themselves – as part of their identity and shared history as citizens within the community of Brighton and Hove. The podcast series was a polyvocal exercise, comprised of the multiplicity of voices which make up [the museum].
>
> (Frost, 2020a)

Evidentially, from the outcomes of these five, year-long, concurrent studies, and from the wider consultative work that grew around them (Malde et al., 2019), a clear set of co-ordinates for digital change in the context of museums have emerged. Namely, that in order to cultivate the development of digital confidence (across personal, collective and sectoral levels):

- Vision(ing) prioritises digital
- Leadership activates digital
- Processes enable digital
- Culture supports digital
- People drive digital

Together, these credos provide the vectors within which individuals and institutions alike can not only conceptualise where digital lives within a museum, but can understand where in more practicable terms to begin to work on developing, enhancing and refining digital skills as a normative feature of museum working practice. Given its clarity and efficacy, this holistic understanding of digital confidence has

been adopted by key cultural agencies – not least within the 'Digital Tracker', part of the UK's Digital Culture Compass (2020b), a freely available online maturity tool enabling organisations across the UK to assess their approach to digital technology.[5] Informed by the holistic principles offered by the One by One 'framing', the Digital Tracker prompts the user to reflect upon the foundations (estates, IT services, finance, HR, and so on), the functions (the management of collections, the supporting of talent, and the provision of programme, for instance), as well as the frameworks (the mission, strategy, and policies) of a cultural organisation. And so, by looking across the domains of museum vision, leadership, processes, culture, and people, the Tracker guides the user in taking an institution-wide view of digital activity, digital change, and digital confidence building – helping them to assess the ways that digital is being used at present and setting targets for where they would like to be on their digital journey moving forward.

Towards purposeful digital confidence

Today, the postdigital museum is confronted by the new norms of metamodernity (Parry & Dziekan, 2022), processing more-than-human perspectives (Cameron, 2021), the twin green and digital transition (JRC, 2022), and centring digital equity (Slark, 2024), all within a new connected landscape of super-abundant linked cultural data (Bailey et al.: 2024). And this does not even broach the promises, revolutions, and hallucinations that Artificial Intelligence might well add to these challenging conditions (NEMO, 2024). Together, each of these frontiers pose questions of responsibility, accessibility, ethics, and sustainability. Amongst so much flux and uncertainty, the parameters and contexts around the museum and its use of digital technology continue to shift, remaining fluid, 'convoluted' (Frost & Vargas, 2024), and open to rapid change. The framings shared here therefore provide a degree of clarity, at a time when opacity can be all too prevalent. They aim to offer points of consensus, when certainty can be elusive. Transparency, when complexity abounds. And they do so with the premise that each museum, and each and every museum worker, needs to be supported to find their own pathway to digital confidence with a clear sense of purpose.

From the outset, this research programme was predicated on a very simple, but key, assumption: that digital maturity would not be arrived at in the museum sector through a single, top-down, fixed curricular,

or homogenous roadmap to manage change. But rather, it should come down to each museum, each work team, and each practitioner to find the agency to chart their own journey towards digital confidence. It is not too controversial to assert that previous attempts to plot a singular route to 'achieve' digital change in the sector had been fallacious. Those efforts have largely underestimated – if not overlooked – the diversity of museum organisations, and the variety of their settings and subjects, visions and ambitions. Not to mention their current levels of digital capability, resourcing and infrastructure. The sector had, in other words, been asking the wrong question. What museums actually needed was not a sole vision of 'best practice', or a step-by-step plan, or a sanctioned list of skills to prioritise. Instead, what has been needed and long-overdue was a reframing of digital skills to inform a framework that provides the tools and sources from which each museum (and every museum worker) can develop their own digital confidence on their own terms, given their own unique contexts – and in the process build the pathway towards digital maturity of the entire sector 'one by one'.

Notes

1 The Baltimore Principles was convened as part of an 'unconference' activity during the 2014 Museums and the Web annual conference in Baltimore, Maryland. This Museum Professional Development Forum was programmed as part of MWX, the exhibition initiative of Museums and the Web curated by Vince Dziekan. The session asked the assembled community of museum professionals and scholars how effectively cultural and educational institutions are preparing the next generation of museum practitioners to meet the grand challenges of the digital age, and identify opportunities to shape a collective agenda with the larger purpose of advancing teaching and learning, professional development and scholarship across the emerging fields of museum technology and digital cultural heritage. The aggregated outcomes of these facilitated discussions (focusing on curriculum, musetech, digital curation, museum studies and women in technology leadership) were subsequently translated into the 'Baltimore Principles', which articulated the step changes needed for the next generation of digital training provision in the museum sector.

2 DART was funded by the Canada Council for the Arts Digital Strategy Fund, and delivered by the Art Gallery of Burlington in partnership with digital strategy experts Surface Impression and Culture24. DART had to rapidly adapt its action research model to online delivery as its first iteration coincided with the first Covid-19 lockdowns in Canada. With workshops pivoting to video conferencing platforms, the physical decks of One by

One cards, representing the 'framings', were printed and distributed to all the cohorts on the programme – creating a welcome, tactile, 'live' moment in these online events.

3 This 'Phase 1 Report' was authored by Sally-Anne Barnes and Erika Kispeter (Institute for Employment Research, University of Warwick), Doris Ruth Eikhof (CAMEo Research Institute, University of Leicester), and Ross Parry (School of Museum Studies, University of Leicester), and undertaken between September 2017 to February 2018.

4 The One by One 'Digital Fellows' were embedded in six organisations around the UK from January 2019 to January 2020): Marco Mason with Derby Museums (supported by Hannah Fox); Lauren Vargas with the National Army Museum (supported by Ian Maine) and the Museum of London (supported by Frazer Swift and Gemma George-Lawrence); Karin de Wild with National Museum with National Museums Scotland (supported by Rob Cawston); Yoti Goudas with Amgueddfa Cymru – National Museum Wales (supported by Dafydd James); and Sophie Frost with Brighton and Hove Museums (supported by Kevin Bacon).

5 Co-authored by the One by One team, in partnership with Culture24, The Audience Agency and (project leaders) The Space.

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2 How to lead in a digitally distributed museum

Kati Price and Dafydd James

Introduction

Digital developments are constantly changing and reshaping museums. How do museum leaders navigate the many opportunities and support museum organisations within their digital transformation? To gain further insights in response to this question, we invited fifty-six GLAM[1] organisations from around the world to participate in a comprehensive survey (Price & James 2018). The results presented a global picture of how digital was being shaped in museums and, conversely, how it is shaping our cultural institutions today. These insights were complemented with a series of interviews with international colleagues across the UK, the USA, Canada, Australia, New Zealand, and Europe. This study gave us in-depth insights into how museums and cultural organisations are going about re-configuring their digital teams in order to define and drive success. In the process, we were able to identify emerging patterns around the changing skills, structures, and relationships of digital teams, and the implications for digital responsibility and activity across a cultural organisation, including how it is defined, funded, structured, and distributed.

The research identified several models of digital structure and their relationship to levels of digital maturity. Our findings indicated that museums and cultural organisations have not yet reached full digital maturity. While most are still operating within a centralised model, there is a clear aspiration to distribute digital responsibilities more broadly across the organisation. A major obstacle to achieving this is the significant underinvestment in critical digital skills, particularly in

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data analysis and technical leadership. Additionally, organisations are struggling to set and measure realistic objectives for digital success.

Once organisations are better equipped to leverage data and invest in digital leadership—skills that were notably lacking in the teams we surveyed—they will be in a stronger position to use digital media to fulfil their mission and differentiate their offerings. Achieving full digital maturity will require organisations to use data and insights to guide strategy, secure adequate funding for digital activities and infrastructure, and measure the impact of their digital efforts. Our research also highlighted the need for greater clarity in organisational decision-making and governance regarding digital activities and resource allocation. This will ensure that digital strategies are effectively aligned with the overall mission and goals of the organisation. It is especially this second insight that has informed this chapter.

The transition towards distributed museum leadership

In the years since this research, and within a radically changed context, digital transformation in museums has accelerated. In the process, we have recognised a move from more centralised modes of production, towards a distributive (hub-and-spoke) model on the journey towards digital maturity—at least from the perspective of the anglophone, Global North. Our research proposes that the structure of a digital team, or digital responsibility, is an indicator of the level of digital maturity of an organisation. As part of this process, we mapped digital team models to the four segments of Forrester's Digital Maturity Model 5.0; namely, decentralised, centralised, hub-and-spoke and holistic (Forrester Research 2017). While the majority of respondents to our original survey were found to be in the 'adopter' phase of digital maturity, where digital teams and activity are centralised, we observed that some were moving towards a more distributive model, where a small central digital unit coordinates collaboration between individuals or small teams in the delivery of digital activity across other areas of the organization potentially through a matrix structure. We advocated that, as part of their journey towards digital maturity, organisations and the digital leaders within them oversee a planned approach to the next stage and structure, with the requisite investment in digital skills, literacy, and infrastructure. It is important to consciously establish the right processes and governance to ensure a smooth transition from one stage of maturity to the next.

However, within the new context organisations are now operating in, we have sensed that a swifter, less planned approach towards digital maturity has emerged, hastened by, amongst other things, the Covid-19 pandemic. Such a move towards a more distributive model was necessary to deal with this dramatically changed context, but happened to large extent without the necessary planning and focus on process that is ideally needed in the move towards the next stage of digital maturity. In the wake of lockdowns resulting from the global pandemic, museums around the world needed to close their doors, necessitating rapid organizational changes. While physical contacts were kept to a minimum, the digital provided an opportunity to stay in contact with each other. The heavier reliance on technology highlighted the urgent need to clarify the vision and purpose of integrating digital within the operational backbone of the museum, while at the same time we were shifting to new platforms and working remotely. Consequently, new organizational and operational models were tested, accelerated, and put into action, uncertain of their duration. This period also underscored the requirement for people within teams across the organization to undergo digital upskilling.

There remains a risk of museums reverting to previous ways of working, potentially undoing the progress made during this period of accelerated change in the process. However, digital innovation is an iterative, ongoing process and new technologies will continuously be implemented in museums. For instance, there is currently another significant development reshaping museums—the rapid advancement of artificial intelligence (AI) and big data modelling. From our perspective, the increased use of AI will prompt museums not only to reconsider the validity of their data, data management, and data governance but also to conceive new modes of operation supported by technology. Grappling with the implications of this evident data revolution will not only require technical proficiency but also soft skills such as problem-solving, analysis, and strong digital and data leadership. This is also a time when organisations are scrutinising their hierarchies and addressing workplace and societal inequity and inequalities, various sectors are challenging themselves to identify and address injustices, and the museum sector is re-evaluating the profile of its leadership.

For this reason, we need to ask afresh the question of what effective digital leadership looks like, particularly as museums are moving towards more digitally distributive models with their biggest impact—and potential—being online. So, just what constitutes effective

leadership today? With ongoing digital innovation, it is essential to think long term and prepare for robust museum leadership that is capable of effectively navigating digital transformation by leading others (the organisation, teams, and people) through change, while mitigating its emotional impact. In order to effectively prioritise digital initiatives, this question is particularly relevant for digital leadership at the very top of museum organisations.

This new context has surfaced and generated a new set of organisational challenges around digital museum leadership (Winesmith & Anderson 2020). For some organisations, the transition to digital maturity was undertaken prematurely, whereas others took a more considered and long-term approach. These museums invested in changing their vision and leadership, systems, and processes, as well as the culture and the way people work. To thrive in a post-Covid-19 world, museums need to continue their swift digital transformation but do so by centring their mission over centring the technology. An advantage of the new way of working during the pandemic was that it brought into focus the true essence of what it means for museums to be digital. It is not solely about technology; instead it is about purposefully integrating digital into the museum's overall mission and implementing new processes, all while guiding individuals in adapting to new ways of working. This represents a fundamental shift within the organisation and its workforce.

The challenge of digital literacy sits at the very top of the organisation. However, in a digitally mature museum organisation, there is a shift away from relying solely on command-and-control leadership towards embracing distributed leadership. Granting individuals the autonomy to lead and innovate necessitates a nuanced understanding of when to intervene in the day-to-day operations, which may exist in other parts of the organisation. Being engaged at precisely the right moment and in the most appropriate manner is crucial, as is the recognition that the route to leadership requires a variety of skill sets. Successfully leading a museum no longer hinges solely on long-term strategic plans; rather, the emphasis now rests on guiding individuals throughout the organisation to adopt a strategic mindset. Within this distributed context, the ability to make good judgments on the level of engagement within projects to come to a positive, productive outcome, becomes a crucial leadership skill. Particularly in more digitally mature organisations, where digital activity is more distributed, new challenges emerge. For them, it is not only about building a digitally

mature organisation, but defining how to lead in a digitally distributed organisation.

The essence of digital leadership within a distributed museum organisation

At its core, distributed leadership shares essential qualities with effective leadership in general, such as strong communication, the ability to inspire trust, and the skill to motivate and engage others. However, it also requires some additional skills. A crucial quality for digital leaders is the ability to guide teams and the museum organisation in leveraging new technologies while navigating the uncertainty they bring. The key to good digital leadership in our experience is supporting organisational change while providing a clear vision and maintaining a sense of purpose.

In order to effectively disperse digital confidence throughout the organisation, a clear vision is crucial for providing direction and ensuring that each individual has a defined role within the organisation. To incorporate digital activity purposefully, it should be aligned with and implemented as an integral part of the museum's overarching mission. Digital initiatives require activities and new ways of thinking that should be embraced by people from across the organisation. Additionally, it is important that digital is not treated as a one-off, but rather as continuous long-term investment. While strategies should have a long view, it is vital to consistently evaluate and adjust strategic plans to ensure their ongoing relevance and adaptability to the impact of new technological developments.

Effective communication between organisational leadership, digital leaders and their employees is crucial for successfully implementing strategies and visions. This involves not only providing clear explanations but also actively listening and incorporating input from employees, who can serve as valuable sensors, identifying unforeseen barriers and envisioning how to execute strategies within the context of museum practice. However, it is also important to be able to identify business value. Rather than immediately adopting the next emerging technology, it is more effective to reflect on the motivation behind initiating any new digital initiative and how it can contribute to the museum's goals or central mission. Successful digital initiatives require time, energy, and investment, which is why understanding the business goals is essential. In a distributed organisation, strong

leadership also requires the ability to prioritise strategic objectives within its vision. As digital leaders are now dispersed across the organisation, maintaining an overview and clearly articulating why certain goals take precedence over others is essential. This rationale should be aligned with broader organisational priorities. All of these aspects underscore the need for effective governance processes. A primary challenge that museums face in the digital era is the constant need to adapt to a changing environment, which can be disorienting. To become an effective, distributed organisation, leaders need to constantly realign people and reprioritise tasks. This requires more than just digital literacy; digital leaders need business literacy.

Cultivating a digitally confident culture

Once the foundational elements of digital leadership are established, organisations can focus on establishing greater clarity and confidence in their digital processes. Digital transformation and maturity are dependent on cultivating a "digital culture"—an organisational mindset driven by a shared digital vision, where teams collaboratively develop digital products aligned with clear business goals and user needs (Mason 2022). Achieving this requires multidisciplinary teams and business functions to invest both time and resources into discovery phases. These phases allow teams to test hypotheses, refine problems, and identify needs and opportunities effectively.

At its core, a digital culture relies on a deep understanding of audience and user needs, drawing heavily on user-centred design processes and methodologies. User research and insights fuel the design and development process, as well as to challenge and test assumptions. This approach often benefits from iterative product development techniques, such as Agile,[2] where diverse teams unite to deliver products or achieve specific customer goals while defining success metrics. Transparency is key, with digital development outcomes shared early and frequently. Agile, user-centred design practices such as sprint showcases or demos can help stakeholders understand and contribute to the digital development process. The principle of "inspect and adapt" guides teams to remain flexible, evolving as organisational priorities and user needs shift. These processes are critical for transitioning toward a more distributed model, where digital activities occur across the organisation and depend on strong connections between cross-functional teams.

By putting the user at the heart of digital activity and product development, teams that are working in a more distributive way are able to develop a shared language of user need and opportunity. They are able to frame needs in common ways, for example, around particular user personas, user modes or user stories. This encourages colleagues across the wider organisation to think in terms of the needs of people and solving business challenges rather than requesting specific product features or specifications and coming with a pre-determined technology solution in mind. Any requests coming into a central, or indeed more distributed digital teams require a common process to support prioritisation and planning. In this way, ideas, requests can be more consistently corralled and recognised, for delivery to happen in a more distributed way.

Ultimately, fostering a digital culture within a distributed organisation requires not only technical expertise but also a strong foundation of soft skills in digital leaders. Key among these are empathy, business literacy and advocacy. Empathy is vital for understanding and addressing the needs of both users and team members, ensuring that digital initiatives are human-centred and collaborative. Business literacy equips digital leaders to align digital strategies with organisational goals. And advocacy is crucial for championing the value of digital transformation across the organisation, building support and momentum for change. These skills are indispensable for navigating disruption and achieving sustainable transformation within museums.

Confidence in devolving leadership

A distributed organisation demonstrates confidence by delegating leadership and de-centralising decision-making processes. Decision-making and responsibilities are no longer concentrated solely at the top; instead, they are distributed across the organisation. Given the rapid pace of change in digital technologies, individuals will often be able to adapt faster than organisations. In an organisation like a museum, which used to be rather hierarchical and where power traditionally rested at the top, the idea of distributing power and decision-making might not be readily embraced. There's often a misconception that power is defined by the ownership of teams and resource budgets. However, in more digitally mature museum organisations, we have seen how decision-making is pushed down to the lower levels of the organisation. Leadership revolves more around enabling and empowering individuals to become digital leaders themselves.

This leads to an ambitious approach to accountability, wherein teams take the lead and become responsible for their respective areas of digital activities. This demands rigorous governance. Ideally, digital initiatives make use of practices that make use of Agile practices, including rapid, iterative 'sprints' so that throughout the process of creating a product or organising an event, there are regular moments for evaluation. This offers the opportunity to adapt and react quickly to changes due to rapidly evolving technological developments. Yet, who is ultimately responsible for the process and the end result? While some museums might employ Scrum Masters[3] to support teams within this process, it is essential that leaders place trust in individuals within the organisation, consider who is consulted and informed, and clearly delegate responsibilities. It is useful to work with a hub-and-spoke model. This provides a means of distribution that relies on a central location (the hub) and a number of spokes leading out from that hub. The communication between the hubs should go in both ways to be effective. This way, museums become dynamic, networked organisations.

Our experience tells us that working collaboratively in cross-functional teams presents its own challenges. It may take some time to start understanding new perspectives and establish a common language. Yet, in the end, these types of collaborations are able to offer new insights and alternative perspectives. When digital technology is added to this mix we arrive at what Professor Tom Malone and his colleagues from MIT refer to as 'collective intelligence'.[4] His research asks: "How can people and computers be connected so that—collectively—they act more intelligently than any person, group, or computer has ever done before?" (Malone & Bernstein 2015). Ultimately, the goal of collaboration is to make better decisions together than would have been possible independently. Getting there, however, is not easy, as working in a more open, agile environment can sometimes lead to conflict between a central hub and areas that may have previously been more autonomous, perhaps due to specialist knowledge or management structures. Effective communication between distributed teams and individuals is essential. This requires the digital leader to understand what part of a person's or team's autonomy is being threatened and realise what can be preserved to gain influence and more coherence between operations.

The adoption of digital can be perceived as a task of the IT department. However, the establishment and maintenance of digital

infrastructure within a museum is necessarily the determining factor or reason for museum staff to work digitally. More often, issues such as organisational structure, availability of time, resistance to change, and risk tolerance hold back the digital maturity of museums. These issues are not easily resolved through implementing a robust digital infrastructure. Instead, this requires strong leadership that can put these things in place. Maturing museums drive the digital transformation in another way by accompanying new digital infrastructure with making organisational changes. Not only do people need to be trained to use new digital tools, but they also need a supportive environment and time to integrate them within their work practices.

Concluding observations

While museums are moving towards greater digital maturity, leaders are facing new challenges. In a distributed organisation where people work with digital tools across the entire organisation and are encouraged to become digital leaders themselves, leadership takes on new dimensions. Digital leaders do not necessarily need to be experts in digital technologies; instead, it is more about collaborating with people and guiding them in a rapidly changing environment. They no longer lead their own digital teams; instead, they are responsible for nurturing a digital culture throughout the museum organisation. Rather than initiating digital projects, delivering digital products, or managing digital infrastructure, digital leaders should envision how digital integration can align with the museum's mission and inspire a change in mindset.

Digital transformation is an ongoing endeavour. As digital technology continues to disrupt, evolve, and transform work in the museum sector, even museums that have achieved digital maturity today will inevitably need to adapt to new changes tomorrow. Becoming more digitally mature is therefore a continuous process that needs to be taken with care and one step at a time. It begins with assessing where a museum stands in terms of digital maturity and determining the next steps. This distribution is likely to vary within the sector, your organisation, and even among teams. Assessing this distribution can provide valuable insights into priorities and feasibility. From there, the journey moves to the next phase. Maintaining an appropriate pace is crucial to empower individuals to drive change. Achieving greater digital maturity necessitates structural changes within the organisation

and its operational methods. Only then can digital truly become integrated within the museum.

Digitally confident museums possess a digital vision that aligns with the museum's overarching mission. This guides individuals across the organisation in purposeful digital utilisation. In the pursuit of digital maturity, it is important for leaders to provide direction, including setting priorities at the right times. Digital transformation demands a different perspective, actions and, ultimately, a different way of thinking. Confidence is established through providing clarity over what the vision of the museum is, as well as by taking steps that are substantial enough to bring about structural changes and propagate them across the organisation, yet manageable enough to minimise resistance and opposition. Similar to building a digital product, digital transformation requires an iterative process that progressively becomes more advanced.

