The National Archives

Protecting digital cultural assets: a review of the export process and supporting mechanisms

A report on behalf of The National Archives

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Contents

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2. Commission and context

In 2017, The National Archives launched *Archives Unlocked* to implement a strategic vision for the future of archives. This included the work-flow capacity of the Archive Sector Development Department which is charged with overseeing standards and improvements, regional archives and networks, programmes and policy, and insight into collections and audiences. James Travers, Cultural Property Manager, was granted a sabbatical to review the cultural property offer at The National Archives, particularly in the face of digital developments.[1] To complement James' research, Rhian Addison was recruited as Policy Intern, funded by the AHRC. The UKRI Policy Internship Scheme is designed to provide PhD students with an opportunity to apply their research skills in a policy environment. Rhian was invited to produce a report to be presented for discussion to the DCMS Working Party on Manuscripts Documents and Archives (DWP), itself a sub-group of the Reviewing Committee on the Export of Works of Art and Objects of Cultural Interest (RCEWA) which advises Government on the export of cultural property. The report investigates measures operating to protect pre-eminent archive collections from export and makes recommendations of how these might evolve for digital cultural assets. Although intended to focus on digital archives, the report identifies challenges and actions that can be utilised across the sector.

It cannot be claimed that this review is a comprehensive assessment of activity in every institution and sector body. All content was accurate at the time of research however the sector is always evolving in relation to digital, so some of the recommendations may coincidently be implemented shortly after publication. The report reflects the author's personal findings and are not views of The National Archives.

3. Introduction

To date, the protection of cultural property of national importance has been governed by recommendations made by the Committee on the Export of Works of Art, known as the Waverley Report (for extracts see Appendix 1). The report details that many owners were 'ignorant' of the significance of archives leading to neglect but that, at the time of the report in 1952, the position was 'rapidly changing, and the importance of collections as the basis of study and research has become fully realised.' [2] The tide is once again turning with the galleries, libraries, archive and museum (GLAM) (or public) sector becoming aware of the significance of the next stage of archives: digital. The Waverley Report declared that those 'in charge of our public collections should look ahead as far as possible' to ensure the security of '*desiderata* before they come into the export market'. The Report specifies that should the system cease to be needed in this format, a review will have to be considered.[3] The evolution of digital technology prompts such a revision of the system in anticipation of digital archives coming on to the market.

Presently an export licence is required for the release of archives from the UK of 'any kind or medium' which are 50 years and older which are not the personal archives of the exporter.[4] That time frame is at an end with IBM having created the first 5MB hard drive in 1956, confirmation of the beginning of the digital era.[5] Policies must therefore be revised immediately to ensure the retention of digital cultural assets in the UK. The Museum Association identified the 'urgent need' to 'learn from other sectors … [and] to work together … There is a real risk of stasis in our collections if we fail to collect the present', which particularly resonates for digital.[6] Within the GLAM sector, archives are respected as leading the way on digital acquisitions and preservation.[7]

Archives are no longer physical nor limited to documents. Digital records are encoded and stored as 0s and 1s. They do not have a clear hierarchy but can be 'threaded discussions' that have different contexts and provenance which mean the data is ultimately 'more fluid and interlinked.' [8] Records can therefore consist of 'intangible bits, data and code … [which] requires nothing less than a revolution in archival practice led by disruptive digital archives.' Sebastian Gurciullo explains that the 'imperfect world of born-digital' assets requires experimentation to establish systems that will robust and adaptable for technological advancements.[9] At the 2019 Gerald Aylmer seminar, *Digital and the Archive*, the archive sector was called to embrace hybridity, to appreciate that digital is fundamentally different from analogue but provides a platform from which we can learn.[10] The National Archives is leading the exploration of 'disruptive digital archives' through *Archives Unlocked* which includes a digital strand to increase digital capacity in the archives sector, their preservation and their accessibility.[11] To class digital cultural assets as 'objects of high importance' the language and perceptions to the public and collecting institutions need to be changed now.[12]

This report will review the whole export system and the supporting mechanisms which are designed to encourage the retention of cultural property in the UK (see Appendix 2). The report will begin by defining a digital cultural asset, then consider how such items are seen under current policies. Consideration will then be given to how the GLAM sector is responding to born-digital collections. Recent action has predominantly promoted engagement with collections through digital, rather than the acquisition of digital cultural assets. This leads the report to discuss the disjunctions and challenges that GLAM will face if digital cultural assets emerge on the public market and are available for export. The report culminates in recommendations for sector action to pre-empt these issues.

4. Defining a digital cultural asset

Traditionally items that require export licences are referred to as 'cultural property'. It would therefore make sense to refer to 'digital cultural property', however this phrase is flawed as it has been argued digital items are not chattel so cannot be owned (see *7h. Intellectual Property*). This report will therefore refer to digital cultural assets, emphasising that the item has cultural value.

There are broadly speaking three forms of digital cultural asset:

1. Digitised surrogates of corporeal material, such as photographs of objects
2. Original digital art work, such as videos and music
3. Digital data or knowledge, such as databases, spreadsheets and websites

Formats 2 and 3 are born-digital material, meaning that their original format was created in a digital environment. According to the Waverley Report, archives 'are the raw materials' without which 'whole tracts of knowledge may remain obscure'.[13] Born-digital material falls into this archival category as to be researched comprehensively would mean assessing it in the original 'raw' form.

It is typical to think of digital assets as something publicly accessible and online, thus reducing the need for concern about an item being exported if it is already in the public domain. What can be accessed on the internet is only the tip of the iceberg. This report is concerned about the security of un-exported digital cultural assets, such as art work, archives, corporate records and authors' manuscripts – all items which can be digital in their original format. It is these unpublished items which need protection for good reasons, such as for data protection or cultural value.

Over the last six decades digital has become engrained in our daily lives. As Rt Hon. Matt Hancock describes, the digital world 'is breaking down the silos between cultural sectors, blurring the lines between disciplines'.[14] This means that anything digital could be deemed a cultural asset: data has replaced manuscripts as evidence of our society. Data processing will only increase, thus driving the demand for future archiving of digital assets. In 2017 approximately 1,500,000 people were employed in the digital sector in the UK.[15] HM Treasury reviewed the *Economic Value of Data* to reveal the global volume was 8 trillion gigabytes, multiplying by eight since 2010. Furthermore, the cross-border flows of data grew 45 times from 2005 to 2014. The report concluded that 'data-driven innovation' was central to dealing with the challenges of modern Britain.[16]

The archival sector has been evolving in response. Digital collections made up 1.7% of archival accessions in 2017. The 5.8 terabytes of data were a sharp increase from the 1.31 terabytes across 50 collections in 2016. Although some of this is a result of more focused recording, its acknowledgment reflects the significance of digital. Typically, these collections were hybrid; digital assets being listed alongside paper records.[17] Public engagement is also becoming increasingly digitally orientated. The DCMS *Taking Part Survey* revealed that 30.6% of participants engaged with culture over 2017-18, over half of which