From our combined experience, the key lies not only in strengthening the most digital aspects of an organisation, but also in overcoming barriers and empowering those components that are poised for progress. Museums are increasingly adopting digital not just as a tool or infrastructure, but as an integral part of their culture. It influences the core values (that what people say) and assumptions (that what people believe and how they act) within the organisation. A digital culture promotes collaboration, encourages appropriate risk-taking, embraces agility, and fosters continuous learning. In a less hierarchical and more distributed organisation, trust is essential. Leadership must trust employees' decision-making capabilities, and employees must trust that their leaders will provide clear guidance and maintain an appropriate pace in a rapidly changing environment. Cultivating such a culture is crucial for driving digital transformation throughout the organisation. Therefore, a critical responsibility for leaders is to preserve and strengthen this culture across the organisation (Chan, Johnston, & Giannini 2019).

As museums continually advance in digital maturity, a new generation of leaders is emerging. It is not surprising that museums need to compete with other organisations, yet it is essential to actively seek and attract new talent. Leaders possessing sought-after skill sets are likely to depart sooner rather than later. While it may not always be possible to retain them, it is valuable to nurture them within the museum and support their continuous growth and development. The new generation of digital leaders will likely join a more digitally mature

museum—one that's more agile and has even further distributed leadership. However, they will continue to face new challenges arising from ongoing digital developments. Through designing new visions, and prioritising and executing strategies, they will once again propel the museum into a new phase of digital maturity.

Notes

1 Galleries, Libraries, Archives, and Museums.
2 Agile methodology is a widely adopted project management framework based on iterative development processes informed by values and principles established by *The Agile Alliance* group of software practitioners in 2001. See: www.agilealliance.org/agile101/.
3 Facilitators of design sprints. See: www.atlassian.com/agile/scrum/scrum-master#:~:text=What%20is%20a%20scrum%20master?,team%20to%20improve%20their%20workflows.
4 The MIT Center for collective intelligence. See: https://cci.mit.edu/index.html.

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3 Digital Labour Is Emotional Labour

Sophie Frost

> I have been overwhelmed by how much 'emotions' have been a 'sticking point' for philosophers, cultural theorists, psychologists, sociologists, as well as scholars from a range of disciplines. This is not surprising: what is relegated to the margins is often, as we know from deconstruction, right at the centre of thought itself.
>
> (Ahmed, 2014, p. 4)

Introduction

This chapter argues that only by articulating the affective, emotional dimensions of digital work in museums and heritage organisations is it possible to develop a richer understanding of the role and importance of technology within sites of cultural history, cultural production, and cultural consumption.

To date, scholarship focused upon technology in museums and heritage workplaces has examined digital skills, digital participation, digital-first collecting, digital collections management, multi-media content development, digital interactives, the role of AI, VR, and AR, as well as the ethics of social media and Big Data. However, there has only been minimal attention given to the affective and emotional dimensions of digital work within these settings. Indeed, the emotional aspects of digital work have been largely overlooked, noticeable only in the margins of daily activity and, on occasion, understood as a more "feminine" characteristic of digital work (and thus less worthy of explication). The COVID-19 pandemic acted as a critical juncture in exposing the role of emotional labour within digital practice in the cultural sector. As will be explored shortly,

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this moment surfaced a new vocabulary of emotion and care specifically within digital museum practice. A result of this has been an increasing acknowledgement in policy literature of the link between emotional labour and digital work: the UK's Creative Industries Policy and Evidence Centre (PEC) has reported how the lockdown "amplified existing challenges faced by the workforce in digital roles", claiming that "digital workers…can often feel unsupported and under pressure" (Kidd et al., 2021, p. 21).

The story told here focuses on the transformative possibilities of emotional work undertaken by digital staff working for museums across a range of international settings. It maintains that people, technology, and museums – these three dimensions – are a constitutive tripartite, in which each component part is as necessary as the other in the effort to create truly progressive cultural institutions. Such an emphasis on *people* demands a fresh reading of the emotional nature of working with technology in these settings. In 1963, Everett M. Rogers defined an "innovation champion" as someone who is the "broker and arranger for innovation" (2003, p. 415). For Rogers, these champions occupy a key linking position in their organisation, possess analytical and intuitive skills in their understanding of different individual aspirations, and demonstrate well-honed interpersonal and negotiating skills when working with other people (2003, ibid). This chapter shows how digital staff in museums are also innovation champions, required to undertake emotional labour whilst promoting digital transformation and change.

Such a reading is aligned with feminist thinkers such as Donna Haraway when she states:

> Feminist accountability requires a knowledge tuned to resonance, not to dichotomy…Feminist embodiment, then, is not about a fixed location in a reified body, female or otherwise, but about nodes in fields, inflections in orientations, and responsibility for difference in material-semiotic fields of meaning.
>
> (1988, p. 588)

In seeking to better understand the emotional labour involved in digital labour, this chapter draws on theories of *affect* by searching for, according to Haraway's understanding, the resonances; the "nodes in fields" and "inflections in orientations" to be found within personal testimonies of digital work (1988, p. 587).

The Origins of Emotional Labour

Understanding the intellectual underpinnings of emotional labour can help us better understand how it can be effectively applied to studies of work in museums and, more specifically, digital museum work. In her 1983 book *The Managed Heart*, sociologist Arlie Russell Hochschild defined emotional labour as a kind of labour that "calls for a coordination of mind and feeling" and which "sometimes draws on a source of self that we honour as deep and integral to our individuality" (1983, p. 7). In her original study, Hochschild explored the emotional labour of people (predominantly women) working in service professions, undertaking primary research of flight attendants at Delta Airlines for example, where she understood the term as applying to a form of work which is sold for a wage, and therefore having an exchange value. Hochschild describes how emotional labour operates through the pervasiveness of "feeling rules":

> Acts of emotion management are not simply private acts; they are used in exchanges under the guidance of feeling rules. Feeling rules are standards used in emotional conversation to determine what is rightly owed and owing the currency of feeling. Through them, we tell what is "due" in each relation, each role. We pay tribute to each other in the currency of the managing act. In interaction we pay, overpay, underpay, play with paying, acknowledge our dues, pretend to pay, or acknowledge what is emotionally due another person. In these ways…we make our try at sincere civility. (1983, p. 18)

These "feeling rules" become an overarching yet unspoken doctrine through which organisations manage their staff and clients. Later, we will explore how such rules operate within recent lived experiences of museum digital workers. For Hochschild, the cultivation of "feeling rules" has meant that social exchange in some workplaces has been "forced into narrow channels; there may be hiding places along shore, but there is much less room for individual navigation of the emotional waters" (1983, p. 119). In other words: organisational expectations placed on one's emotions at work compromise the ways that workers can connect with one another, as well as with their own emotional wellbeing.

Later, Hochschild extended her research to the emotional labour of those working in care provision in both paid and unpaid settings, including nursing homes, childcare centres, hospitals, as well as

within the family (1989; 2003; 2012; 2013). Throughout, she remains clear that emotional labour need not be a negative phenomenon, but rather "implies directionality, intention, and effort" (2013, p. 31). She continues: "just as a professional singer takes pride in her highly trained voice or an actor in a moving performance on stage, so the care worker often takes pride in cultivating warm, trusting, and resilient relationships with clients" (2013, ibid). By Hochschild's own admission the term emotional labour has in recent years become "blurry and overapplied" (Beck, 2018). It has been adopted as a catch-all phrase in myriad analyses of reproductive labour, affiliated with a multitude of domestic duties commonly determined as women's work and "other Cinderella-y stuff that often falls to women – along with the admin that goes with it" (Wilkinson, 2018). The task for us, therefore, is to accept emotional labour as a blunt but valuable concept with which "to be more precise and careful in our ideas and to bring this conversation into families and to the office in a helpful way" (Beck, 2018).

Emotional Labour in Cultural Work

Emotional labour is not a new concept within critiques of work in the creative and cultural sectors, or across the so-called "knowledge economy" more widely.[1] Over the past two decades emotional labour has come to be seen by social scientists as a fraught and over-used concept when considering lived experiences of work in the creative, cultural, and media industries.[2] Studies since the early 2000s have noted how a "vocabulary of love is repeatedly evinced" across these sectors "with work imbued with the features of the Romantic tradition of the artist, suffused with positive emotional qualities" (von Osten, 2007, as cited in Gill & Pratt, 2008, p. 15). Feminist scholars such as Angela McRobbie have taken to task the unacknowledged costs of what she terms "passionate work" in the cultural and creative sectors (1998; 2015).

For such scholars, the dawning of this kind of work in the late 1990s came with a form of creative entrepreneurialism that was distinctively *affective* by nature. Cultural and creative work was mythologised as demanding emotional labour – the cultivation of mind and feeling; a process of drawing on a sense of self – in its call for workers to possess a "professional robustness to keep going and not be thrown off course, like a form of strength training" (McRobbie, 2015a). Theorists sceptically perceived promises of self-expression, self-actualisation, and freedom linked to work in these industries as problematic when cast through the lens of precarity, informality, and demands for flexibility.

Cultural workers, whilst "highly enthusiastic and uncomplaining" were seen to have "to perform a more creative version of what Arlie Hochschild called 'emotional labour' when writing about the training of airline cabin crew in 1984" (McRobbie, 2015a). In the US context, Andrew Ross's 2003 study of the "new industrial type" of "no collar" workers in New York's "Silicon Alley" and San Francisco's "Multimedia Gulch" similarly located emotional labour at its heart:

> On the landscape of modern work, the demand for emotional labour has risen in proportion to the decline in physical toil. *More of the self is engaged, and there is an element of theatricality in the way we are expected to perform our jobs.* For creatives in knowledge industries, this was especially true, and Silicon Alley had more than its share of people who came from the performing arts.
>
> (2003, p. 32) [*my italics*]

As Ros Gill and Andy Pratt state, the "loud affirmation of the potentially transformative and transgressive nature of affect" within cultural work misses "the anxiety, insecurity and individualised shame that are endemic features of fields in which you are judged on what you produce" and when "your whole life and sense of self is bound up with your work" (Blair, 2001, as cited in Gill & Pratt, 2008, p. 16). Eleanora Belfiore has similarly highlighted the "invisible subsidy" of creative professionals engaged in publically subsidised participatory arts projects (2022, p. 73). She explains how the "hidden costs" of this work – which include personal and psychological costs as well as ethical dilemmas – "have an effect on cultural workers' well-being alongside financial implications" and that they "take working practices in these areas far away from notions of 'good work'" (2022, ibid).

Emotional Labour in Museum Technology

Taken together, cultural work and knowledge work bear tangible similarities to digital work in museums and heritage organisations. Digital workforces in these settings can be productively considered a hybrid phenomenon of these two forms of work, at once knowledge workers – using, managing, understanding, and creating with digital technology and innovation – as well as cultural workers, that is to say: custodians of cultural historical collections, using digital to fulfil institutional commitments to cultural preservation and social justice. Being aware

of the myriad ways that emotional labour has been analysed within studies of cultural work and knowledge work – as the romantic aspect of cultural work; as the inevitable collateral of having a creative job; as involving the self and soul at work; as the justification for exhaustion, poor emotional wellbeing, and financial insecurity; as involving performativity and resilience – can help us better understand and reflect upon the role of emotion in digital work in museums.

Emotion and Digital Work in Museums

The following is an "affective" reading of digital work in museums during a two-month period in Autumn 2020 while much of the world was struggling to cope with the second wave of COVID-19. Action-centred ethnographic research was conducted with staff working on digital projects in a range of museums and cultural institutions across the UK, the USA, Canada, and New Zealand. The fieldwork culminated in the creation of *People. Change. Museums*. (2020, p. 21), a six-part podcast series which explored the relationship between museums and technology at a time of intersecting global crisis. As will be explained, this research evidenced the emergence of a new vocabulary of emotional labour – a lexicon of emotionality and care – at the heart of digital work. What does it mean to undertake an "affective" reading and why is it necessary here? The study of affect "is about infusing social analysis with what could be called psychosocial 'texture'", which consequently "opens up new thinking about nebulous and subtle emotions" (Wetherell, 2012, p. 2). To understand the interplay of emotion, emotionality, and digital transformation in museum work, we must attend to the undertones of more formal conversation and attempt to pinpoint what Anna Lowenhaupt Tsing terms the "rush of troubled stories" and "interwoven rhythms" that make up daily digital work in such settings (2015, p. 34). An affective reading of the museum space, therefore, demands an alertness to subtle alterations in "feeling rules", and that is where we will begin.

A Shift in "Feeling Rules"

At the time of data collection, "feeling rules" – the standards used in emotional conversation to determine what is owed and what is owing in the prevailing currency of feeling (Hochschild, 1983) – had substantially shifted and evolved across the cultural sector, notably

within museum digital work. Sara Snyder, Chief of External Affairs and Digital Strategies at the Smithsonian American Art Museum and Renwick Gallery (USA) described how "chronic anxiety is pretty widespread", with staff "just not getting the sleep they need" (interview with Sophie Frost, October 30, 2020). She continued:

> I'm muddling through, and I'm going to go ahead and admit it, mentally and emotionally, most parents I know are not really OK right now. We keep saying it's impossible to do this again, but the next day we wake up, if we ever went to sleep in the first place and do it all again.

Emotional vulnerability and honesty became paramount during this period as both a coping mechanism and a means of survival. A dialogue centred around care emerged when acknowledging that museum work had blurred exponentially with personal lives and caring commitments at home. Particularly in the US context, this was coupled with feelings of grave responsibility regarding civil rights and equity issues:

> My biggest worry is for my staff. I care about them not just as workers, but as people. And I know they've been going through major life challenges during this lockdown. Many of them have young children at home or elderly parents, and the caregiving burden is just tremendous. Some are dealing with illness or death in their families. Some have partners or spouses who've lost their jobs. The social and political climate is really adding extra layers of worry. And the fact that we still must march to make the point that Black Lives Matter means that the country has a long way to go before we reach equality for all people. And that's…weighing on my staff and on me.
>
> (Snyder, Sara. Interview with Sophie Frost, October 30, 2020)

Scholars of reproductive labour have argued that prior to the pandemic "the 'care deficit' had been less visible and rarely recognised as a crisis in popular discourse and the media" (Htun, 2021, p. 635). Studies within this field have observed a "greater alignment in women's perspectives" (2021, ibid) with the "growing tendency to work from home and other changes in work styles" likely to "induce shifts in gender roles" (2021, p. 640). Mala Htun has suggested that, in the US context at least, "the pandemic *revealed* but did not *induce*

the caregiving crisis: for most people it was already a major ordeal to provide reproductive labour" (2021, p. 635). Encouragingly, theories of care within museums have proliferated (see Woodham et. al., 2020; Morse, 2022) but their application in the study of digital museum work remains insubstantial. Considering emotional labour within the context of digital museum work provides a fresh entry point to reflect on care and museum work more broadly.

Another shift in "feeling rules" within the museum has resulted in greater acknowledgement that emotional labour is crucially an intersectional phenomenon. Racialised emotional labour – the uncompensated emotional labour that results in "racial battle fatigue" (Williams et al., 2019) – can be seen as common and continuous within cultural and creative work, as well as within digital work where virtual forums tend to be, by default, White, racialised spaces (ibid). For museums during this time, there was increased concern that virtual museum spaces were mirroring the intimidation and unfriendliness of physical museum buildings. This was acutely felt by some digital leaders, as Effie Kapsalis, Senior Digital Program Officer at the Smithsonian Institution (USA), commented:

> If we are to be an embedded resource in schools and people's homes, *we need to become* much more sophisticated about how we reach people. And there's *a fair amount of convincing* that we have to do with leadership about the urgent need to staff that. I think we're used to a traditional menu of output in the cultural sector, which involves publications and involves exhibits and programmes in our buildings. So, *we are going to have to make some hard choices* about what we fund and resource in the future. And that's going to be complicated [emphasis added].
>
> (Kapsalis, Effie. Interview with Sophie Frost, December 1, 2020)

Studying the emotional labour of digital work can expose a more complex set of connections between gender, museums, and technology – a set of connections that demand dedicated research if we are to evolve an equitable future for the sector. At this juncture, what can be said with clarity is that, amongst digital museum leaders at least, there was a sincere desire to support the inevitable and complex emotional labour in both work and home lives during this time, and this surfaced a vocabulary of emotion within working practices.

A Lexicon of Emotional Labour

As we have just seen, emphatic phrases such as "we need to become'', "fair amount of convincing", and the call "to make some hard choices" began to expose a new, more emotional discourse at the core of the digital agenda in museums. As institutional demand for virtual content grew (and subsequently fluctuated) throughout the pandemic, anxiety amongst digital museum leaders about the ability of museums to cope increased. Kapsalis stated: "The greatest professional struggle for me after the need to support my staff is the stark mismatch that I'm seeing between expectations of what's possible and the capabilities that the museum has to actually execute on our ambitions" (interview with Sophie Frost, December 1, 2020).

Jack Yates, Communications Officer at the Royal Armouries (UK), described the emotional toll of these expectations and capabilities:

> …a lot of my role at the moment *is really trying to keep that momentum going* and keep the people that were very active when they were locked down at home, now they're back in the museum, is *keeping them involved, keeping them excited* about it… People that have now bought into it, are bought in. I think *it's just about winning everyone else over* [emphasis added].
>
> *I'm trying really hard* to get curators and get people to engage when there are questions on our social media channels or people are questioning our objects, that sort of thing, instead of replying institutionally [emphasis added].
>
> (Interview with Sophie Frost, December 16, 2020)

What we see here, in practice, is Rogers' conceptualisation of the innovation champion – someone deploying analytical and intuitive skills by "trying to keep momentum going", seeking to understand various individual aspirations, "winning everyone else over", and "trying really hard" through well-honed interpersonal and negotiating skills to broker digital change across the museum (2003, p. 3). There was growing anxiety about how digital teams were going "to continue the sense of urgency around digital capacity" once the pandemic was over, coupled with the fear that "we are not doing enough" (Kapsalis, Effie. Interview with Sophie Frost, December 1, 2020). Kapsalis continued:

> …it's going to take resources and people that we don't already have, simply those who know how to understand audiences, to

> analyse data, build strategy out of data. Those are things that are going to be extremely important to our future relevance.

There was not only concern about how to maintain momentum around digital, but an increased awareness that digital activity was closely linked to an institution's ability to be attuned to certain communities. Strategies of emotional labour were seen as vital for promoting digital activity, and therefore necessary for future-proofing the museum, as Kapsalis stated: "We need to be much more *thoughtful and comprehensive and focused* in our approach. I think that's going to take education with staff who are involved in traditional roles" [emphasis added] (interview with Sophie Frost, December 1, 2020).

Words such as "thoughtful", "comprehensive", and "focused" constituted a new vocabulary of emotional labour for digital work. For many years, a significant area of struggle for digital teams has been their relatively low and siloed positioning within established hierarchies of museum expertise. If working in a museum digital team, it has long been necessary to coerce, explain, and support others in the institutional hierarchy of the importance of digital technology for audience engagement. As Snyder stated: "if you want to know how a museum functions, digital folks have to work with all the teams" (interview with Sophie Frost, October 30, 2020). What we saw during the pandemic was a fresh coordination of mind and feeling fostered through new digital activity; a coordination that could fundamentally challenge former structures of power. Jude Holland, Learning Manager at Barnsley Museums (UK) explained:

> It feels like, I suppose, the activist museum, which was emerging as a concept, is becoming much more possible through digital…there's something really encouraging about potentially old hierarchies being broken down within museums and that that's something that people, at whatever their level, can get involved with.
>
> (Interview with Sophie Frost, December 1, 2020)

As Hochschild might put it, what we see here in action is the substantial exchange value of emotional labour for museums and heritage organisations, cultivated through digital work. For Snyder, the key issue remained that digital museum work – and indeed all museum work – continued to be misaligned with outdated, more analogue working practices:

> And so what the problem [is] I think, actually, is that we've structured a workday 36 hours a week or 40 hours a week based on a machine. It's like people working with machines, the old kind of machines. The digital workforce is like bits and drabs, like video editing. It takes a long time to get it right and then an even longer time to watch the machine render it. And so if we create the new systems, we're going to have to change how we think about work and all the ways, including the emotional stuff that comes outside.
>
> (Interview with Sophie Frost, October 30, 2020)

Digital leaders were using changes in cultural production and consumption to advocate for the increased value of "emotional stuff" in work, in tandem with calling for more iterative, agile, and fluid approaches to the management of time and tasks:

> We still see people who try to do everything by Zoom meeting when in fact just having more meetings doesn't actually take the place of a truly distributed, remote, asynchronous approach to managing projects and getting work done.
>
> (Snyder, Sara. Interview with Sophie Frost, October 30, 2020)

The emotional labour undertaken and absorbed by digital teams during this period not only provided fresh resolve to better integrate digital within broader museum infrastructure but provided a new rationale to encourage museum workforces to experiment and play.

Emotion Work, Solidarity, and Digital Experimentation

As the pandemic exacerbated imbalances in caring responsibilities, acknowledgement of vulnerability enabled new forms of solidarity through virtual collaboration to emerge. For many, digital activity expanded possibilities for more person-centred, activist practices, propelling discussions around emotional labour to take place in virtual spaces. Holland remarked: "so I think on Twitter, there's been quite a lot of chat about emotional labour in terms of community engagement. And so it's been quite helpful to look at that and engage with that". She shared the following:

> …one of my team has taken it upon herself, working with another colleague, to send out a weekly wellbeing prompt to the whole of

> the museum team with kind of suggested mindfulness activities. The other week it was just kind of some suggestion of some good stuff that was on Netflix. And I think that has been really nice and really helpful. I suppose digital technology does enable us to come together more as teams and across teams.
>
> (Holland, Jude. Interview with Sophie Frost, December 1, 2020)

While digital was expanding and pushing at boundary lines in museum expertise, it was also challenging the role of the museum within society more broadly. As Holland, in discussion on her work with digital at Barnsley Museums, described:

> I think digital is enabling us to really shift from a kind of... museums are didactic institutions that kind of transmit facts down to people, which we've been moving away from for a long time. But I think we were still quite a long way off, as a sector, from being truly... we were doing a lot of work with community groups, but there wasn't much that was by community groups within the work that we were doing. So I think it will enable the shift to much more truly participatory institutions. And I think there's going to be much more opportunities for mass participation.

She continued:

> [Digital] means that, you know, hopefully we are able to kind of break down barriers. What I hope will come out of this is that we will become much more participatory and will react much more quickly to the kind of the current climate and current social, political and economic trends.
>
> (Holland, Jude. Interview with Sophie Frost, December 1, 2020)

Consequently, the desire for digital experimentation and internal upskilling during the pandemic increased. Staff working within digital teams described how greater institutional appetite had enabled new possibilities for experimentation with digital. Andrea Ledesma, Digital Product Specialist for the Web and Digital Engagement Team at the Field Museum in Chicago (USA), explained:

> …I perpetually feel that there is always so much to learn, so much to do to better your practice. Is what we're doing right? Am I doing

> this correctly? Is this going to work? I think that goes back to like, you know, are we going to take this risk? Are you brave enough to take that risk? Like, I sort of play that in my head all the time. And cautious optimism comes into play here, and it's just like you never know, there's one way to find out, keep on making it and see what sticks.
>
> (Ledesma, Andrea. Interview with Sophie Frost, December 1, 2020)

Comments that focused on feelings, on learning, bravery, risk-taking, and "cautious optimism", were again indicative of a new vocabulary of emotional labour, positioning it as a blueprint glossary for the museum to come.

Conclusion: The Future is Emotional

In museums, digital work is emotion work: it gives rise to new, virtual, and hybrid opportunities for emotionally connected and supportive dialogue, it pushes at existing institutional boundary lines, it propels play and experimentation, and – most significantly – it invites more people to the conversation. As Steven Franklin, Digital Engagement Officer at Egham Museum, described:

> …I think, despite the challenges, [the pandemic] did provide a real opportunity. We were able to really accelerate the mechanisms through which we can now talk to the public online. Before COVID, we didn't have those mechanisms in place.
>
> (Interview with Sophie Frost, November 13, 2020)

Digital workers in museums are "innovation champions", brokering and arranging new ways of thinking, and helping new innovations fit into organisational contexts (Rogers, 2003). During the pandemic, it was through the intentional, purposeful, and effort-based actions of digital teams – through their emotional labour – that adroitly, and at speed, museums and heritage organisations were repurposed for survival.

While emotional labour can enter museum technology discourse in productive ways, it is important to remember that digital technology does not discriminate when it comes to the potential toll of emotional labour. In digital museum work, emotional labour continues to be the

source of exhausting and exploitative practices as much as the starting point for new forms of world building. Let us not forget that emotional labour is a blunt concept, neither good or bad; rather, it is a concept that helps us see more clearly *who* is required to undertake emotion management in their work and to grasp *why* this is necessary.

The emotional labour of digital work imbues it with a unique power; a power intrinsically linked to the practice of "caring with", whereby "caring", according to Joan C. Tronto, can be viewed as:

> …a species activity that includes everything that we do to maintain, continue, and repair our "world" so that we can live in it as well as possible. That world includes our bodies, ourselves, and our environment, all of which we seek to interweave in a complex, life-sustaining web.
>
> (Fisher & Tronto, 1990, p. 40 cited in Tronto, 1998, p. 16)

In other words, digital work is, and should continue to be, a practice of radical care. What must we do about the inevitability of emotional labour in digital work in museums and cultural organisations moving forward? We have explored how emotional labour is intrinsically connected to digital transformation work. Now let us value it, integrate it, place it at every level of the museum, and appreciate that a digital-first agenda is a community-first agenda. Let us acknowledge that this may require an overhaul not just of the structure of the museum, as well as its recruitment and wellbeing practices, and how we do diversity and equity work, but an overhaul of work itself too – of *how* we work, in terms of time, remuneration, intellectual space, and how we make space to play.

Culture is technological and technology is cultural. And both culture and technology – if the aim is for them to be created, delivered, and consumed equitably – require emotional labour. Hochschild puts it best: "one can enjoy emotional labour immensely, I think, provided one has an affinity for it and a workplace that supports that affinity" (2013, p. 2).

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Notes

1 By "knowledge work", I refer to jobs that involve the production of new knowledge, which have evolved since the emergence of the "knowledge economy", which by the end of the last century was largely connected with research-intensive and innovation industries.
2 Definitions of cultural, creative, and media industries are wide ranging. I draw upon the original Creative Industries Mapping Document put together by the British government in 1998, which included advertising, antiques, architecture, crafts, design, fashion, film, leisure software, music, performing arts, publishing, software, and TV and radio within its definition.

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Part II
Collection

4 Knowledge and skills for digital curation

Joyce Ray

The Digital Curation Centre (UK) defines digital curation as "the management and preservation of digital data/information over the long-term".[1] While various definitions of digital curation, including several promulgated by the DCC, have appeared since the term came into use two decades ago, this succinct definition is generally applicable for all relevant purposes. The term was introduced in 2001 at a meeting sponsored by the Digital Preservation Coalition and the British National Space Centre, called to bring together library and information management specialists as well as scientific data managers to discuss approaches to the management of research data for future reuse. A report of the meeting states that the new term was carefully chosen to build on its existing use in the library, museum, and biological sciences sectors, and on their common understanding that 'curation' implies "not only the preservation and maintenance of a collection or database but some degree of added value and knowledge" (Beagrie, 2006).

Following the 2001 meeting and a subsequent task force report on digital data curation issued in 2003, the UK government established the Digital Curation Centre (now branded as the DCC) at the University of Edinburgh in 2004. In addition to preservation, the task force identified critical digital curation activities as encompassing "discovery and access, planning, appraisal, creating added value, active management, maintenance of provenance information, and research on curation" (Macdonald & Lord, 2003).

While the UK's approach focused on curation activities and the skills required to perform them, the National Science Foundation (NSF), which

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took the lead in advancing digital curation in the USA, emphasized the need to build a 'cyberinfrastructure'. This was envisioned as a "large-scale distributed network of computational centers and disciplinary repositories, with investment in research to develop automated solutions for repository and data management". The NSF Blue Ribbon Advisory Panel, led by Daniel Atkins, published its report, *Revolutionizing Science and Engineering Through Cyberinfrastructure*, in 2003 (Atkins et al., 2003).

Evolution of digital curation

Some twenty years after the first initial steps were taken towards creating a community of practice in digital curation, several factors can be identified that have contributed to the development of the robust infrastructure that now supports the wealth of digital content from libraries, archives, museums (LAMs), and other data collections around the world. Amongst the success factors are:

- initial funding at the national level directed towards research and development of critical infrastructure
- expertise to establish standards and best practices for the creation, management, preservation, documentation, and interoperability of data
- investment in content creation through digitization and acquisition or creation of born-digital assets by collections-holding institutions
- user demand, which has demonstrated the need for these investments by the ever-increasing public appetite for online information of all kinds

One might ask where the expertise required for the curation of all this data would come from, when no standards or best practice models existed. Expertise has emerged over time, beginning with the development of models like the OAIS (Open Archives Information System) reference model, issued in 2003 as an international standard (ISO 14721:2003). The OAIS model is a graphical depiction of a digital archive as "an organization of people and systems that has accepted the responsibility to preserve information and make it available to a Designated Community" (OAIS).[2]

Two significant features of the OAIS model are: (1) recognition of the critical role that people in the organization – not technology

alone – play; and (2) assignment of responsibility for the preservation, planning, and oversight of digital repositories to the organization's administration, rather than to the IT department or another subordinate unit. Another important model is the DCC Curation Life Cycle Model that was published in 2008.[3] It illustrates how curated data objects are managed over time, from conceptualization to selection, description, preservation, and management in a repository for use and reuse. Of course, these models are high-level representations that must be fleshed out with policies, procedures, and practices in order to be actionable, and these are continuously being refined and augmented by new tools and technologies.

However, while advances were being made in digital library and repository research and development, little funding was available for the education of workforces in libraries, archives, and museums that is needed to create, manage, and ensure preservation of digital heritage content. In fact, no body of academic literature existed to support formal education. The first training programmes were provided as short-term workshops, and many professionals developed expertise on the job as they began to identify the principles of good digital stewardship. A 2008 survey of digital curation and education programmes in North America found that the number of digital curation certificate programmes or curriculum tracks in schools of library and information science was small, and none of these programmes existed within the field of museum studies (Tibbo & Duff, 2008). With a growing volume of published literature about this topic, including the introduction of the *International Journal of Digital Curation* by the DCC in 2006, a body of academic literature began to emerge to support formal education.

In the USA, digital curation education was advanced by a fortuitous coincidence. Soon after the establishment of the DCC in the UK, the Institute of Museum and Library Services (IMLS) in the US received funding from Congress to support new initiatives in library and information science education. With these funds, designated by Congress as the Laura Bush 21st Century Librarians Program, IMLS called for grant proposals in 2006 to create digital curation education programmes in schools of library and information science. The initial grants supported innovative digital curation programmes at the University of Arizona, the University of Illinois at Urbana-Champaign, and the University of North Carolina at Chapel Hill, and in the following years, at numerous other information schools

(Manjarrez et al., 2010). Today, these schools continue to offer certificates and curriculum tracks in digital curation (sometimes under different names) alongside master's degree programmes. This funding enabled digital curation education to get a head start in the USA that foreshadowed the growing interest in Europe and around the world.[4]

IMLS funds under the Laura Bush 21st Century Librarians Program were restricted to schools of library and information science, so museum studies programmes could not apply, and the limited funding for museum professional education made available by IMLS was generally restricted to professional development rather than formal degree programmes. Nevertheless, the Master of Arts in Museum Studies online programme offered by Johns Hopkins University (JHU) – the largest museum studies graduate programme in the USA, located in the University's Krieger School of Arts and Sciences Advanced Academic Programs division – initiated a new graduate certificate in digital curation in 2014. The programme, which is almost fully online, is modelled on the digital curation programmes already established in schools of library and information science but is tailored to meet the needs of museums. A dual credential – MA in Museum Studies and Graduate Certificate in Digital Curation – was approved in 2016, followed by an MA in Cultural Heritage Management combined with the Graduate Certificate in Digital Curation in 2018.

Current state of digital curation education

Today's digital curation curriculum is broadly informed by international models and tools that exemplify both theoretical principles and practical applications of digital curation. It should align with the DigCurV Curriculum Framework, developed with European Commission support, which defines the requirements for digital curation education from the perspective of three lenses (executive, managerial, and practitioner), with interrelated competencies including strategic thinking, higher-level planning, internal and external liaisons, and planning and implementation of tasks relating to digital curation in general and to specific areas of cultural heritage (Molloy et al., 2014). Thus, there is a theoretical basis for shared strategic vision, high-level leadership, and the practical application of digital curation.

Models such as the OAIS Reference Model, the DCC's Curation Life Cycle Model, and the Conceptual Reference Model (the latter of which was developed by the International Committee on Documentation, a

committee of the International Council on Museums, published as international standard ISO 21127:2006), have informed the development of digital infrastructure and professional education programmes in both schools of library and information science and museum studies (Bekiari et al., 2021). These models enable students and practitioners to visualize the principles of digital curation best practices and understand how digital curation workflows reflect theoretical ideals. For a comparative analysis of digital curation education programmes in two US institutions (Johns Hopkins University's museum studies program and Simmons University's school of library and information science), see Ray and Botticelli (2022).

Museums as information centres

One result of the comparison of programmes at JHU and Simmons University is the recognition of a new awareness amongst museums of their importance as information centres that go beyond their traditional role as presenters and interpreters of physical objects. This new role emphasizes the online availability of digital images for museum objects and their associated documentation, the acquisition of born-digital content such as digital art and scientific research data, and the sharing of digital information through aggregator sites such as the Digital Public Library of America, Europeana, Artstor, iDigBio, and Google Arts and Culture, as well as the publication of metadata and other structured information as Linked Open Data.[5] The use of Linked Open Data – which enables the linking and publication on the open web of data within documents and across disparate resources to reveal relationships amongst people, places, events and ideas – is aligned with the CIDOC Conceptual Reference Model.

The importance of online access to research information, including that which is published by museums, is shown by new federal requirements for public access to the research data underlying published findings that result from federal research grants. The NSF began requiring data management plans for all grant applications in 2011. Other federal agencies, including IMLS and the National Endowment for the Humanities, soon followed suit. In 2015, the Smithsonian Institution issued a Plan for Increased Public Access to Federally Funded Research, which requires Smithsonian entities to make this research data publicly available "whenever feasible" (Smithsonian, 2015).

Furthermore, it is important to acknowledge that museum collection documentation is itself research data. The recognition of collection documentation as first-class digital objects – that is, objects worthy of long-term preservation in their own right rather than use as mere pointers to the permanent collections – has profound implications for museums. Michael Jones has drawn attention to the central importance of documentation in museums, and shows how this information has been marginalized by museum practices over the past decades, leading in many cases to the separation of important information *about* collections and objects from the objects themselves, even within a single museum. He argues that this contextual information should be reunited with museum objects and collections in order to support research, so that researchers no longer have to search for this data themselves, again and again (Jones, 2021).

These interrelated intellectual concepts of information integration and aggregation, actualized through tools and technology, are central to the curriculum of the JHU digital curation programme that is discussed below. This grounding is important for students to be able to move beyond the use of current software and to have confidence in their ability to analyze and adopt new technologies as they emerge, without sacrificing core principles of good digital stewardship. A successful digital curation programme thus requires the implementation of shared standards to ensure interoperability, knowledge of intellectual property laws and related policy and ethics concerns, as well as legal compliance and ethical accountability in the management of digital assets.

Graduate certificate in digital curation

The JHU digital curation certificate programme may serve as an example for other programmes in museum and cultural heritage studies. Details of the programme are discussed below to illustrate how the core principles of digital curation have been incorporated into the digital curation curriculum, along with an emphasis on their applicability to museums and heritage studies. In addition to this, the digital curation programme promotes collaboration across the LAM spectrum, as well as professional networking, and the development of research skills to enable new professionals to succeed as digital curators, lifelong learners, and contributors to the professional literature that is sorely needed (especially in the museum, cultural heritage, and humanities fields of study).

One of the programme goals is to enlighten students as to the size and scope of the digital curation community. Many are surprised to learn that this community is global, spans all disciplines, and ranges from object and collection information to research data. Students must acquire the vocabulary to be able to communicate with others in the field despite differences of language and professional background, so it is important to establish definitions while acknowledging that these may vary in different contexts.

The programme defines digital curation as "the planning and management of digital assets over their full lifetime, from conceptualization through active use and presentation to long-term preservation in a repository for future use" (Zorich, 2015). It could as easily have been called a 'data curation' programme but 'digital' was deliberately chosen to avoid the perception that the course applies only to scientific data.

The aim of the programme is to ensure that digital curation education for museum and heritage professionals is aligned with that for libraries, archives, and the broader scientific and humanities sectors, so that researchers, educators, practitioners, and students speak the same language and share the same basic principles without sacrificing the unique needs of their own disciplines. This alignment promotes interoperability and enables the sharing of new tools and technologies that are broadly applicable across sectors.

Programme overview

The programme-level learning objectives for the digital curation programme – designed for both measurability and long-term applicability – are as follows:

Upon completion of the programme students will be able to:

- analyze digital curation practices in museums and cultural heritage environments from theoretical, legal, ethical, and practical perspectives
- evaluate digital preservation plans and strategies for the long-term management of digital assets
- apply digital curation principles to the management of digital objects and collections
- examine tools and technologies for the creation, use, and management of digital assets in museums and cultural heritage environments
- apply knowledge and skills through applied research in the field

As can be inferred from these broad objectives, the programme aims to prepare students that are well-versed in the literature and evolution of the field and who have a working vocabulary; the course is intended to enable them to communicate effectively with other digital curators and stakeholders, to provide them with the ability to evaluate and apply new tools and technologies, and to give them knowledge of applied research methods.

The JHU digital curation certificate programme accepts students with a bachelor's degree and at least three years' experience in a museum or applicable field, or who enter as degree-seeking students that combine the certificate with an MA in Museum Studies or an MA in Cultural Heritage Management. Most students are enrolled on the dual museum studies and digital curation programme, and many who apply only to the certificate programme already have a master's degree in a relevant field.

Students in a combined credential programme take a total of 14 courses. This includes all five digital curation core courses, plus an elective, in addition to the MA requirements. While the MA requires 10 courses, two of the digital curation courses also count toward the MA. Students generally complete this dual course of study in two to three years. Because the programmes are mostly online, social media is used extensively in order to connect students, faculty members, and alumni with one another, and this in turn helps to build professional relationships and lifelong career networks.

The digital curation programme, like the museum studies and cultural heritage management programmes, is mostly delivered online, with the exception of the required internship (discussed below). All programmes are designed to be undertaken on a part-time basis in order to accommodate the majority of students who are already working full- or part-time. All programmes have a strong technology focus. Electives allow digital curation students in a dual programme to acquire specialized knowledge relating to relevant topics such as cataloguing, collection management systems, and curation of online exhibitions and experiences (for Museum Studies), and risk management and security and/or intangible cultural heritage (for Cultural Heritage Management).

All three programmes in museum and heritage studies (Museum Studies, Cultural Heritage Management, and Digital Curation) are designed to respond to changing needs and practices within the field. Elective courses in Museum Studies are intended to reflect

the latest industry trends, and are cycled out if interest amongst students wanes. The courses in the digital curation programme, given their relatively up-to-date nature and focus upon the fundamentals of theory and practice, are anticipated to be stable over time, although the content of each course will continue to be updated as needed.

The curriculum

The six courses required for the digital curation certificate include five digital curation core courses and one elective from the Museum Studies or the Cultural Heritage curricula, depending on the student's programme of study. All courses are three credit hours, the standard for graduate-level courses in the USA.

The five digital curation courses, and the course-level learning objectives for each, include:

Foundations of digital curation

Upon completion of the course students will be able to:

- explain basic terms and concepts associated with digital curation
- analyze the principles of digital curation in the management of digital objects and collections in different disciplines
- demonstrate knowledge of key historical materials on digital curation, theoretical perspectives, institutional practices, and legal and ethical concerns
- examine tools and technologies for the creation, use and management of digital assets in museums and cultural heritage environments

The course lays a foundation for managing digital information throughout its lifetime by applying the lens of digital curation models to examine the practical issues and tools involved in managing digital collections and repositories over time. Effective data management will result in data that can be shared beyond the institution, integrated with other data, or aggregated with other collections. Topics include standards and protocols for interoperability (e.g., metadata and controlled vocabularies for different disciplines and applications), and legal and policy issues such as copyright and ethics.

Digital preservation

Course-level learning objectives: upon completion of the course students will be able to:

- explain basic terms and concepts associated with digital object preservation
- describe the processes involved in short- and long-term management of digital objects
- identify and explain the economic and cultural constraints affecting digital preservation in cultural institutions
- describe the components and functions of a trustworthy digital repository
- design a digital preservation strategy

The course introduces students to the current state of digital preservation, preservation challenges, and to basic concepts for designing effective digital preservation plans and programmes. An understanding of core principles such as essential documentation and data redundancy will enable students to evaluate different preservation solutions as they evolve. The course emphasizes the communication skills needed to involve internal stakeholders (e.g., museum staff) in the planning process, identify and communicate essential roles and responsibilities, and ensure the buy-in of all staff who will be needed to help implement preservation plans.

Managing digital information in museums and archives

Course-level learning objectives: upon completion of the course students will be able to:

- analyze the information needs of an institution's 'designated community', including both internal staff and external information providers and consumers
- evaluate workflows for the creation and management of digital collections in museum and cultural heritage environments, including the integration of digital curation activities within a broader institutional digital strategy
- create practical plans for digital curation programmes, including designation of responsibilities and roles, identification of required competencies, and evaluation methods

- analyze tools, including software technologies and metadata schemas used for the preservation and management of various types of digital objects
- apply archival principles of appraisal and management of digital objects in trustworthy repositories

The course addresses technical and practical issues involved in the long-term management and preservation of digital assets in museums and other cultural heritage institutions. Topics include: the application of functional models of digital curation and preservation to the planning and design of digital curation strategy and associated workflows; technologies commonly involved at the institutional level (e.g., software applications); and best practices for format identification, migration, and potential emulation of digital assets.

Internship

Course-level learning objectives: upon completion of the course students will be able to:

- identify the skills and knowledge needed for expertise in digital curation
- develop practical skills in the field of digital curation through real-world projects and experiences
- evaluate workflows for digital curation activities within an operational environment
- analyze best practices and standards for the digital curation of cultural heritage materials

The digital curation internship, requiring at least 120 hours of field experience, affords students the opportunity to gain hands-on experience working with experts who are leading digital curation activities in museums and related cultural heritage organizations. Since the university eliminated all on-site activities during the height of the COVID-19 pandemic (and most museums were closed), opportunities for online internships were solicited, especially with the help of alumni now working in the field. This proved highly successful and has been continued, giving students the option to choose either in-person or remote internships. Interns produce evidence of their accomplishments through work products, project reports, or other

assignments in an online course component; they also participate in online discussion forums with other digital curation students enrolled in internships during the same semester.

Internships have become rather controversial in the past several years, especially if they are unpaid. However, as most JHU students are already working, the bigger challenge is often taking time off from work for the 120 hours minimum requirement. This difficulty is mitigated by online internships.

Research paper/capstone

Course-level learning objectives: upon completion of the course students will be able to:

- demonstrate critical thinking and communication skills, including the formulation of problem statements, research questions, research design, data analysis, and effective written presentation of findings
- conduct a supervised digital curation research project
- analyze trends, best practices and needs for the digital curation of cultural heritage materials

The supervised research course empowers students to investigate a significant issue in digital curation of their choice. The research paper/capstone often builds on the student's internship experience. It is expected to result in a publishable or presentable paper that contributes to literature in the field. As there is currently a real need for research in digital curation and relatively little published literature – especially relating to museums – student research can make a significant contribution. The research paper/capstone is a culminating course and is normally completed as the final requirement in the programme. It involves original research, literature search, an analysis of the current state of the field in the chosen topic, and findings that could lead to improved practices. This enables students to develop a measure of expertise in their area of investigation, as well as a grounding in research methods. The research often includes interviews with expert practitioners, surveys, or website analysis.[6]

Programme success

To gauge student satisfaction and success resulting from the digital curation programme, JHU conducted an alumni survey in 2019. With

a response rate of 53%, graduates reported high levels of satisfaction with the programme and their subsequent employment. The most beneficial aspects of the programme identified were: knowledge gained (88%); research paper (88%); professors (82%); internships (82%); the online/tech focus (53%); and networking (47%). For graduates whose subsequent employment was identified, 19 were employed in digital curation-related or management positions, with only two being in the same positions they already held as students. Two found temporary employment as contractors, and the rest were employed in museums (10), historical societies (1), library special collections (3), archives (1), a university press (1), and an online museum collaborative (1). A few were employed at the place where they had interned, thus demonstrating the networking value of the internship experience.

Conclusion

The value of formal education programmes for digital curation has been demonstrated by their persistence and growth, and by the success of graduates in finding professional employment. The continued development of large-scale aggregations of digital content from multiple collections-holding institutions, such as Europeana and the Digital Public Library of America, and the increasing publication of collection documentation and related resources as Linked Open Data, suggests that the need for practitioners with digital knowledge and skills will continue to increase for the foreseeable future. The range of job opportunities across libraries, archives, and museums shows that the digital curation certificate is a sound career choice for students who aspire to professional employment within the cultural heritage sector. This state of the field also bodes well for more professional collaboration across the disciplinary spectrum and greater interoperability of online collections. The emphasis on collaboration, networking, and communication amongst scholars and practitioners from different disciplines, across the globe or across the street, is essential to this success. In the end, online audiences and information seekers will be the greatest beneficiaries.

Notes

1 Digital Curation Centre, ‘What is digital curation?’. Online. Available at: www.dcc.ac.uk/about/digital-curation

2 See the OAIS Reference Model homepage. Online. Available at: www.oais.info/

3 Digital Curation Centre, 'Curation life cycle model'. Online. Available at: www.dcc.ac.uk/guidance/curation-lifecycle-model

4 An explanation of federal funding programs in the USA is useful here for those based in other parts of the world (indeed, it is often confusing for Americans as well). The USA has no Ministry of Culture or other overarching government agency for funding or oversight of federal programmes that relate to museums, libraries, the arts, or culture, so federal grant-making agencies such as IMLS, the National Endowment for the Arts, the National Endowment for the Humanities, the Library of Congress, and the Smithsonian Institution operate as independent agencies (although there is an umbrella organization, the National Foundation on the Arts and Humanities that exists on paper for administrative purposes, which consists of the National Endowment for the Arts, the National Endowment for the Humanities, IMLS, and the Federal Council on the Arts and Humanities, an advisory policy body). See: www.federalregister.gov/agencies/national-foundation-on-the-arts-and-the-humanities.

   The practical impact of this structure is that grant-making agencies find it difficult to collaborate on funding initiatives because they risk running afoul of the Appropriations Clause of the US Constitution, which directs the President and federal agencies to spend funds only as appropriated by Congress. Federal grant funds must be justified and tracked in accordance with the agency's mission and through the appropriation of Congress. Agencies could potentially lose funding if they divert funds to other agencies with different or overlapping missions. See: https://constitutioncenter.org/interactive-constitution/interpretation/article-i/clauses/756

5 The publication of metadata and other structured information is exemplified by the American Art Collaborative, a demonstration project supported by the Andrew W. Mellon Foundation. See the American Art Collaborative home page: http://browse.americanartcollaborative.org/.

6 Selected student papers are published in the JHU permanent Institutional Repository, JScholarship. These papers are available at: https://jscholarship.library.jhu.edu/handle/1774.2/40426

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5 The Paths to Digital Transformation

Anra Kennedy, Harry Verwayen, and Beth Daley

Making Sense of Digital Transformation

Meaningful and effective digital transformation takes time, effort, and money. It requires digital confidence, literacy, skills, leadership, capacity, and agency, and there is no single recipe for success. Museums need to understand what digital transformation means within their specific context, why it matters, and how to make change happen. Culture24 and the Europeana Foundation have been working to support this process in the cultural heritage sector for many years, through a range of data aggregation, technical infrastructure, public engagement, action research, policy, and knowledge-exchange programmes, all with collections at their core.

> Confusion about the meanings of digital transformation, and doubt about the usefulness of the term, undermines the sector's ability to work deeply on positive change.
>
> (Edson & Visser, 2020, p. 43)

An essential first step has been framing the challenge by defining key terminology that the people leading, working, and volunteering in the cultural heritage sector can relate to.

In 2020, sparked by the impact of the COVID-19 crisis, Europeana commissioned a Sensemaking Digital Transformation project, the first step in a network-wide digital capacity-building programme.[1] As a result of this research carried out across the Europeana Network

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Association and beyond, Europeana published a definition of digital transformation (McNeilly & ter Burg, 2021) in cultural heritage:

> Digital transformation is both the process and the result of using digital technology to transform how an organisation operates and delivers value. It helps an organisation to thrive, fulfil its mission and meet the needs of its stakeholders. It enables cultural heritage institutions to contribute to the transformation of a sector powered by digital and a Europe powered by culture.[2]

Central to this definition is the idea of digital transformation enabling an individual museum to deliver its mission, which in turn feeds into both sector-wide and societal transformation and empowerment. This reflects the framing set out by the One by One research project (Barnes et al. 2018, Parry et al. 2018, Malde et al. 2019; and discussed in detail in Chapter 1), in which digital literacies (reflective), capabilities (intentional), and competencies (actions) operate and interact in the context of individuals, organisations, networks, the sector, and ultimately, wider society.

A shared understanding of the term 'digital maturity' is another crucial part of this foundational framing – if digital transformation is the overall goal, digital maturity is the means by which we achieve it. Building on One by One's findings, our working definition of digital maturity is the individual's or organisation's ability to use, manage, create, and understand digital, in a way that is contextual (fit for their unique setting and needs), holistic (involving vision, leadership, process, culture, and people), and purposeful (always aligned to the institution's social mission).

This definition underpins the approaches of Culture24 and Europeana to supporting digital transformation: building the skills and confidence of individuals; working with organisations to spark and embed change; and nurturing connected, collaborative cultural heritage networks and ecosystems.

Digital Transformation in Action

The following case studies present a variety of perspectives, a diversity of backgrounds, and a range of foci – from the ultra-technical to the inner city social, and from the local to the international. The case studies are not necessarily examples of programmes explicitly designed

to build digital capacity; they have their own operational and bespoke goals, but in reaching for those goals, they foster activities or processes that contribute to building digital capacity and professional skills/knowledge in strategic ways for individuals, organisations, or networks.

The Somme Museum – 100 Stories in 100 Days

The COVID-19 pandemic was the catalyst for Carol Walker, Director of the Somme Association and Museum,[3] County Down, Northern Ireland, to look at digital tools, processes, and channels in an entirely new way, driven by the need to connect with audiences whilst the venue was closed. The museum has a team of two and a half paid employees and four regular volunteers. The museum had a long-established social media presence with high engagement for live-streams of memorial services, so digital storytelling was not new to them. However, the new digital skills they taught themselves and the level of engagement they developed for their new collections-focused stories had a profound impact on the museum's practice.

> Covid accelerated our thinking and how we needed to adapt to the digital world that's out there, Covid gave us that opportunity to set the reset button and redevelop.
>
> (C. Walker, personal communication, 29 March 2022)

Carol was the driving force behind this process of change, initially teaching herself to film and edit videos on her phone for a series of 'My Favourite Item' films in which the staff and volunteers share stories about collection artefacts.[4] The films have attracted a modest amount of engagement on YouTube (Somme Museum, 2024a), but it is on Facebook where the museum really found its community (Somme Museum, 2024b), with several hundred views per video – significant figures for a small museum with no marketing budget. This success brought momentum to the approach, and their use of storytelling grew in scale and ambition, with Carol learning how to direct, write scripts, use a teleprompter, film with a drone, and use animation software.

Building on this, in 2021 the Somme Museum joined seven other small museums in a five-month AHRC-funded project called Making it FAIR.[5] Following Culture24's collaborative action research

methodology,[6] the museums were supported by cultural heritage sector experts as part of an experiment with digital storytelling, and an exploration of ways to make their collections data 'FAIR' – findable, accessible, interoperable, and reusable.[7]

Carol and a volunteer colleague undertook an ambitious project – telling 100 stories online in 100 days, one per day, in the run-up to the 100th Anniversary of the dedication of the Ulster Tower on 19 November 1921. These stories were shared on social media and gathered into a simple website, Ulster Tower 100,[8] which represented a first step towards the museum creating a lasting home for their digital storytelling content and their efforts to make collections data more FAIR. As part of this work, Carol and colleagues learned to plan, create, and edit their own website, and to digitise their collection objects in-house, which included turning them into three-dimensional artefacts.

> Instead of an item being brought out and put into a cabinet and you dress it and walk away from it, we're now thinking about how you tell that story in different formats as well.
>
> (C. Walker, personal communication, 29 March 2022)

These new digital skills, as well as an increased capacity to undertake digital tasks in-house, led the team to re-think processes for accession, documentation, conservation (for example, collection item condition reports now include images, supporting conservation processes), interpretation, and exhibition planning. This is digital transformation in action.

Museum of London – Curating Meaning through Social Media

The much larger team at the Museum of London has been actively building their digital capacity and maturity for many years. Their work is often at the forefront of the UK museum sector's digital transformation. The museum was an early pioneer in the provision of digital collections content curated for classroom use – with their first schools-focused collection image resource, Picture Bank, launched in the mid-2000s – and in 2019 was one of six action research partners in the first phase of One by One.

> When I started working at the Museum of London, MOMA had started collecting video games, and I was like, what, Pacman? In the MOMA collection? Next to the Pollocks?
>
> (F. Aravani, personal communication, 5 April 2022)

Foteini Aravani, Digital Curator at the Museum of London, has been operating at the cutting-edge of contemporary collecting by working with born-digital objects. Her personal understanding of digital, as well as the way her role is evolving and the impact work like this is having on the way the museum approaches collecting – practically and strategically – is a fascinating example of profound and lasting digital transformation.

Foteini's interest in collecting digital objects was sparked by pioneers in the field such as MoMA, who collected work from early video artists, and the Smithsonian's famous *Art of Video Games* exhibition in 2012.[9] When she joined the Museum of London in 2015, they had already begun a four-year digital capacity building project (hence her 'digital curator' role), but what that role might mean in practice was unclear:

> I feel there were little seeds in the air, that we had to grab and start understanding how we could apply them to the Museum of London needs, and mission, and collection and purpose of the collection.
>
> (F. Aravani, personal communication, 5 April 2022)

Foteini's colleagues had taken an experimental approach to collecting their first born-digital items in 2012 – a set of tweets about the Olympics with the #CitizenCurator hashtag:

> The way we started our digital collection was by experimenting with different types of objects and materials. So when we started collecting social media, we knew nothing about it. Noone had done it before…We felt as a museum of social history, telling the history of London through people's experiences, social media is something that we really need to explore.
>
> (F. Aravani, personal communication, 5 April 2022)

Digital collecting is now firmly embedded as part of the Museum's Collections Development Policy (London Museum, 2018), but

Foteini is a keen advocate of retaining that experimental attitude as things quickly evolve within the digital sphere. In the case of those first tweets, only their metadata (code) was collected. At the time of writing, tweets are still collected as screenshots, which is not an ideal way of capturing content from a social media platform but a step in the right direction.

> I feel this is the only way to push and push and challenge a little bit further every time – what the collection means, what collecting means, what the curator's role is. Sometimes you just have to do it, even if you don't do it right.
>
> (F. Aravani, personal communication, 5 April 2022)

More profound than the practicalities of collecting digital objects are the strategic implications that such a process has on the kinds of stories the museum is gathering and sharing. Foteini's role demands that she tackles fundamental questions around digital transformation that not only the Museum of London but the wider museum sector is grappling with. This extract from an article she wrote for The Garage Journal in August 2021 illustrates the reflective digital literacy that this work is engendering:

> Social media objects remind us that our responsibility is to curate meanings and tell stories that come out of the objects themselves. We are also reminded that, despite all our efforts and academic expertise, the stories we curate are better told by the people who lived them. Social media collecting proves that history has been and will always be in a state of flux, and that we, each one of us, are active players in its unfolding. It challenges the rhetoric of historical objectivity and authority that museums have championed, and brings people into the heart of the collections.
>
> (Aravani, 2021)

The stories of Carol and Foteini illustrate the vital role and transformative influence of empowered individuals within a museum's journey towards digital maturity. It is when individuals connect with colleagues and peers, collaborating in networks and communities of practice within and beyond their organisations, that we see sustained and embedded digital change.

The Audience Agency– Let's Get Real

Collaboration has always been an intrinsic part of what goes on in the museum world. In sharing a single piece of cultural heritage, you bring together creators and/or owners, those involved in restoration and preservation, as well as those involved in curation, display, narration, and promotion. And by putting discrete pieces of cultural heritage side-by-side in a display or exhibition, you create context via relationships with other objects and stories. Those pieces of cultural heritage work together to create a more complete story than they would be able to on their own – thanks to the range of professionals involved in their journey.

Since 2011, Culture24, and latterly Audience Agency, have been tapping into this collaborative mindset with a digital capacity-building programme called Let's Get Real (LGR). Each year we gather approximately 30–40 people – two each from 15–20 cultural organisations – to tackle digital challenges as part of a collaboratively-funded project. We run workshops, between which the cohort works on self-directed learning and digital experimentation projects, supported by our team. LGR takes a human-centred approach, tailored to the cohort's needs.

> Working in silos damages progress. We like working together. Having the opportunity to share industry practice and knowledge is invaluable and inspiring.
>
> (Finnis et al., 2020, p. 34)

LGR builds and uses knowledge to effect practical and strategic change for the arts and heritage sector on four levels: on the level of the individual, the organisation, and the broader sector, as well on the level of peer networks. Programmes aim to nurture the personal confidence of participating individuals by building the digital literacies and skills they need in their work environments. At an organisational level they help to build digital capacity and maturity by supporting participants to identify, design, and embed relevant changes. At network level, LGR fosters collaborative working and best practice across peer networks and communities of practice. We have also applied the method within partner projects and commissions, including the aforementioned Making it FAIR project in 2021,[10] and the Digital Literacy for Leadership programme initiated by Museum Galleries Scotland in 2022.[11] At a sector level, the programmes aim to develop shared

understanding, analysing and addressing the strategic and practical impact of key societal changes and ideas that result from the reports, resources, and conferences of each project.

Participants on the Let's Get Real programmes often achieve or learn unexpected things. Sometimes they run out of time or run into blockers – personal, organisational, or both – that mean they do not complete their projects or they struggle to engage with the approach or topic. However, these 'failures' are themselves enlightening, they help to focus attention on problems, which is the first step in fixing them.[12]

The LGR programme has given the team invaluable insights into the needs and contexts of our participants and has convinced us of the value of working together in a community of practice to tackle digital transformation. Our collaborative, networked approach developed gradually, emerging naturally as a way of bringing people together to do things they couldn't do on their own and to share common challenges.

Europeana – Europe at Work

The Europeana Foundation, by contrast, has been a collaborative networked organisation since its inception, formalising its Europeana Network Association (ENA) in 2015. Free to join, this network counts 5,000 members from over 70 countries (as of December 2024), all working in the field of digital cultural heritage.

Collaboration for Europeana happens on many levels and can involve both cultural heritage institutions and public audiences. In 2019 the Europe at Work campaign aimed to engage with European citizens and raise awareness of how we have all contributed to the development of Europe through our work and labour. 24 cultural heritage organisations and venues ran 12 separate collection day events in which members of the public were invited to share stories in-person or online about their careers, which spanned from aid-work to accountancy jobs, from professions of childcare to carpentry. Another part of the project brought together 440,000 digital cultural heritage records from 739 institutions in 36 countries (Murphy, 2020).

To understand what effect this collaboration had on the contributing partners, Europeana undertook an impact assessment. This assessment showed the value of the activities as having encouraged a sense of European connection for hosts and contributors, creating connections to partners across Europe and for some, improving the

standing or reputation of the host organisation. In terms of digital-capacity building, the project was seen to have "supported ongoing processes of digital change by reinforcing the value of being more digital or inspiring further digitisation", especially significant given the observation that "change is more pronounced in cultural heritage organisations with a lower stage of digital maturity" (McNeilly, 2023). So, this kind of collaboration in which a less digital organisation has the opportunity to learn from more digital partners such as Europeana helps them to foster digital change within their organisation.

Larissa Borck was involved in organising museum 'collection days' for Europe at Work on behalf of the Swedish National Heritage Board. She told us that:

> A collection day, however big or small it may be, is always a great opportunity for me to increase my digital skills and confidence – to go all the way from the source (the people, their objects and stories) to creating data and metadata. On the organisation level, it was helpful to be able to reach out to institutions without digital collections. The conversations we had with our partner helped us to better understand what kind of challenges and issues smaller, volunteer-led institutions have when it comes to digitisation. It helped us to reflect on digital literacy in these institutions and the support they need.
>
> (L. Borck, personal communication, 19 December 2019)

Collaborative events – of which a collection day represents just one example – offer organisations (especially those that are less-digitally confident) the opportunity to learn from Europeana and its experienced partners, helping them to share skills, foster digital change within their organisation, and increase the literacy of decision-makers and people whose jobs are affected by technologies.

Europeana – Saint George on a Bike

These digital literacy and capacity-building activities can either be broad or very specialised. One specialist community, EuropeanaTech,[13] brings together over 2,600 experts, developers and researchers to coordinate activities that seek to improve the standing of European digital cultural heritage and facilitate knowledge-sharing across the sector through technology. Importantly, this community reaches

beyond the boundaries of the cultural heritage sector to work with technology companies and research bodies, which provide valuable insights and knowledge that can then be brought over and harnessed within the cultural sector. This model sees a networked specialist community responding to the needs of the cultural sector and feeding it with expertise, tools and services.

The Saint George on a Bike project[14] (September 2019 – February 2023) brought the Europeana Foundation together with Barcelona Supercomputing Center in Spain. It did so with the purpose of using artificial intelligence to analyse the visual content of artworks and to discover more about their context. It aimed to enrich metadata with AI-generated semantic tags and textual descriptions/captions, trained on open collections from over 20 institutions, including the Rijksmuseum, the National Museum in Warsaw, and the Metropolitan Museum of Art. In doing so, it made those cultural heritage items more findable, more accessible (particularly to users with visual impairments), and more reusable – outcomes that chime with many an organisational mission statement.

As Eleftheria Tsoupra, Technical Analyst at the Europeana Foundation, says:

> St George on a Bike responds to a need within every cultural heritage institution engaged in digitising its collections – the need to provide metadata enrichments (semantic tags and short written descriptions) about the content of cultural images. By harnessing artificial intelligence to create these enrichments, the project hopes to contribute to a more standardised – and easier/faster – enrichment process from which all of our partners can benefit. It's a great example of a project that harnesses technical expertise that would be out of reach to many small or less resourced museums and gives them the benefit through the power of a network, without them all becoming AI experts themselves.
>
> (personal communication, 12 October 2022)

A Guide to Digital Transformation in Cultural Heritage

The Europeana Initiative's mission has long been to "empower the cultural heritage sector in its digital transformation", and since September 2022 the organisation has taken up this role at the heart of a new flagship initiative of the European Union – the common

European data space for cultural heritage[15] – which aims to support the digital transformation of the cultural heritage sector. Europeana is undergoing extensive work to develop and formalise the requirements or frameworks needed to build capacity for this digital transformation, and at the core of its identity is the concept of collaboration.

In this chapter we have explored examples of what digital transformation, digital skills-building, and digital capacity-building can look like. Each example is very different, underlining the fact that there can be no one-size-fits-all path to digital transformation. However, whilst each context is different, we believe that museums and the wider cultural heritage sector can and should adopt a united and collaborative approach to digital transformation.

To that end, Europeana commissioned Culture24 to help them set up and support a Digital Transformation Task Force (ter Burg, 2022) which was convened in October 2021. The Task Force brought together representatives from the three pillars of the Europeana Initiative[16] – the Europeana Foundation (EF), Europeana Network Association (ENA), and Europeana Aggregators' Forum (EAF) – alongside two independent representatives (eight people in all). The result of their eight-month process is a 'Guide to Digital Transformation in Cultural Heritage' which was published in May 2022 (Finnis & Kennedy, 2022).

The Guide was developed through a process of community authorship, with task force members acting as representatives for different stakeholder groups. Part of the process also involved 44 workshop participants from 19 countries who, across three open workshops, together mapped 800 considerations around digital activities, skills, and capacity-building.

The Guide sets out three priority areas:

- **Priority one – Language and approach**
  Recommendation: understand and adopt the Guide's suggested approach (which uses the One by One framings) to think about, discuss, and plan digital activity and skills, either personally, within organisations, or as part of networks.
- **Priority two – Mindset and culture**
  Recommendation: create optimum conditions for change through a mindset and culture that is open to learning and collaboration on all levels and in all contexts; recognise the importance of people-centred practice, emotional skills and intelligence, as well as taking a holistic approach to digital transformation.

- **Priority three – Purpose and values**
  Recommendation: ensure that your digital transformation is purposeful and values-driven.

  For each recommendation we have set out:

- why this is so important
- what needs to happen
- how to do it and who actions are for (individuals, organisations or networks)

The Guide provides an important step towards digital transformation in the cultural heritage sector, and is deliberately bold and ambitious. Our next task is to act upon its recommendations and to support the people in our networks to continue along their paths towards digital transformation.

Conclusion

We have seen a range of examples of activities that result in increased digital capacity within the cultural heritage sector. As all cultural heritage institutions are different, there is no one-size-fits-all solution, but there are some common elements present in the activities we have explored that have been successful:

One – a shared understanding of what digital transformation means, with related relevant goals that are purposeful and values-driven. Successful activities include a concerted effort to identify, design, and embed change and understand its impact.

Two – understanding the value of individual agents of change. We have seen that people-centred, in-house skills development is invaluable. For example, the learning curve and development (or changed thinking) experienced by Carol in one area had knock-on effects for other processes. Pertinent also is Larissa's experience, and her reflections on both her own digital literacy and that of others. When staff have a creative or growth mindset and are able to experiment – as in Foteini's case – it reinvigorates the workforce.

Carol and Foteini's stories illustrate the vital role and transformative influence of empowered individuals as part of a museum's journey towards digital maturity: when individuals connect with colleagues and peers, collaborating in networks and communities of practice

within and beyond their organisations, we see sustained, embedded digital change.

Three – working with audiences. We have seen in many of our examples how important it is to involve or even be led by audiences. Some communities are further advanced digitally than others, and for each activity we need to understand where an audience lies on this continuum, because the digital transformation of the cultural heritage sector cannot happen in isolation – we all need to work together.

Four – collaboration and collaborative mindsets. We have seen how important it is to bring different types of organisations together (e.g., change agencies and technical experts), or indeed people or groups with different levels of digital experience. These different perspectives complement each other and encourage mutual growth.

We will end by giving Carol Walker, Director of the Somme Association, the final word. Here she describes her digital transformation journey via digital storytelling, which starts with a personal impact and ends up supporting her museum's mission:

> I really enjoyed the process, it gave me a new lease of life when it came to the museum, and it gave me a love of the collection again. I got to connect with the collection and with the digital skills that I had learnt, I was able to make the collection into something new that we could then give out to the public so they then were able to connect with the collection too.
>
> (C. Walker, personal communication, 29 March 2022)

Notes

1 Europeana, 'Building digital capacity'. Online. Available at: https://pro.europeana.eu/page/building-digital-capacity
2 Europeana, 'Defining digital transformation'. Online. Available at: https://pro.europeana.eu/page/building-digital-capacity#defining-digital-transformation
3 See the Somme Museum homepage. Online. Available at: www.sommeassociation.com/visit/somme-museum.
4 See: https://fb.watch/wA3e-aGcxZ/
5 See the Archaeology Data Service, 'Making it FAIR'. Online. Available at: https://archaeologydataservice.ac.uk/about/projects/making-it-fair/. For the final report. see Cooper et al. (2022).
6 The Audience Agency, 'Let's Get Real previous programmes.' Online. Available at: https://theaudienceagency.org/en/what-we-do/lets-get-real/previous.

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8 See the Ulster Tower home page. Online. Available at: https://ulstertower100.com/
9 Smithsonian American Art Museum, 'The art of video games'. Online. Available at: https://americanart.si.edu/exhibitions/games
10 Archaeology Data Service, 'Making it FAIR'. Online. Available at: https://archaeologydataservice.ac.uk/about/projects/making-it-fair/
11 Museum Galleries Scotland, 'The Digital Literacy for Leadership programme'. Online. Available at: www.museumsgalleriesscotland.org.uk/workforce-development/the-digital-literacy-for-leadership-programme/
12 See LGR reports for case studies detailing experiment processes and insights. Online. Available at: https://theaudienceagency.org/en/what-we-do/lets-get-real/previous
13 Europeana, 'Europeanatech community'. Online. Available at: https://pro.europeana.eu/page/europeanatech
14 See the Saint George on a Bike home page. Online. Available at: https://saintgeorgeonabike.eu/
15 Europeana, 'Common European data space for cultural heritage'. Online. Available at: https://pro.europeana.eu/page/common-european-data-space-for-cultural-heritage
16 Europeana, 'Our mission'. Online. Available at: https://pro.europeana.eu/about-us/mission#who-we-are

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6 Can we be confident about heritage and humanities data?

Dominic Oldman

Introduction

The period through which many of the items found in museums were originally collected, the Enlightenment, was a period which promoted mechanical empiricism. René Descartes' scientific method reduced the universe to the status of a mechanical clock, and Newton's physical mechanics consolidated that worldview. An Enlightenment understanding meant dividing and isolating things into their irreducible parts, and viewing them as distinct subjects of study. This line of thinking continued into the age of Adam Smith and *laissez faire* liberal economics, particularly the division of labour, which aimed at reducing the cost of production despite acknowledging the collateral damage of devaluing people. These same Enlightenment principles were resurrected during the 1970s through neoliberalism, and are now firmly established within our postmodern society.[1] It was a disciple of Adam Smith who designed the first computer (the difference engine), namely Charles Babbage.

A curiosity about objects (both artificial and natural) characterised the earliest museums, which reflected this detached approach; it also suggested that an understanding of the world, just like the market, was open to all. Computers were human (a 'computer' was a job title), and the representation of empirical experience could be explained through the purity of mathematical calculation, a skill that was supposedly universally available because it required no additional context. However, this was a disingenuous form of knowledge democracy (Schaffer, 1994, p. 203). It was this lack of context – which manifested

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itself in a detachment from issues of humanity – practised by many Enlightenment collectors of curiosities, that now presents a legacy which should have no place in current cultural heritage and humanist knowledge processes. And yet it does!

This chapter provides a short examination and critique of the processes associated with cultural heritage and humanities data (Oldman et al., 2016). It informs an alternative strategy designed to interconnect research and professional knowledge practices using a structure – a 'graph' – but fundamentally a change to our approach to systems of knowledge and content supported in a 'semantic network'.[2] A semantic network, a concept with some similarities to the way we think, supports *emerging* knowledge. It provides for meaningful and intellectually driven structured data narratives, which are both human and computer-readable, not simply uncontextualised metaphysical (subjective) and static database abstractions. The strategy ensures that research can draw more effectively from practice, and that research outputs are directly incorporated into professional institutional systems, which are underpinned, and expanded upon, by a method called 'knowledge representation'. Knowledge representation was originally a methodology positioned at the core of digital humanities, sitting within the technique of computer 'modelling' as a progressive force for the humanities (Unsworth, 2000). Unfortunately, the difference between abstract and static 'data modelling' and 'computer modeling' (not just the organisation of data but the ability to reflect and augment thinking dynamically) was not fully understood, and the latter has had little application (or further development) over the last 20 years in general end user computer systems (Unsworth, 2000). This has stalled the progression of systems adopting dynamic processual thinking (despite its progression in underlying disciplines) to provide an answer to reductive data processing and computational thinking.

The digital humanities has maintained a narrow and instrumental approach to scholarly sources. Even computer modelling – the approach that made it 'of, for, and in' the humanities[3] – was described in a narrow heuristic mathematical approach (McCarty, 2004) and sidelined fundamental historical challenges (Hobsbawm, 1998, pp. 113–115). It failed to progress from the "syntactic relations [of] logicomathematical formalisms" to a dynamic and holistic systems approach, and therefore missed the opportunity to reevaluate how society approaches data and take a more critical approach of the role of computers in humanities methodology (Foerster, 1971). There has

been a distinct lack of attention paid to the communication of meaning and relationships in data. At its conclusion the chapter will outline a solution that combines systems with interdependent processes centred around people, which is designed to resolve the conflict between research and practice, and is aimed at connecting research outputs to professional practice and vice versa.

The chapter proposes that progression can never come from a static Cartesian reduction and a division of labour between knowledge and 'doing'. Rather in a knowledge society systems can only be progressive through their ability to support a continual expansion and evolution of knowledge directly through subject experts – professional or otherwise.

Origins of the catalogue

One of the earliest published collection catalogues in the modern era was produced by Don Saltero's Coffee House in the eighteenth century. Its proprietor, James Salter, a former 'servant' of Hans Sloane (whose collection founded the British Museum), was able to amass a collection, helped by object donations provided by Sloane, Issac Newton and others, which was displayed to customers. These catalogues provided sparse descriptions which simply indicated their 'curious' status. Little additional context was given because they were viewed simply as curiosities, not as evidence of diverse forms of global knowledge, and items meaningful both to their makers and users. A typical object description in the catalogue read: "curious piece of metal found in the ruins of Troy" or "a box of relics from Jerusalem" (Don Saltero's, 1782).

Discussion in the coffee house would have revealed different attitudes towards the people and cultures from which these objects originated. Today, in modern museums, data records of objects are equally sparse in terms of the social significance and historical context they provide, more so with regards to objects that come from parts of the world that are less understood by Western experts. Until recently, this lack of context had been unchallenged, despite the trend of openly publishing collection data records on the World Wide Web. There is an assumption that data can never be any more than an index or a finding aid, incapable of augmenting and incorporating knowledge-generation processes – a mindset equally apparent within some digital humanities projects and research institutions. However, this mindset has come under increasing scrutiny.

Many of Saltero's curiosities were designed to amaze and entertain rather than to educate, but some of the labels provide an insight into the eighteenth-century worldview which is also 'curiously' reflected in modern data records. Heritage datasets provide intrinsic identity and physical data, continuing a narrow 'matter of fact' approach facilitated by commercial database technology that eschews context. This situation is camouflaged by the lack of interest that such datasets generate within wider communities, who assume that this is all that data can provide. As a result there is a significant difference between front-of-organisation rhetoric on diversity and inclusion, and the continuation of anachronistic and mechanical back-office processes which are serviced by "technological solutionism" (Easterbrook, S. 2014, pp. 235).

Challenges

The question of whether we can be confident about digital data is directly related to the objectives, structures, and processes of arts, heritage and research organisations. Over the years public income has declined, which has inevitably resulted in a focus upon 'operational' priorities, and the problem of generating income to maintain a certain level of service to a particular audience. Moreover, research groups are also investing in marketing infrastructure to target funding within an increasingly competitive environment. The focus becomes oriented towards self-preservation rather than progressive and critical knowledge processes, or contributions to wider social and environmental issues. This creates conflicts between funds provided from arts and humanities grant bodies, and the focus upon internal business priorities. This can relegate wider community agendas that are not considered essential in this environment. Consider this excerpt from a prominent museum director in Germany over 20 years ago:

> ...administration, fund raising, organisational matters are our primary concerns. Ten or fifteen years ago in Germany this was not the case, but now everything revolves around such issues as how one can find a sponsor for such a project, etc. To think of doing one's own work, work with some claim to scholarship, is out of the question. The ethos that was instilled in us at the university has dissolved into a nebulous cloud, even as it remains as a memory, but there are after all only so many hours in the day and the pressures from all sides have grown to such a degree that we can think of

> ourselves as a service industry, and one of the pillars of museum work, namely research, has somehow come up short.
>
> (Haxthausen, 2003, pp. x–xi)

As museums focus on income generation to make up for the shortfall in public funds, their structures change to strengthen administrative elements of the organisation. This can alter organisational dynamics and strategies, and retain outmoded processes which are in desperate need of innovation. A similar pattern occurs in academic circles, as well as across many parts of the economy. For example, the environment has become a prominent aspect of marketing output in many organisations, but has patently failed to be converted into long term solutions to correct the situation, let alone reverse it. Ecological credentials have become a significant and even essential part of organisational promotion, and yet practical targets are not met and global warming continues. A reality gap exists between rhetoric and action, and this applies to other important issues such as social justice which require holistic not atomistic approaches. Protecting funding sources inevitably generates a type of risk averseness, and creates conflicts of interest that work against heritage as a force for addressing social and environmental questions. This is magnified in times of financial hardship. Social, educational, and research activities are permanently affected in the same way that general social welfare is restructured and permanently reduced after each economic crisis (Harvey, 2010).

Heritage institutions have inherited the ideology of apparent organisational growth, directing resources into improving their physical and commercial experience – even to the extent of investing in new buildings – and yet still promote the idea of the museum as a space for scholarship and knowledge. The impact upon research is clear from the experience of curators from different fields. For example, Pringle states:

> …[m]y own experience and the experiences of those I interviewed reveal that the discourse of financial sustainability can prohibit or at least detract from a museum professional's desire to undertake detailed research across the organisation. Individuals at more than one institution I spoke to acknowledged that it is not possible to devote as much time as they would like to in-depth enquiry, given the range of activities they were involved with combined with a priority on programming.
>
> (Pringle, 2019, p. 24)

The qualities of cultural heritage data released to the Web is an important issue but its significance has yet to be understood, and its impact fully felt. The culture of open-data publication means that indexes become primary information sources, particularly in computer-based reuse, produced and managed by technologists that control those systems and networks (Day, 2014). For cultural heritage organisations this has significant implications for open and meaningful communication, not just through their own digital services but for wider use in other information infrastructures which harvest and reuse that information for wider audiences. Any issues with the data, whether explicit, implicit, or through omission, are replicated and placed within different contexts. The risks to organisations who promote themselves as authoritative include inaccuracy, inappropriate language, and, of growing concern, the omission of important historical information often associated with ethical issues. This undermines other efforts and resources put into educational and engagement initiatives provided by a wide range of community and local projects.

Curators were worried about the open publication of collection data in terms of its quality and content. This was countered by an argument for openness and community enhancement. However, the publication of this data has not resulted in a collaborative community dynamic. The act of publication (an instrumentation process) has overshadowed the need to review content (its meaning and significance). Collection systems and their publication have become the domain of IT departments who reassert the primacy of Babbage's efficiency of process separated from human concerns (Schaffer, 1994). The status of collection data is now confused, fragmented, and anachronistic, yet is disingenuously published under the heading of 'data democracy', despite a lack of representation of original cultures and communities. For these wider communities it adds little more to the historical record than the catalogues of the Enlightenment.

So far online collection and historical databases seem to have avoided detailed scrutiny, but unlike other forms of managed 'front of house' communication, they provide a window onto an organisation's instrumental processes; they represent a core internal information system that uses a systematic process to record information about the 'primary' focus of the organisation – the collection. If there are issues with this system, then by implication there are internal processes that need to be addressed. If not then a continued separation (fragmentation)

of activities takes place which reveal a contradiction between different parts of the clock (Phillips, 2015).

Modern data issues in cultural heritage come about as a result of: the original objectives of creating an internal collection system and its continuing rationale; the database architecture and standards that they employ; the provision for ongoing processes for updating the information; and the management of understanding of all of these aspects, as well as the dynamic of digital infrastructures generally. There have been concerns in many other sectors about the lack of equality in databases and machine-learning initiatives have exposed problems of bias and discrimination. This reminds us that modern AI is neither artificial or intelligent, but reliant on human intelligence and knowledge. Some museums, even those with resources, place unending notices on their online collection sites that warn of "offensive and discriminatory language" which should be accepted before accessing.[4] The underlying structural problems are not yet a consideration.

However, the approach and timescale with which to address this is crucial. Why haven't cultural heritage organisations, over many decades, not dealt with these internal data issues before? A large amount of cultural heritage data has not developed beyond the original card records and acquisition books used to create the data. Very few museum systems show a provenance of meaningful or substantive update over time to the type of content they provide. Ultimately data is reliant upon human processes to convert practical experience and ongoing research activity – using appropriately designed tools – into credible, contextual, and informative representations. Moreover, this process should be part of a conversation with external interested parties. However, collection systems and standards have hardly changed over the last 30 years, pointing to a prolonged lack of urgency with regards to thinking in new ways about process and content.

This is not a Peace Pipe

At the CIDOC 2023 International Committee for Documentation conference I used two examples from the Don Saltero catalogue (Saltero 1782). It is possible to identify items that appear in many modern museums, therefore allowing a comparison to be made with their 'new' digital counterparts. In the thirty-fifth edition of the catalogue, an item located in glass case III and numbered 15 is described as an

"Indian pipe of peace, called by the natives, the *calamat* [sic]". The word 'calumet' is not indigenous. Native indigenous people have their own names for these ceremonial pipes. Calumet is a French Norman word, and its origins are described in the entry made by Dunbar Roland (former Director of Mississippi Archives and History and member of the American Historical Society) into his *Encyclopedia of Mississippi History Volume 1* (1907). He says "Calumet means a pipe. It is a Norman word, derived from 'chalumeau', which was the name of a rustic pipe or musical instrument, used among the shepherds at their rural feasts and dances. The name of calumet was first applied to this Indian pipe by the early Norman-French settlers of Canada, and it has since retained the name" (Roland, 1907, p. 337).

The concept of the 'peace pipe' is more than erroneous. It reinforces a convenient and political image divorced from its reality. The US federal parks association now says that,

> [m]any people associate Native American pipes with the term "peace pipe", this is a misnomer. Early American settlers and soldiers took note of the pipe being smoked at treaty signings, resulting in their misunderstanding of the pipe as something done only to symbolize peace.
>
> (National Park Service, 2020)

The continued use of the term 'peace pipe' represents a lack of interest in understanding native American culture, and a lack of motivation to address false and racist representations in various media. There are numerous examples of this entombed representation in films, commercials, and museums (in data) all over the world, out of step with changes made in other organisations and institutions. A US college football competition called the Peace Pipe Trophy was discontinued out of respect for their Native American neighbours but the Smithsonian National Museum of the American Indian makes a point of showing its lack of progress by publishing an image of the original acquisition book record side by side with its modern digital record. The digital record is simply a copy of that outdated card record which was created by the Army Medical Museum, an institution founded in 1887 on the National Mall, Washington, and later demolished in 1969. Their data is demonstrably stuck in the past.

In another example, a museum catalogue record of a papier-mâché figurine produced for the Day of the Dead celebrations in Mexico,

references a sensationalist journalistic book, *A Nightmare Tale of Drugs, Voodoo and Death in Mexico* to explain the concept of narco-satanists (British Museum, c. 1980s). The Day of the Dead, a celebration in honour of the deceased, is an intangible cultural event recognised by UNESCO. Referencing the book continues a problematic inference. Apart from the question of editorial processes, the record opens up a wider question about the demonisation of a West African religion, brought over to the Americas by slaves. The use of the word 'voodoo', which has been used interchangeably with the real name of the religion 'Vodou', is used by politicians to demean their opponents, or to demonise their political and military enemies, and by journalists who use it to spice up their stories about South American drug cartels. It is also used by film and TV producers to generate a racist fiction:

> Since slavery, tales of Voodoo helped establish black criminality as a social fact, and ultimately, Reconstruction-era public Voodoo narratives helped cultivate the ground for, and served as key forerunners to, the public narratives of the black 'beast' rapist, which defended Southern political violence for generations, black disfranchisement, and legal segregation in Louisiana.
>
> (Gershon, 2020)

In the African version of Microsoft Encarta it is stated that:

> Vodou originated in the ancient kingdom of Dahomey (present-day Nigeria, Benin, and Togo) and derives from the Fon word for 'God' or 'spirit'. Other accurate spellings include Vodun and Vodoun, but never voodoo, a sensationalist and derogatory Western creation. Vodou is a comprehensive system of knowledge that has nothing to do with simplistic and erroneous images such as sticking pins into dolls, putting a hex on an adversary, or turning innocents into zombies. It is an organized form of communal support that provides meaning to the human experience in relation to the natural and supernatural forces of the universe.
>
> (Microsoft Corporation, 1999)[5]

Universal categorisation standards

The imposition of ideology, values, ways of thinking, relations, and other processes on others – a faux Western universalism – was a central

principle of colonialism as Western powers imposed their standards on other cultures, building legacies which remain in place today. The pattern of imposing this type of universalism through 'plantations' in Ireland, America, South American countries and Caribbean states, many African countries, Australia, and others, was always accompanied by an associated bureaucratic set of *standards* – an intrinsic, dispassionate, uncontextualised form of record keeping. Such a homogenous, universalising form of history is still embedded (planted) to a certain degree in archives, libraries, galleries, and museums. These institutions remain influenced by an understanding of standards and categorisation inherited from another era. Despite resistance, particularly in regional settings, the overall mentality holds because of a lack of motivation, knowledge and skills, and the prioritisation of resources allocated to their re-examination.

Universal computing derives from the same mentality. The idea that the computer is a universal tool across all subjects carrying with it a form of instrumental colonisation. It exerts the universal concept of 'computational thinking', an ideology which has similarities to detached and reductive thinking, upholding the legacy in our digital age achieved through the maintenance of a set of categorising standards which, by and large, serve to uphold established universalist history and are part of its structure (Bridle, 2018). Historians and communities indirectly and separately provide corrections to the 'flattening' provided by these records, but find it difficult to make an impact on the digital world. (Sousanis, 2015)

In the context of heritage documentation, as soon as a progressive group appears to have created a solution to break the stranglehold of this type of universalism by providing a means to represent historical reality and complexity beyond the 'official' record, technologists reimpose it, yet at the same time it paradoxically enforces a fragmented framework of information silos. Universal standards are enforced within different 'functions' – functions that should be viewed as integrated processes but are instead, according to the Cartesian mindset, placed into separate 'application profiles' that work against notions of transdisciplinary, dynamic, and processual knowledge creation. Both disciplinary and colonial traditions seek to divide and and resist inconvenient interdependencies.

From the very first European digital project to bring together the collection data from major heritage institutions during the 1990s came the pronouncement:

> Can one hope for the 'virtual museum'? Yes, if one holds a universalist view of the world where different contents could be moulded into identical forms. No, if one thinks that each system of representation should keep its own characteristics regarding form as well as contents.
>
> (Delouis 1993, p. 127)

This mindset still holds true as heritage technologists prioritise the efficiency of processing and the supposed (but in reality one-sided) reduction of cost justifying it under the banner of accessibility and open and fair data. The question is, does it represent a 'fair history' and does democratisation extend to digital design and decision making.

From database to knowledge base

Databases are a construction of the data-processing world created by Charles Bachman, a data-processing engineer. Created in the 1960s, the integrated data management system (IDS) accelerated the use of computers by companies, and was broadly the same as the database management systems we use today – just like the computer architecture it runs on. It was designed to efficiently store and retrieve individual commercial records, such as invoices and purchase orders, to and from individual pigeon holes. It was *not* designed for representing human history. Thirty years of cultural heritage digital projects has had little impact on core institutional database systems, which are still based on standards that use an approach initiated in the 1960s (Sever, 2020).

Knowledge representation is a method that was developed in the 1990s by a branch of computer science interested in creating structured computer and human-readable data that describes a domain of interest through ontological commitment. The method provides an approach that encourages sophisticated patterns of information from which computers and humans can perform reasoning, and crucially it is a "medium of human expression, that is, a language in which we say things about the world" (Davis et al., 1993, p. 17). Ontology is about what exists scientifically and although science is also dynamic and changes (all systems are dynamic) generally stable concepts can be agreed upon for the purposes of creating a framework for epistemological statements that can be synthesised using the framework across different knowledge base applications: for example, what is a person,

an event, an activity, a thing, an argument, an influence, etc. These concepts can then be further refined to capture more specialised forms of knowledge, if necessary.

Since the 1990s cultural heritage and humanities experts realised that developing such a framework would provide a richer and expressive representation of historical concepts. The framework, the CIDOC Conceptual Reference Model, defines entities and properties with scientific accuracy, based upon empirical examples, and provides for richer data authoring and synthesis, embracing heterogeneity rather than stripping it out. The base of the CIDOC CRM creates a foundation allowing coherent and connected networks of knowledge operating between general and specialised concepts. It allows the representation of meaningful arguments using patterns of facts as evidence, and can incorporate multi-causal relationships which allow social, environmental, and actor-based influence to be traced. The group responsible has achieved a monumental task, yet this achievement remains underused and has lacked suitable software.

Nevertheless the CIDOC CRM provides an opportunity to change the nature of heritage documentation to address the issues outlined in this chapter. Open and contextual enrichment of data is key to providing inclusive representation, and is part of a necessary reform of institutional processes that address wider social responsibility. Institutions need to understand the wider significance and relevance of their data (and missing data) for interconnected communities, and rethink the internal processes and digital communication frameworks necessary to grow those relationships. They require a new type of knowledge base that underpins and justifies the organisation in a wider context.

This need was anticipated and addressed by the Andrew W. Mellon Foundation in 2008, which provided an initial vision for digital research, development, and production. The platform they commissioned promoted the following principles:

- "impose no strict requirements on data models and permit models to be revised and even replaced with minimal effort".
- do not "force projects into a common mold".
- allow collaboration "with any other project built on the same infrastructure".
- ensure researchers could "pursue their research in whatever new directions may emerge".
- "be used to host one or many projects" across different organisations.[6]

That platform, now called ResearchSpace, based on Semantic Linked Data, influenced by a form of systems or complexity theory, and the CIDOC CRM, was developed at the British Museum in a project which substantially adds to the initial requirements to support historical context and provide dynamic knowledge and modeling tools that apply a relational approach.

It is a system used in research institutions and has been adopted by The National Archives (UK) as an institutional system and supports a researcher-practitioner strategy to build a knowledge network available and accessible to their partners. A framework for an interconnected knowledge base across organisations, particularly as a means to provide local and regional community archives with the technology that they require, and to 'level up' by making the technology and methodology accessible, whatever the size of the organisation. Its implementation represents a significant milestone in the design of knowledge base systems that can address a wide range of uses, *dynamically evolve* over time, promote collaboration, equality and inclusion, and engage new audiences. Its key objective is to transfer the role of modelling to the user, rather than continuing the practice of predetermined models created as instrumentation.

Conclusion

Can we be confident in cultural heritage data? No. Not until we start thinking differently about its content and its role in open networks, not without incorporating diversity of experience and interdisciplinary skills, and not without a wholesale replacement of database information systems with ones that confront complexity, context and dynamic knowledge creation. The CIDOC CRM represents a massive and complex effort – a true ontological framework for the humanities domain resulting from 20 years of continual work. Building on this effort platforms such as ResearchSpace allow people to use this dynamic complexity practically but with a large degree of accessibility – and this makes digital "charlatanism" inexcusable (Unsworth, 2000). However, the following quote taken from a JISC conference represents the problem. Curators from heritage institutions were asked (through a secret ballot), 'what was the most urgent issue that confronted them in terms of digital challenges?' The answer given was the need for quality contextual data (something which has also been reflected in museum visitor surveys). This answer was rejected

by the panel and the reply, reflecting technological solutionism and computational thinking, was this:

> ...developers are impatient and just want to get access to the data and do interesting things, and on the other side of the equation we have curators reasonably concerned about how that data is going to be used or misinterpreted or used incorrectly. I think that this is actually a difficult area because the conceptual reference models are generally more popular with the curators than with the developers…if we find that the risks are starting to become too great and the value is so poor because the data is being misused or used incorrectly or inappropriately, if that risk is a risk to society in general and not just to the curators...then we are going to have to find those kind of solutions.
>
> (JISC, 2013)

Conceptual reference is not an option. It is (and has been) an integral part of heritage knowledge long before the arrival of digital, but it has been stripped out of computer data. It is the context – the layers or systems of knowledge which include the objects – that makes the information purposeful, powerful, and interesting – and contributes towards a history of society. The risk was realised long before this statement, and computational thinking has cost the humanities dearly in the digital world.

Notes

1 Neoliberalism re-asserted a market approach to processes that had previously been publicly financed because they had significant value to society as a whole, and could not be properly supported by the market. These processes included health, education, and heritage. Institutions such universities and museums are instead asked to generate income themselves, changing the very nature of these institutions and their perceived role.
2 Often called a knowledge graph.
3 Alluding to McCarty's Humanities Computing (2005).
4 See, for example, the Collections Home page for the Peabody Museum of Art & Ethnology. Online. Available at: https://collections.peabody.harvard.edu/collections.
5 Taken from PBS site Wonders of the African World – www.pbs.org/wonders/Episodes/Epi3/3_wondr3.htm
6 Points from a letter from the Andrew W. Mellon Foundation to directors of National Museums in London.

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Part III

Interface

7 Whose production house of culture?

Re-examining curatorial practice in the distributed museum

Nancy Proctor

Introduction

As discussed in an earlier essay, 'From elsewhere to everywhere: Evolving the distributed museum into the pervasive museum', Vince Dziekan and I posited that:

> During the digital era, we have seen the *modus operandi* of the museum shift inexorably towards increasingly open and integrative modes of engagement and content creation… [with] an onus on greater co-creative meaning-making.
>
> (Dziekan & Proctor, 2019)

In this pre-pandemic text, we charted the path leading from the "distributed" to the "pervasive museum", celebrating the paradigm shift in cultural practices made possible by networked technologies. We championed "the transformation of the museum from a treasure house to a production house of culture."

But as always, technology is a double-edged sword: it can accelerate and amplify inequities as easily as it can serve as a tool in overcoming them. Inspired by feminist and anti-racist interventions in art discourse, perhaps the museum as distributed network has the potential to occupy a Janus-like position, pursuing two, seemingly paradoxical strategies at the same time: both subverting and connecting historic roles with new and emerging practices in a radical act of 'sankofa' – looking back to go forward.

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As – and if – museums make the admittedly radical move from simply collecting, preserving, and presenting cultural objects (whether they are tangible or intangible) to being proactive agents of cultural production, whose production house of culture will they be? In other words, whose interests will be served by the 'co-creation' that so many museums, including my own – The Peale, Baltimore's Community Museum – now espouse as a goal that is primary, if not core, to our institutional missions?

The Peale, Baltimore's community museum

The Peale is Baltimore's community museum, based in the first museum building in America. It was founded in 1814 by Rembrandt Peale of the Peale family of artists, museum innovators, and entrepreneurs. Peale introduced gas light to the city as a way of selling tickets to his museum after dark. His father, Charles Willson Peale, had opened the first museum in the country in his home/studio in Philadelphia in 1784, and developed the diorama display format to show natural history specimens in their habitats. The Peales' Philadelphia and Baltimore museums were the first in the USA to exhibit prehistoric animals (Alderson, 1992).

The Peales were quick to adopt new technologies, and used physiognotrace machines to generate silhouette 'selfies' as instant souvenirs for museum visitors. Moses Williams, enslaved in the Peale household, grew from physiognotrace operator to become a successful silhouette artist, earning his freedom a year earlier than stipulated by Pennsylvania law under the 1780 gradual emancipation act. After reconstruction, the Peale Museum in Baltimore hosted the first public school in the state of Maryland to offer a secondary school education to people of colour. It became Baltimore's first Municipal Museum in 1930, and was shuttered, along with a number of other city-owned museums, in 1997.

After 20 years of standing vacant followed by a 5-year, $5.5 million renovation, the historic Peale Museum building has reopened. With no physical collection other than its 1814 building, The Peale stewards a growing digital collection of Baltimore stories, and hosts exhibitions, performances, and events created by the city's artists and storytellers, both online, at the virtual Peale in Second Life, and in its historic galleries and garden.[1]

The Peale's programming is driven by Baltimore community members, rather than created 'top-down' by curators or other experts

invited by staff. Born of financial necessity, our grassroots approach has resulted in programmes at The Peale that have relevance and community engagement baked in. And perhaps counter-intuitively, the quality of the hundreds of programmes we have presented since relaunching in 2017 has been spectacular despite – or perhaps precisely because – all Peale programs are 'crowdsourced'.

This is not crowdsourcing in the sense of 'free labour' for the organisation – an important part of The Peale's purpose is to help creators develop revenue to further their creative work. Instead, our community-led approach to programming is inspired by a talk given by Chris Anderson, then Editor in Chief of *Wired Magazine*, at an internal conference at the Smithsonian in 2009. Aimed at helping museum staff rethink the institution for the digital age, he called upon Joy's Law (named after the founder of Sun microsystems), which – to paraphrase – states that "the best person to do any given job for you does not work for you, and moreover you cannot find them. But they can find you if you are sending out the right signals".

It has turned out that the Peale Museum building itself is the sort of beacon Joy's Law calls for, sending out the signals we needed to attract the right people. Once our doors were open again, artists and others from the community began to find in The Peale the platform they needed to produce their exhibitions and events. In more than eight years of programming at The Peale we've never had to say 'no' to anyone who wanted to host a programme with us, either online or in our historic building. Nor have we ever had a programme that was a dud. The best way I can explain this success rate is that when an artist recognises in the Peale the platform they need for their work, they are right. And when an artist has the platform they need, they do their best work.

The museum as distributed network

By turning the 'build it and they will come' approach that has been more common in museums on its head, and starting instead with listening to and collaborating with the museum's communities, we end up with an 'inverted' or co-curatorial process. Co-created programmes and exhibitions are inherently relevant because they come directly from the communities they address. In this way, we don't really have to wonder at The Peale if people will come, because they are always already there.

Inverting top-down curation to implement a co-curatorial process encourages us to think beyond the 'hub and spoke model' that has too often dominated in institutional use of social media and other communications. In this centralised model, the museum broadcasts message out from the centre and may strive to add more spokes to the wheel, for example new platforms such as Snapchat or TikTok, or whatever the digital flavour of the month is. However, more channels for communication does not necessarily mean the organisation is listening or receiving feedback from audiences along two-way paths. Instead, we should conceive of the museum as a node in a three-dimensional web of co-creators and communities: the connections and community are built into co-created programmes and content. The museum becomes a distributed network, extending the museum's reach far beyond its walls or a single geographic location. Like the many other platforms that storytellers, artists, and creators use, the collection is distributed across media, space, and time. In the distributed network, cultural discourse grows through network effects, and is sustained across multiple communities, even when the museum is not present or actively stoking the conversation.

Distributed networks are structurally more sustainable than the hub and spoke model because the system does not stop working, and the conversations do not cease, if the network sustains a loss in any particular area. This design was deliberate on the part of the military industrial complex that invented the internet to enable communications and information to flow even if part of the network had been destroyed in an attack. By contrast, the hub and spoke model is particularly vulnerable: a direct hit on its centre can cause all its spokes to fail as well. And in the age of cyber warfare, this is true both literally and metaphorically.

Most powerfully, the museum as distributed network is wherever the audience is. It does not depend on a building or physical location to continue to have impact and value for its audiences and collaborators. It is therefore essential to both The Peale's mission and its programmes that we meet Baltimore's artists and storytellers where they are in order to facilitate their creative work.

Reconceiving the museum as a distributed network requires that we also reformulate the museum's mission. Historically, museums in the European tradition have defined their missions around the three goals of collecting, preserving, and interpreting cultural heritage. In his article for *Curator Journal*, Maxwell Anderson published an important

challenge to that received purpose, encouraging museums instead to undertake a more collaborative role with their communities, gathering, stewarding, and conversing with and about collections (2007). In the distributed museum, I believe we need to add a fourth responsibility: that of co-creating with our communities' artists, storytellers, and culture-keepers of all sorts by putting our institutional resources at their disposal as platforms for the co-production of culture.

Redefine/ABLE

Redefine/ABLE: Challenging Inaccessibility was an international collaboration that put such an understanding of the museum's new mission into action. The project began with several key goals. These included: sharing the challenges, successes, and stories of people living with disabilities in Baltimore and Maryland at large; interrogating the idea of 'ability' within historical, cultural, and ethical contexts; and creating a model for the ways exhibits and other information delivery can be more accessible. During the 2019–2020 academic year, the University of Maryland, College Park graphic design cohort conducted research and worked with disabled stakeholders to create an exhibit under the leadership of Professor Audra Buck-Coleman. The project was presented in partnership with cultural sites in the UK – including the De La Warr Pavilion, the Royal Pavilion and Museums Brighton, and the University of Brighton – and was developed in Second Life by Linden Lab and Virtual Ability, Inc. Halsey Burgund built the open-source platform and application, including a new mobile web site, used by the project.

We intended this project to manifest as a cross-platform or 'transmedia' exhibition in two different physical spaces – the Carroll Mansion in Baltimore, and the Herman Maril Gallery on the University of Maryland, College Park campus – as well as in an online space, all planned to open in March 2020. *Redefine/ABLE* became an online-only exhibit due to COVID-19, with an exhibition microsite sharing stories by people living with disabilities via video and essays,[2] and an active social media presence. We were also able to install a re-imagined version of the physical exhibition in the three-dimensional, virtual Peale Museum, created within the online virtual world Second Life (Second Life, 2020), thanks to a partnership with Linden Lab and Virtual Ability, Inc. that was a result of the MuseWeb 2020 Conference and the virtual conference space they built for MuseWeb

in the virtual world. The digital gallery was modelled on the physical Peale's 'Latrobe Room', the gallery that makes the historic museum building architecturally unique. Like the Redefine/ABLE website and social media posts, the exhibition in Second Life is accessible to online audiences 24/7, and engages an entirely new global public for the Peale. Opened on August 15, 2020, the reach of the online exhibition was further extended by a robust programme of online workshops and panel discussions hosted through Second Life, Zoom, the Peale's website – as well as YouTube, as part of Strawberry Linden's "*Lab Gab*" live-streamed variety show – tripling the Peale's audience engagement numbers in 2020 from preceding years. The project's Second Life presence attracted groups and bloggers to visit and report on Redefine/ABLE and the virtual Peale, including Novata, who voluntarily created a comprehensive video for their YouTube Channel.

The pandemic both altered the installation plans of *Redefine/ABLE* and heightened the pertinence of the project's mission. *Redefine/ABLE* invited people living with disabilities to amplify their voices and share their stories through the Peale's web-based story recording tools, Be Here Stories,[3] and a free 'storytelling hotline' that can be accessed without a smart phone, as well as in-person and through online story recording events. All of the exhibition's events happened online with live professional captioning and ASL interpretation. The recordings of these events and their transcripts remain a free online resource after the end of the project.

Nonetheless, as a panel discussed during the exhibition's opening event in Second Life, there are barriers to accessibility even in the internet's oldest and most developed virtual world: sign language interpretation is not yet possible due to the limitations of rendering for avatars, and some find the need to build and navigate the world via an avatar too onerous, either for their technical skills or their computers' processing power. Even as virtual worlds have enabled access for people of many differing needs and abilities to a wide range of experiences and communities, they are not a panacea for inclusion. With no single platform or solution for universal accessibility, inclusion must be approached, as Debbie Staigerwald from The Arc Baltimore commented during a *Redefine/ABLE* online event, "one person at a time".[4]

Spanning multiple physical and digital platforms, the structure of the *Redefine/ABLE* exhibition reflects the emergent nature of the museum as a distributed network, even as we address each platform's

affordances and limitations 'one technology at a time'. Perhaps now more than even in its original dual-site format, the *Redefine/ABLE* exhibition represents an important initiative for testing and exploring ways of creating spaces that are not just more accessible but, especially when connected, also more inclusive. The project has transformed the way we approach presenting online exhibitions and events at The Peale, helping us to make important advances in the accessibility of our programming, as well as delivering on our mission to be a laboratory for developing more accessible and inclusive cultural spaces.

In a sense, The Peale has never been more accessible than since the pandemic began. The *Redefine/ABLE* exhibition exemplifies this pivot in the wake of the COVID-19 outbreak, as well as the Peale's commitment to inclusion. But is The Peale more inclusive as a result? As The Peale's focus on online programming since the pandemic started has demonstrated, there are limits to the reach and accommodations afforded by digital technologies. The tools and techniques needed to bridge the 'digital divide' today are incomplete, in development, and in some cases completely absent. How can we "dismantle the master's house", as Audre Lorde (2018) put it, using the digital tools currently at our disposal?

Speaking in a panel discussion on this topic as part of the *Redefine/ABLE* exhibition project, Dr. Nettrice Gaskins, digital artist and educator, argued that we can only be fully inclusive when those who have been excluded by the systems of power and oppression are themselves empowered to build and control the platforms and tools necessary to create a new cultural discourse.[5] This is an important inflection on the 1980s rallying cry of disability rights activists, 'nothing about us without us', suggesting the need to rethink not only the Peale's commitment to accessibility, but also its strategy for inclusion. It requires the Peale and cultural organisations of all kinds to commit to capacity-building and enabling access to the means of cultural production for constituents.

Redefine/ABLE took us some way toward this goal by funding the further development of the opensource platform on which the Peale's Be Here Stories application and mobile website are built. Developed by the artist Halsey Burgund, the Roundware framework has been adopted by a number of other institutions and initiatives around the world, including heritage sites in the UK, as a result of the *Redefine/ABLE* project. The experience of reimagining the Peale in a virtual world, and reconceiving an exhibition about 'redefining ability'

during a pandemic, helped the Peale to develop new tools, resources, and strategies for bridging the physical and the digital to become a truly global-distributed network. At the same time, it opened our eyes to the deep structural re-engineering that we must still undertake in order to facilitate the writing of a soundtrack of the city that, by including all of its voices, helps people everywhere see Baltimore in a new light.

Whose production house of culture?

Moving beyond the 'hub-and-spoke' Museum 2.0 model means that being multi-platform is not enough. We also need to ask who owns the platforms that museums use, and to whose benefit.

In the early days of the internet, I was amongst those who were excited by the potential to reach collectors and exhibit their works directly online, without the need for the mediation and control of galleries and museums. I naively thought that the internet would democratise access to art. I also cheered as social media and platforms such as YouTube provided a space for creators to publish and make a living from their work.

A couple of decades down the road however, the digital economy has not turned out to be quite so egalitarian. The three-dimensional web in which the museum, as distributed museum, exists is increasingly dominated by a very small number of companies such as YouTube, Spotify, and Amazon, who are for all practical purposes monopolies in their sectors and growing bigger and more powerful all the time. As larger and larger shares of internet income flow to fewer and fewer big tech and big media companies, artists have even less control, and less income, from their online activities.

In their book, *Chokepoint Capitalism*, Rebecca Giblin and Cory Doctorow trace how platforms enthusiastically heralded in the early days of the internet as liberatory spaces of unlimited creativity have become 'chokepoints', feeding off the very creators whose content drives the internet (2022). They are called chokepoints because they control the flow of content and money between creators and their audiences, and squeeze artists in order to increase corporate profit share. As just one example, Giblin and Doctorow point out that as little as recording artists made from publishing through the major record labels in the pre-internet era, they are earning even less from Spotify and Ticketmaster.

It may seem strange to compare museums, which are for the most part non-profit and government-run organisations, with big tech and big media, let alone moot the word 'capitalism' in this context. The art market is the largest unregulated market in the world, and has seen even less regulation and fewer restraints on it than the internet economy. It is the lack of regulation in the US that has allowed the small number of media and technology giants to grow out of all proportion through mergers and acquisitions, not to mention putting potential competition out of business.

Competition is one of the remedies for monopolies. Forcing dominant players to compete increases innovation as well as the freedom and the opportunity to operate in any given sector. From this point of view, I applaud and encourage the construction of new museums – let 1000 flowers bloom! However, we also need to ensure that more participants have the opportunity to create new museums: that the proliferation of museums is not just a case of more museums being controlled by the same few dominant players.

For example, over the past many years, China has been opening a new museum every 1-2 days, and it has now achieved its goal of having one museum for every 250,000 citizens. By the end of 2021, China owned 5,772 museums nationwide, an increase of 88 percent from 3,069 in 2012. The number of collection objects doubled while visitors hit 748,5045 million in 2021 despite the pandemic. Arguably then, more of China's cultural heritage is being preserved and presented to more people now than ever, but does this represent a true democratisation of access to cultural heritage? Is the cultural record more complete and are more voices being heard as a result of the boom in museum building in China?

Just whose cultural heritage is being collected, preserved, and presented, and who benefits from museums, new or old, is the question here.

Re-wiring power in the museum

There is a risk that in the museum boom, as in the internet economy, we are simply witnessing age-old structural inequities being codified within new institutions: it's the same old structure, just with new faces in power. These systems privilege the empowered and perpetuate themselves regardless of whether the specific actors at the top of those structures want to be oppressors or not.

Also, the oppressed and the exploited cannot avoid colluding with the system and shopping at the company store. For example, we might individually abandon Facebook and X (Twitter), but can we afford not to be there as institutions?

(Once again) Audre Lorde's words echo in my ears: the master's tools will never dismantle the master's house. Can the American museum, for example, rooted as it is in colonialism, white supremacy, and European princely collections, ever be an equitable institution? Paraphrasing Marx and Dr. Gaskins, I would argue that in addition to the means of production of the platforms and tools they use – i.e. the technologies, platforms, and algorithms – the people also need to own their museums.

Through curatorial programmes such as *Redefine/ABLE*, we are aiming not just to ensure that the museum is a distributed network, connecting with its communities on a wide variety of platforms both analogue and digital, we also need to make sure that the tools and the products of our co-creative processes truly belong to those creators and their communities: that we are not just crowdsourcing and engaging our communities in another gambit to extract free labour and new forms of cultural production to capitalise the museum of the twenty-first century. With each outreach initiative, with each co-created programme, we must be asking ourselves, 'whose production house of culture is the museum? Whose platform is this, and who is benefitting from our work?'.

It is not enough to be a good person or to have the best of intentions when going about our museum work. I am sure that we all entered this field because of our love of museums and the cultural heritage they steward – we are certainly not in it for the money! However, we need to examine the structures that our work is creating and perpetuating. Museums have deep roots in colonialism, nationalism, and the construction of self-affirming identities for the dominant class who have the means and the opportunity to build museums. Are we going to promulgate those systems of inequity, reproducing the same hegemonic structures, and re-entrenching the same selective narratives, with merely different faces in power in our erstwhile innovative new museums? Or will we dismantle these age-old structures, and ensure that the tools for rebuilding the cultural sector in a new, more inclusive model, are in the hands of the communities we purport to serve?

Notes

1 In addition to notable digital initiatives that have advanced the Peale's mission to serve as a laboratory for developing more accessible and

inclusive cultural spaces, non-digital programmes introduced by the Peale include an apprenticeship programme, which helps young people from Baltimore's disinvested communities earn while they develop careers in historic preservation trades, exhibition installation, and related transferable skills, and an incubator program that helps new community-driven museums and cultural organisations get their start.

2 See The Peale Center, 'Redefine/ABLE: Challenging Accessibility'. Online. Available at: https://redefine-able.thepealecenter.org/

3 See Be Here Stories. Online. Available at: https://beherestories.thepeale.org/

4 See The Arc Baltimore. Online. Available at: www.thearcbaltimore.org

5 Dr. Nettrice Gaskins is a widely recognised African American digital artist who creates works that combine images of individuals with an artificial intelligence (AI) application that synthesises patterns. Her work integrates science, technology, engineering, and mathematics (STEM) with the humanities, arts, and social sciences (HASS).

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8 Curatorial confidence

Balancing caring for the needs of artworks and the needs of audiences in our time of digital technology overload

Sarah Cook

As I write, on the desk next to me is a copy of Jonathan Crary's book *Scorched Earth: Beyond the Digital Age to a Post-Capitalist World* (2022), which considers how the environmentally-damaging, technologically-enabled supply chains we use might be finally killed off with the collapse of capitalism, taking with it the unequal and divisive digital age we live in… or so the art historian hopes. *Scorched Earth* argues that we need to completely unplug before we burn up. After the intense period of online connectivity many of us endured (or delighted in) during the COVID-19 lockdowns, this is a bitter pill to swallow. However, the extreme heat and climate events we are now experiencing suggest that greater collective, not just individual, action is needed to reduce our carbon consumption. *Scorched Earth*, written before the pandemic but published after, is the follow-up to Crary's book *24/7: Late Capitalism and the Ends of Sleep* (2007), which was the inspiration for the curatorial project *24/7* – a large-scale exhibition of 33 works with the tag line 'a wake-up call for our non-stop world'. In this chapter, I look back on what I learned from curating *24/7* and its follow-up online project *Sleep Mode* – both taking place at Somerset House in London between 2019 and 2020 – and reflect upon whether there can be a 'sustainable' model of curating and exhibition-making in the context of the supply chains of art and digital experiences. In particular, I want to define 'curatorial confidence' as exemplified by the act of balancing the role of supporting artists to create new work using digital technologies, alongside the role of positioning a critical commentary on digital technology itself in front of audiences.

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24/7: A wake-up call for our non-stop world

> The speed and ubiquity of digital networks amplifies, for billions of people, the incontestable priority of getting, having, owning, coveting, envying, all of which inflames the restlessness of the world, operating without pause, without the possibility of rest or recovery, a world choking on its heat and waste.
>
> (Crary, 2019, p.135)

The process behind co-curating *24/7* with Somerset House director Jonathan Reekie began with a consideration of some of the technology-induced societal shifts described in Crary's book. The idea that we have eradicated the daily routine in which night is distinguished from day, and in which working time is distinguished from sleep, or other communal shared leisure time, lends itself well to a visual, expanded-essay form. Just as Crary described in his book, we paired a painting of an Arkwright cotton mill lit by gas light under the glow of a full moon, by artist Joseph Wright of Derby (1734–1797), alongside a photograph of the modern-day equivalent scene, *A Modern Project, Highrise* (1995) by Rut Blees Luxembourg, which depicts a high-rise building with every window lit from the glow of a television. However, in keeping with the polemical style of the book, the exhibition was not just illustrative of someone else's ideas, but asked you, the viewer, to reconsider your relationship to artificial light, screens, and your non-stop working life. We embarked on the project with some doubts concerning the possible content of the exhibition: its balance of media and potential over-attention to the digital. Could we really put on a show with a depressing thesis (that technology is the ruin of our attention span and social life, not its saviour) and include so much screen-based work? Did we need the exhibition to end on an inevitably false or inadequate set of design solutions to the crises that unchecked capitalism has wrought?

Our curatorial strategy required a blind confidence, which we took from the affordances of the venue. Somerset House is unique in having an exhibition programme in which topics of urgency in society are explored through a variety of media.[1] Our first key curatorial decision was to let the artworks speak for themselves, rather than inviting them into the exhibition narrative solely as illustrations or design solutions to the trials of living in a consumerist digital world. We gave artworks space for their own intentions and critiques to become

apparent, which in some cases was a question of duration or the time it took for the works to play, or for audiences to view or interact with them. We felt that visitors would encounter the works one at a time, in a sequence of our devising, as part of a journey which reflected their own experience of living in a non-stop world.

Curatorially, we designed the layout of the exhibition and its sections so that audiences might experience a range of mixed feelings about our relationship to technology and to capitalism's endless drive to refashion technology in order to create new experiences. We curated deliberate moments of intensity in content as well as in noise, and even heat, such as in a claustrophobic work about server farms, *Chinese Coin (Red Blood)* (2015) by UBERMORGEN, and in a two-person game about drone warfare, *Killbox* (2016) by Joseph DeLappe and the Biome Collective. We also curated deliberate moments of levity and respite in a video work about wellness initiatives for gig-workers in a co-working space, *The Stroker* (2018) by Pilvi Takala, and in an animation telling the sweet romance between digital graphic artists and their on-screen creations at a Mumbai-based render factory, *Renderlands* (2017) by Liam Young. The path of the audience through the show was a balancing act between experiencing the isolating effects of technology, and then feeling its potential for bringing people together.

The second daring curatorial decision was to use a lighting design to guide the viewer through the narrative arc of the exhibition, in a doubling down on the trope of resetting your body clock with electric light. With the architecture of the space allowing for a one-way journey, lighting director Lucy Carter created a physical path between the works which emphasised our curatorial narrative: from lying awake shattered by the light of a full moon, or bathed in the blue-light glow of an iPhone screen, through to the working day of yellow overhead office light to the warmth of an early evening sunset – visitors literally walked through a simulated and compressed 24-hour cycle of light. The comment cards repeatedly noted how visitors had lost track of time in the exhibition, spending longer than intended ("2 hours, I needed 2 days!" said one visitor). Many said that they would look at the lights of the city, or the sun or moon, with fresh eyes, and that they would re-evaluate their dependence upon technologies which were distracting and disconnecting them from the natural world.

The *24/7* exhibition was curated to make visitors to the exhibition aware of their own productivity within the supply chain of digital

capitalism. However, it also offered us a chance to think about the supply chain of digital art for immersive and interactive experiences. In the years since the exhibition, a number of large-scale digital screen-based venues have opened in central London, including Lightroom and Outernet, as well as 180 The Strand (next door to Somerset House), which present 'immersive' experiences and exhibitions. Although different from these venues, but nonetheless potentially attracting the same tourists and young and engaged art-seeking audiences, Somerset House shares its building with partner venues such as The Courtauld Gallery and Makerversity. Somerset House has the infrastructure of a museum, which allows it to engage in the art world's supply chains. However, it also demonstrates a curatorial confidence by engaging with and forging new art supply chains through its support of artists and designers in residence in its studios. Somerset House is an incubator of ideas around creative and critical working with technology.

Having access to this other kind of supply chain offered another level of curatorial confidence. We could be sure of the quality of the works we were exhibiting, and the likely appetite of audiences, by borrowing existing important works that are well-recognised, thus enabling us to offer a kind of chronology of media art, such as a copy of an Étienne Jules Marey chronophotograph (1890–1894), Susan Hiller's *Dream Mapping* (1974), and Tatsuo Miyajima's *Life Palace* (2013). And with the support of creative and cultural producers in-house, we could afford to take risks when inviting artists in the studios to create newly commissioned works for the show. This offered a curatorial confidence, knowing Somerset House could offer audiences completely novel experiences not available elsewhere, which would make our take on the well-known book completely unique and future-facing.

The exhibition also focussed upon how Somerset House Studio artists might help us recognise or 'see' the circumstances of the present more clearly. For example, in *Awake* (2019) the design duo Tekja scraped Twitter to map out the sleeplessness of three cities in the world and see just what it was that was keeping people awake, projecting this data on a layered series of scrims evocative of bedroom curtains. Inés Cámara Leret worked with scientists to create *Photosphere* (2019), an almost blinding (but very low energy) lightbulb lit by silica, mimicking the light of the sun. Iain Forsyth and Jane Pollard's *Somnoproxy* (2019) was an immersive sound work about outsourcing sleep which incorporated a dream machine. Alexandra Daisy Ginsberg's *Machine Auguries* (2019) consisted of a simulated dawn chorus of bird song

using a generative adversarial network, a form of artificial intelligence. In experiencing these works, light was absorbed by the retina of viewers' eyes, and so the thesis of the exhibition – that we are blind to the changes that technology is wreaking on us – became manifest in the afterimages (burned into the mind's eye).

Sleep Mode

The exhibition *24/7* was planned in 2018 and opened in October 2019. It closed exactly 2 weeks before the lockdown of the UK due to the COVID-19 pandemic in 2020. Little did we know that the pandemic would force the very rethink, and in some cases the reset, that the exhibition was encouraging – a reset of capitalism, of technology, of our social relations, and our relationship to place, even to parks and the birds singing in them. Most of these themes were present in the exhibition, particularly the last section, 'Reset'. As mentioned, feedback on the exhibition from visitors stated that there was an appetite to rethink technological dependence, and to be more mindful of how much time was spent in an endlessly distracted state, scrolling on a small screen: "The exhibition really got me thinking about how much time I spend connected".

I intended to curate a follow-on project from *24/7* – called *Sleep Mode* – made up of a smaller selection of just six artists, as a physical exhibition for Glasgow International festival, whose theme for 2020 was 'Attention'. I applied and my proposal was accepted. I planned to bring one of the newly commissioned works, *The Gospel According to Yawn* (2019) by Hyphen-Labs, to Glasgow, and allow for the project to develop further into a second version, re-using all the video clips collected from visitors to the Yawn photobooth at Somerset House. However, due to the last-minute cancellation of the festival, I asked Jonathan Reekie if we could host *Sleep Mode* online as part of a new digital offer from Somerset House instead.

The exhibition *24/7* had a significant online presence, with trailers produced by International Magic that were inspired by Douglas Coupland's *Slogans for the 21st Century* (2011–2014), and a series of podcast episodes with artist interviews, one for each theme or section of the show. These were part of the ambition for the organisation to build a new digital platform for highlighting the work of artists in the studios. During the pandemic, Somerset House's online activities included releasing exhibition documentation, as well as

live-streaming or releasing pre-recorded performances and events, and co-producing an online screening series called Transmissions. They also developed online commissions from studio artists. By joining the digital ambitions of Somerset House to my curatorial research into a new framing of works developed from *24/7*, including artists from the studios such as Alan Warburton, we were able to launch *Sleep Mode* online, timed for the end of the first lockdown, and coinciding with the summer solstice in June 2020.

Every technological change to how cultural content is consumed asks for a similar change in how it is produced and curated. The new behaviours engendered by consuming culture online during the pandemic accelerated the creation of new platforms or distribution mechanisms, such as the Somerset House's *Channel* launched in September 2022. Yet the commercial new media ecosystem transforms the conditions under which culture circulates more rapidly than most cultural organisations can respond (witness the rise of TikTok and short video formats for instance). Before the lockdowns of 2020, one could easily hold the view that mainstream curatorial practices had not kept pace, let alone worked with the unique opportunities that digital formats presented. For those of us in the field, it seemed as though all of the earlier brilliant efforts to cultivate online curating of online creativity were taking place in cultural spaces outside the mainstream, spaces that were artist-led rather than museum-driven. And yet the global pandemic forced the widespread adoption of digital platforms as the museum's primary mode of exhibition-making. In 2020, as so-called online curation went mainstream, did the more innovative practices of commissioning and curating online digital art lose their confidence? Such is the argument of Marialaura Ghidini in her chapter for *The Black Box Book: Archives and Curatorship in the Age of Transformation of Art Institutions*, in which she argues that:

> …the general focus of contemporary art institutions and galleries [has] shifted away from critically observing the characteristics of the technological context in which curating takes place[…]. The art world often responded uncritically to the limitations resulting from the pandemic by hurrying to be online […] a prevailing tendency in exhibition formats was that of replacing what was unreachable – the gallery – so that the white cube experience made its appearance on people's screen[s] in numerous variations. The temptation of replicating the experience of viewing art in isolation, instilling

> a sense of contemplation without interference from the outside world, gave form to viewing rooms, 3D rooms and sound-filled navigable spaces.
>
> (Ghidini, 2022, pp. 156–157)

Thankfully, my experience of pivoting the plans for *Sleep Mode* from a physical exhibition in an artist-led co-working space in Glasgow to an online offer, did not fall into this trap. In part this was as a result of the experience of guiding audiences from a singular experience to a collective one in terms of the way in which we had curated *24/7*. In part it was because Somerset House could, within certain technical limitations, embrace the experiment of curating an online programme differently to mounting an exhibition. So now, looking back at both exhibitions a few years later – considering how the world has changed and how museums and galleries have reconsidered digital programming and their online accessibility – there are a few curatorial lessons which could be shared from both *24/7* and *Sleep Mode*, which might give confidence to curators working with new digitally-inflected forms of art, both offline and online.

Curatorial lessons

The lessons that follow come from a learned understanding that there is what the artwork or exhibition needs, and there is what the visitor needs, and that all curating, whether online or offline, happens in the space in-between.

The first lesson concerns the confidence (a shaky confidence nonetheless) which came from curating a group exhibition in which we had a choice of supply chains between existing works and new commissions. This is a tactic I have used repeatedly in exhibitions that I have curated throughout my career (for example, *Untethered* at Eyebeam in New York in 2008, and *Biomediations* at Transitio Festival in Mexico City in 2013). When borrowing and displaying works from the history of media art, it may be the case that museums (or even artists themselves) have not had a chance to upgrade them since the point of creation or acquisition, and this may introduce delays in determining whether there is a need for newly remastered or migrated file types or new equipment. Display is always an opportunity for conservation, as well as preventative conservation, and it is crucial to request loans in advance to allow time for this collection

care, and to ground a complex exhibition narrative around confirmed key works. This was the case with the loan of Pierre Huyghe's video installation work from Tate (*The Housing Projects*, 2001), which was crucial to the exhibition's narrative and the visitor's experience. Due to its technical requirements, this work was earmarked to use arguably the best gallery space in the building, right at the centre of the exhibition, which other studio artists would have gladly chosen for their to-be-commissioned new works. Putting a different work there, had our loan request been declined, would have completely changed the narrative flow and direction of the exhibition.

Inevitably, as you bring art made 20 years ago into conversation with new commissions that use advanced technologies – for example Matt Collishaw's robotic sculptures *The Machine Zone 00:01* (2019) – there is a risk that the older works appear outdated, or their display technologies appear nostalgic (this was the case with Kelly Richardson's *Glow* (1998), which was remastered but always designed to be played on a cathode ray tube television). Creating a unifying experiential exhibition design ensures that viewers can give attention to those works one-at-a-time, and stay focused on the message rather than the medium.

Lesson two concerns the curatorial confidence required to give audiences what they expect or need, and the task of communicating that through curatorial staging and context setting. Too often curators do not consider the social dynamics in visiting an exhibition: are visitors by themselves or with friends? Are they talking as they go? Are they tired or pressed for time? Considering a viewer's own limited 'supply' of attention is crucial to curating a successful group exhibition, whether this is in physical space or online. For *24/7* we suggested for audiences an ideal visit duration, both on the website and when visitors booked tickets. Moreover, we listed runtimes on the labels for the time-based media works, instructed gallery attendants warn visitors about flashing lights or particularly loud immersive video installations. We also ensured staff were on hand to assist visitors in their experience of the more physically embodied works, such as Catherine Richards' *Shroud Chrysalis I* and *II* (2000, 2005), which required you to hand over your phone, have your body wrapped in a copper blanket by two gallery attendants, and lie on a glass table, insulated from the ever-present electromagnetic spectrum. We kept the gallery open all night and offered tickets allowing multiple entries over the course of one weekend. We encouraged people to

visit together as much as on their own, with or without the distraction of their phones. This is not to say that isolated viewing experiences in the gallery are to be avoided. With moving-image works, or works which require immersion with the use of a VR headset, for example, the ability to make the work accessible to more than one person at a time, architecturally and programmatically (by having multiple headsets available or allowing group booking, for instance), can ensure a curated choreography of experience.

Just as replicating an idealised empty white-cube space in the digital world is potentially problematic, so too is the reverse, as well as taking the often-individuated experience of scrolling online and putting that into a physical space. Online space is not always isolating of course. It is full of chats. However, it is increasingly experienced as an endless linear scroll through a media 'feed', as a series of things served up to you which are of varying duration. There was always a risk that visiting *24/7* could feel that way to a viewer, especially one who lost track of time in the long linear gallery space, despite our attempts to alternate the duration of viewing times for works on display. We made sure that the final section of *24/7*, with Alexandra Daisy Ginsberg's *Machine Auguries* work installed for viewers to sit facing one another for instance, drew visitors' attention back to one another and to their shared space of experience. To try and preserve some of the sense of communal viewing that *24/7* allowed, with *Sleep Mode* we had to respond to what viewers needed and expected from an online experience after having endured the first lockdown. For this reason, we staggered the release of the works across the week, and clearly alternated between those longer duration works for viewing online on your own time, and those works for shared online viewing at a predetermined time (a programme of shorter works live streamed, as well as a panel discussion held live in a Zoom webinar). We timed the release of the material online each day to act as a break within an endless Zoom workday, or to enable synchronous viewing (watch-parties on twitch.tv allowed chats in the same window). We reduced the amount of programming to one item per day across a single week. Once the live viewing experience was over, the item was left online for others to come back to later. We did not interview artists individually, as we had done in the podcast series which was designed for headphone listening, but instead held a group discussion in which audiences were able to watch artists making work as they talked, and to see around their studios, which was an affordance of doing it online.

Ioanna Zouli has reflected on the aftermath of museums widely adopting online programming to reach audiences during the COVID-19 pandemic and subsequent lockdowns. Her essay, "Internet Liveness and the Art Museum" (2022), reminds readers of the case of the first ever BMW Tate Live: Performance Room event back in 2012. Jérôme Bel presented a version of *Shirtology* (1997) which was livestreamed on YouTube in a broadcast style followed by a Q&A session with Nancy Durrant (an art critic for *The Times)*. The online audience was significant as the YouTube chat included some negative comments that the host had to gloss over during the broadcast. Later, one of the curators, Catherine Wood, reflected on the challenge for the museum to show live works because of the unpredictable nature of audience engagement. A decade later, Zouli has talked about whether the main concern of the curators was responsibility and care for the artists and the works, rather than the audience – "a desire to limit the risk of negative attention associated with this exposure on YouTube" (Zouli, 2022, p. 159). She goes on to consider the recent shift after COVID-19, citing in particular the suggestion from curators Victoria Ivanova and Kay Watson from the Serpentine Gallery that cultural institutions should engage with advanced virtual worlds and hybrid online spaces, such as Twitch (Zouli, 2022). Learning about the way audiences act and react in online spaces – and how to accomodate that – has to be a key curatorial consideration when programming in the so-called metaverse.

The hardest lesson, however, for which there is not an easy solution, is to balance the spirit of risk-taking and resilience needed to remain confident in moving forward with research into the content of an exhibition, alongside a sensitivity to the shifting research landscape. In my case, how to curate an exhibition (whether online or not) which attempts to situate understandings of technology and digital culture in a time of great change – when those understandings are constantly evolving because they are societally bound and context dependent – will always be difficult. Curating exhibitions about the effects of advancements in digital culture and technology on society will always require confidence when the cultural context of the digitised experience of our lives is advancing so rapidly, as is the case now with AI, for example. Holding Crary's book *Scorched Earth* in my hand reminds me that there are strong reasons not to support any further advances in digital technology given that its extractive capitalist infrastructures are harming our shared future on this planet.

Conclusion

> We become – with each other, or not at all.
>
> (Haraway, 2016, p. 4)

The two projects discussed in this chapter were experimental gestures but nevertheless represented a kind of curatorial activism aimed at making people more mindful about not only their individual but also their collective engagement with technology. My confidence came in part through having access to two different perspectives (which I've characterised here as supply chains), both of which essentially relied upon good work by artists. This meant we could offer to audiences on one hand the long view, and on the other hand foresight. Works made years before, that had stood the test of time, and with help of the institutions they belonged to (whether they are museums, commercial galleries, or artists' studios) could be conserved or upgraded, enabling them to be seen again in this new context. These works offered a longer perspective on our ever-evolving relationship with technology. New commissions transported viewers into the lived experiences of a possible future digital culture, highlighting the potential dangers of technological advancements such as automation or AI. The intended tension between contemporary artworks and historical technological objects also contributed to the temporal experience of *24/7*, altering the audience's reflections on the effects of technology over a longer societal time period than just their current individual experience.

The balancing act of considering the needs of the artwork/exhibition alongside the needs of the visitor/audience has emerged as the most important question of care, post-pandemic. We need to take care of one another and of the planet we share. When curating in the digital realm, confidence and care-taking are not always in alignment, but they do not have to be in opposition. Annet Dekker argues that curating within a technological landscape itself offers a kind of care (different from that of the bricks-and-mortar institution) by considering all of the protocols which determine the space in which the work and audience inhabit together as a

> set of socio-technical relations and negotiations that are necessary to produce and maintain something, acknowledging that its outcome may be unexpected […] knowledge unfolds between human

> and non-human subjects, whose ability to know is mediated by how they reach out and by the receptivity of the other.
>
> (2021, p. 49)

The demand for newness in the digital sphere asks for confidence. Risk-taking is required from both the curator – commissioning new artworks, the results of which are uncertain at the start of the process – and the visitor – experiencing new technologies in changing social contexts. Yet contemporary digital art exhibitions, whether they are online or offline, also ask for resilience from both the curator, in terms of their management of conservation concerns or complex installation requirements, and from the audience too, who adjust to demands made by an immersive exhibition experience upon their full body and all of their senses, or indeed upon their attention span. Caring for audiences also means offering a greater variety of interactive and accessible ways of engaging with the work of art – as we were able to do with *Sleep Mode* by streaming on numerous platforms, and by rethinking the scheduling of the online release of the exhibition components. We considered how the project would time into viewers' own moments of transition, and their need for moments of reflection about what they had just experienced, moving from lockdown and isolation back to social interaction (which was exactly the subject of the works *6 Months Without* (2018–2019) by Nastja Sade Ronkko (Figure 8.1) and *Country Diary* by Alan Warburton).

Related to this, care-taking and the demands it makes on individuals, has also come into question in conversations around museums' responsibilities for sustainably preserving digital and time-based media art. After borrowing works of art by Pierre Huyghe and Harun Farocki from Tate we learned that no new time-based artworks would be accessioned while time was taken to conserve all of the works which had been acquired already. A group of curators, conservators, and registrars from Tate came to see *24/7*. We discussed how to keep works of digital art alive, and what might happen to the new commissions which were having their first outing. All I could offer as a freelance curator was that I would continue to try and take care of these artworks intellectually (in my writing and in my scholarship) and where possible continue to document the changing lives of these artworks in partnership with the artists (which I have done by visiting subsequent exhibitions of some of the works that have gone on to be shown again). As part of my curatorial research into the exhibition

Figure 8.1 Nastja Säde Rönkkö, *6 months without*, 2018–2019. Durational intervention with performance, 2 HD-videos, text, and a seminar programme. Produced by Somerset House Studios, Finnish Institute London, and Wysing Arts Centre, UK. Supported by The Finnish Cultural Foundation and The Kordelin Foundation.

of AI-driven artworks, in 2024 I had the opportunity to commission a new site-specific edition of Alexandra Daisy Ginsberg's *Machine Auguries* for Bildmuseet in Umeå, at the same time enabling the artist and her team to restage the 2019 London version from *24/7* in a new installation version. Museums sharing 'ownership' of works, and

artists maintaining works which are otherwise licensed for display by museums, are all new models of care-taking for digital art. Going a step further, networks of care are increasingly being understood as offering a solution to sharing responsibility for the needs of the work of art in the context of an ever-changing technological ecosystem (Dekker, 2018). Reliance on a network can bring confidence that an individual might not have on their own.

In a talk about activist art in the digital realm, artist Joseph DeLappe commented that when activist groups have the confidence to move forward with a campaign it is called 'stepping off the curb' (DeLappe et al., 2023) – moving from your individually-held position on a topic to a collective one, in which you join the march in the street or join with other activists in blockading the street. Curators are usually understood as supporting artists to get their work into the flow of societal change, but they can equally support artists in their work of reflecting upon, or even slowing down, the effects of technological change. Curating can be an activist activity of care-taking and care-giving, balancing the needs of the artwork/exhibition and the needs of the visitor/audience, either individually or collectively. A group exhibition in which works of art can speak their own truths but also be read in context with one another, through a coherent programming structure, curatorial narrative, or exhibition design, makes a stronger argument. The activism analogy works here because having the confidence to 'step off the curb' and be in the crowd on the street, rather than isolated on the side as a bystander, will do more to create change. To use a different analogy, in ethnographic research, following Donna Haraway (2016), this is called 'staying with the trouble', which is also what curators have to do when working digitally while the capitalist landscape of technology development is constantly shifting, and not always for the better of all.

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Note

1 Somerset House is an independent, not-for-profit cultural heritage organisation. Situated in an historic building in the centre of London, the venue offers an active exhibition programme. *24/7: A wake-up call for our non-stop world* was exhibited at Somerset House between 31 October 2019 and 23 February 2020. The exhibition would not have been possible without loans of works from the collections of other museums, including works of media and digital art from Tate, and artefacts of technological history from the Science Museum.

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9 Postdigitality and Museum Confidences

Reflecting upon Jaad Kuujus' *Wrapped in the Cloud*

Kate Hennessy and Hannah Turner

Introduction

It is a winter evening in Winnipeg in 2020. A video screen inside the Plug In Institute of Contemporary Art is casting light across the gallery and out onto the snow on the street outside. The imagery being projected is called *Wrapped in the Cloud,* a digital animation created by Haida and Kwakwaka'wakw artist Jaad Kuujus (Meghann O'Brien). It is based on her hybrid Yeil Koowu (Raven's Tail) and Naaxiin (Chilkat)-style woven artwork *Sky Blanket,* which was completed in 2014 and exhibited internationally. The projection is not a digital replica of *Sky Blanket*. Rather, *Wrapped in the Cloud* begins with points of starlight representing the Pleiades constellation; it then proceeds to morph into point clouds, and then polygons that slowly take the shape of the woven robe in high fidelity. After this, the work transforms through a series of visual instances within the digital modelling process, before returning eventually to the constellation again (Figure 9.1)**.** Created in collaboration with a team at the School of Interactive Arts and Technology at Simon Fraser University, and making use of photogrammetry, three-dimensional modeling, deep speculative thinking, and dialogue between the artist and the producers (Conrad Sly, Reese Muntean, and authors Hennessy and Turner), O'Brien's *Wrapped in the Cloud* represents an instance of postdigital museum confidence that invites reflection from viewers on the politics of the material and the possibilities for the digital to support repatriation and return.

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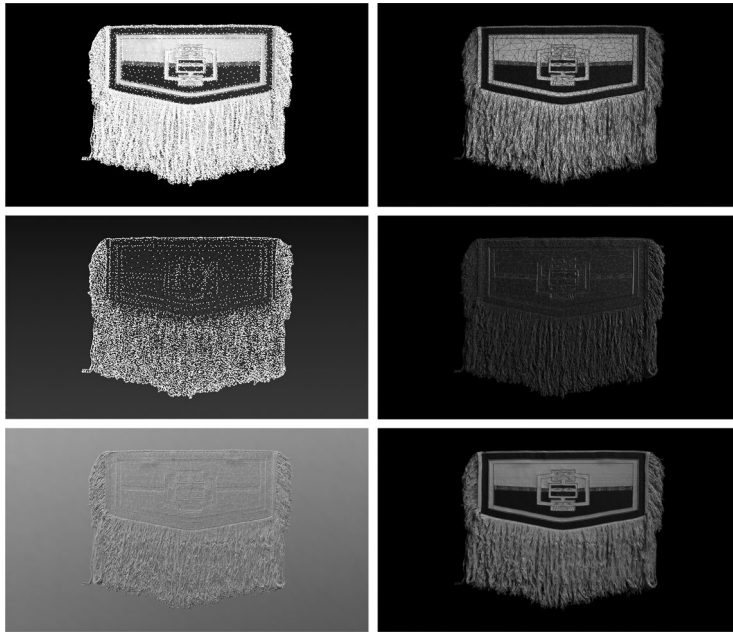

Figure 9.1 Jaad Kuujus Meghann O'Brien), *Wrapped in the Cloud*, 2018. Video stills. Produced in collaboration with Conrad Sly, Hannah Turner, Reese Muntean, and Kate Hennessy (Original image in colour).

In this chapter, we reflect on how and why O'Brien created *Wrapped in the Cloud*, including the desire for it to take the place of *Sky Blanket* in the group exhibition *Boarder X* (curated by Jaimie Isaac). We discuss how the media work has since been shown in a number of other exhibitions, supporting curatorial frameworks that articulate unbreakable connections between the material and digital, knowledge and practice, and ancestors and descendants through the past, present, and future. We position *Wrapped in the Cloud* as a *postdigital* contemporary artwork: a work that reflects growing curatorial confidences in new media technologies that are not primarily oriented toward the replication of belongings, but to possibilities for the digital to support expressions and practices of reconnection and reclamation, including decolonial curatorial work within both memory and contemporary art institutions. As two settler academics working with O'Brien and a

larger team, we have engaged with both the creation and the thinking about *Wrapped in the Cloud*. In this way we have come to see how this postdigital artwork gestures toward the concept of a *postdigital museum,* which Seb Chan and co-authors define as "one that faces complex challenges that flow across boundaries from inside to outside the museum walls, crossing cultures, geographies and identities in art and education while questioning the values, roles and responsibilities of museums" (Chan et al., 2019, p. 519). In this chapter, we reflect on how the making of *Wrapped in the Cloud* and its afterlife in exhibition represent an expression of postdigital museum confidence.

Making in the Postdigital Museum: *Wrapped in the Cloud*

Early in the Summer of 2018, we were approached by curator Jaimie Isaac, who was working with the artist O'Brien, to find a solution to a problem: how to display O'Brien's *Sky Blanket* in galleries on a long exhibition tour without sacrificing the work the blanket does back in the community. We came to this project with different backgrounds: Turner had been experimenting with three-dimensional printing and repatriation during her doctoral degree, and Hennessy ran a long-established lab that worked with visual methods in research and collaborative anthropology. Through our writing and research-creation work, we have been interested in the juncture between Western ways of collecting, exhibiting, categorizing, and displaying cultural heritage, and how these methods have obscured Indigenous rights and knowledge. The work of the Making Culture Lab (MCL) has extensively explored how multimedia tools (such as video, audio, and new technologies) can be used in collaboration with community to create new approaches to documenting and safeguarding cultural heritage (Hennessy et al., 2013; Muntean et al., 2015). Hannah Turner, then a postdoctoral fellow in the MCL, has likewise been interested in how new technologies replicate historical and colonial approaches to objectivity and control in museums and heritage institutions (Turner, 2016, 2017, 2020). Part of our shared work has been experimenting at this intersection and understanding how institutions can shift practice – a key part of museum confidence in digital work.

After our first introductions to the project through Jaimie Isaac and O'Brien, we began to work together as a team to experiment with three-dimensional-visualization technologies to reproduce a version of *Sky Blanket* for display in *Boarder X*. While we had originally considered

the creation of a surrogate replicate for *Sky Blanket*, we quickly came to understand that a 'three-dimensional printed' version was neither practical nor perhaps useful for the context of this exhibit. Aside from our environmental concerns about reproducing a cashmere and mountain goat wool weaving in plastic, we realized that directly replicating the blanket as is would be an insufficient way to visually represent the changing forms and technical processes that needed to happen so we could have a high-fidelity representation of the original blanket. We worked with O'Brien and with Reese Muntean, a PhD student in Hennessy's lab, to take 300 photographs that three-dimensional modelling artist Conrad Sly then stitched together using software to create a high-resolution digital model of the object. Along the way, we became deeply engaged with representations of *Sky Blanket* through the digital modelling process, with O'Brien guiding us all toward a creative expression of these instances of transmediation.

The final animated video projection, *Wrapped in the Cloud* leads viewers through different rendering passes of the blanket that emerged in the course of the production of the digital model. These digital models that feature in the video are all different versions of the image render that are needed so that the image presented on the two-dimensional screen feels and looks three-dimensional in relief. As we reviewed the work in progress, we began to see similarities in the visual depictions that give the images a sense of weight, body, texture, and light between those material qualities of mountains, stars, and wool. These visual similarities and the conversations that arose became the starting point for a collaborative envisioning of a sense of belonging that transcended physical spaces and could occupy multiple spaces and places. *Wrapped in the Cloud* could work in the gallery to raise awareness of the creative complexity of digital image making and its possibilities for supporting the repatriation or physical artworks and collections, while *Sky Blanket*, the original artwork, could be returned to O'Brien's cultural world. Curator Jaimie Isaac's decision to work with O'Brien to support the return of the original *Sky Blanket* represented a belief in this creative process as a way to bridge contemporary art and community life – an expression of postdigital museum confidence.

Our work together was grounded in discussions that included O'Brien's conceptualization of her original blanket, in particular how her weaving was a way to talk about western and Indigenous epistemologies of space and time. We reflected on how the unique properties

of mountain goat and sheep's wool change the way the weaving is done, how it lasts, and how it holds together. *Wrapped in the Cloud* – this human/animal/machine hybrid – is both a technology and an agent that brought our paths together and made it possible for the original artwork to return home. However, we did not foresee a global pandemic that would also make travel and visits to galleries and museums in physical spaces impossible. Over the past five years, we have seen *Wrapped in the Cloud* circulate in museum and art gallery spaces. As a digital artwork, it is relatively simple to install and circulate; at the same time, it has also contributed to generative curatorial theorizing of the unbreakable threads between the material and the digital, and other binary oppositions that define the borders of the museum, the gallery, and the archive. In the remainder of this essay, we catalogue some of the exhibitionary contexts in which *Wrapped in the Cloud* has circulated, and then reflect on its role in expressing postdigital confidences in museum and gallery spaces across Canada.

Sovereign Intimacies *(2020),* Intimate Textures of the Digital World *(2021),* A Thread That Never Breaks *(2021)*

Beyond its original role in *Boarder X, Wrapped in the Cloud* was featured in a number of group exhibitions in Canada, seemingly owing to its capacity to convey complex cultural, technical, and political entanglements in tradition, technology, art, ecology, relationships, and institutions. In the first of these, *Sovereign Intimacies* at the Plug In Institute of Contemporary Art in Winnipeg, Manitoba in the autumn of 2020, curators Nasrin Himada and Jennifer Smith connected works by Indigenous artists who are invested in relationship building as a part of their process, and "topics of friendship and intimacy, who are working to build a collective vision of a sovereign future".[1] In this exhibition, the digital video was described by the curators as deeply grounded in collaboration, and inextricably linked through practice to both the original woven artwork and to O'Brien's ancestors. They continue:

> *Wrapped in the Cloud* [...] reveals the layers that connect community and ancestral knowledge, representing the often inexpressible depths of love and culture. [It] reveals what our eyes cannot see when looking at the weaving. We are let into a sacred realm that shows us how every ancestor holds space in the constellations

> created through the process of weaving threads together. The warp and weft change the structure of the threads, making them stronger once woven together. Through collaboration with other artists, and community, *Wrapped in the Cloud* is stronger for the shared knowledge, care, and presence of each person and spirit that has had impact on the making of the weaving and the video.

These reflections resonate with our experience as a collaborative research group working together to support dynamics of return and O'Brien's practice (Bell et al., 2013), which prioritize relationality and connection across the material and the digital. As we collectively interrogated and harnessed the affordances of the digital medium, we witnessed how O'Brien's digital work functioned inside museum exhibitionary contexts, not as a copy or replica but as an expression of a practice of reconnection with community in the postdigital museum.

In a second exhibition titled *Intimate Textures of the Digital World* at SPAO Gallery in Ottawa, Ontario in the autumn of 2021, works were selected by curator Darren Pottie to show negotiations between physical and virtual spaces, sensory experience, and to "explore intimate conversations of metamorphosis, belonging, and manual labour while also discovering their place between reality and virtuality".[2] In this exhibition, *Wrapped in the Cloud* worked to express the curatorial aim to draw attention to ongoing connections between the physical world of *Sky Blanket*, including its deep ties to territory and mountain goat wool, and its digital manifestation.

As the COVID-19 Pandemic continued, museums and galleries were forced to provide alternative venues for their exhibitions, and many exhibitions were translated to online spaces. This was the case with a third exhibition, *A Thread That Never Breaks* (2021), which was installed entirely in Second Life, and curated by Lisa Myers and Sage Paul, featuring work by artists Joi Arcand, Angel Aubichon, Leanna Marshall, Caroline Monnet, Pacific Sisters, and Olivia Whetung. With the support of Skawennati and Jason Edward Lewis' research project, AbTec (Aboriginal Territories in Cyberspace), the initial physical plan of the exhibition was re-imagined in virtual form within the AbTec Gallery in Second Life. To access the exhibit, visitors needed to recreate themselves as an avatar, and after learning to navigate this virtual world, they could 'walk' up to the exhibit space and wander around, visiting different art pieces that had been translated to this virtual environment. A fully realized digital model of *Sky Blanket* 'hung'

in the gallery space, while *Wrapped in the Cloud* was played on a loop in a dark room at the back of the virtual gallery. Our team again collaborated with O'Brien and the AbTec Second Life developers to create an additional piece, titled *Everyone Says I Look Like My Mother* (2020). We used photogrammetry to digitize and virtually represent a newly woven artwork by O'Brien: a white 't-shirt' woven with mountain goat wool and cashmere, and with details coloured with wolf moss and boiled yellow cedar bark. As O'Brien says in the exhibition notes[3]: "*Everyone Says I Look Like My Mother* started as just a T-shirt and has evolved into an installation that considers the material and matrilineal origins of artistic practices like spinning and weaving in contrast to how commercially made garments are made. In the context of *Sky Blanket* it considers what makes an item of value: form, or material?"

The question 'what is valuable?' that O'Brien raises for postdigital museum work is an important one. Is it the form – in this case of the signification of protocol and lineage that is inherent in the way the blanket is designed and woven? Or, is it the material integral the value: the wool, the fabric, and the hard drives that support digital work? Where is the artwork when it seems to float in a digitally constructed space? Is the acknowledgement of the process of transmediation enough to support critical learning and engagement with visitors? These digital artworks supported O'Brien in keeping both the original *Sky Blanket* and the woven t-shirt for community cultural life, as well as her ongoing practice as a contemporary artist and weaver. Such postdigital exhibition contexts can communicate that there is different work that these digital versions do for the artist, curator, and visitor. This 'work' can include community reconnection and return, and the broader communication of awareness of these dynamics in, through, and beyond the museum walls.

Museum Digitality: Beyond Replication

The postdigital museum moves away from binary oppositions (physical/virtual, inside/outside, open/closed) and instead aims to demonstrate in practice how knowledge, materials, and relationships have continuities across institutional and technical boundaries. Digitality has come to mean many things for museums, including how digital objects circulate in media-rich environments, are manifested as physical objects through digitally-mediated fabrication, and are

variously seen both as useful links to existing objects in collections and poor substitutes for the 'real' things (Geismar, 2018; Isaac, 2015). Furthermore, three-dimensional printing or digital replication (that is, cast making using tools like photogrammetry or three-dimensional scanning) have also been used by institutions to make copies of belongings that have been returned to Indigenous communities (Csoba DeHass & Hollinger, 2018). While novel, digital facsimiles continue to replicate the dynamics of historical cast making and reproduction that have been a common part of anthropological and archaeological work for some time (Marsh, 2019).

In the context of this shifting world and the changing relationships between museums, technology, and Indigenous activism, many community-based or relational digital projects have emerged that demonstrate the kinds of care that can be used in web-based collections work (Glass & Hennessy, 2022; McMaster et al., 2022; Wemigwams, 2018). Some of these are based in museums or institutions, but many are the result of community-based initiatives that seek greater access to belongings through the process of digitization and online access to collections. These initiatives have shown that sharing and replicating images online is a highly political act, especially for practising artists, as images can circulate beyond their intended context, and outside of ties to community, history, and protocol (Hennessy, 2012; Huard & Moser, 2022; Roth, 2018).

While there is an ongoing narrative that digital replicas create important opportunities for access to museum objects, they can also foreground the political implications of why museums collect or keep objects at all (Iskin, 2022). As those communities of origin who have experienced the looting of their material culture have struggled for the right to self-determination, protection of traditional knowledge, and the return of land and belongings, the networked world has become an increasingly visual and highly mediated space that can both support reclamation and exploit new digital resources. The digital museum, constituted through diverse social and technical infrastructures, is therefore at the nexus of two contested spaces: the environmental and social implications of our digital and networked world, and the reckoning with entrenched colonial legacies (Geismar & Muller, 2022).

In their introduction to a special issue on reparation and visual culture, Adrienne Huard and Gabrielle Moser ask the question of their contributors, "how might aesthetic encounters offer us the place and

space to imagine creating reparation differently"? (Huard & Moser, 2022, p. 5). We echo this call to cultural institutions who hold cultural property and belongings. By assuming its guise as a postdigital artwork, *Wrapped in the Cloud* has prioritized relationality and experimentation over fidelity, thus enabling the mediated image to support cultural continuity. For example, when *Wrapped in the Cloud* initially replaced *Sky Blanket* in the *Boarder X* exhibition, *Sky Blanket* was brought by O'Brien into a number of ceremonial and performative events held along the British Columbia coast, where it could support cultural continuity and artistic innovation on O'Brien's home territory. O'Brien was able to return *Sky Blanket* home to the Big House in Campbell River for the Hilugwila Feast held for K'yuusdaa Rose Davidson, where O'Brien's grandmother and sister danced the robe. *Sky Blanket* was danced within a web of relationships that celebrate the self-determination of her community. For us, postdigital museum work, expressed through curatorial practice and artistic experimentation, can be part of a web of relationships with responsibilities that extend far beyond the exhibition space.

Notes

1 See Plug In ICA, 'Group exhibition: Sovereign intimacies'. Online. Available at: https://plugin.org/exhibitions/sovereignintimacies_2020/
2 See SPAO, 'Intimate textures of the digital world'. Online. Available at: https://spao.ca/intimate-textures
3 See *A Thread That Never Breaks,* January–July 2021. Curated by Sage Paul and Lisa Myers for Indigenous Fashion Week Toronto, co-produced by AbTeC. Online, in SecondLife. Available at: https://gallery.abtec.org/exhibition/a-thread-that-never-breaks/

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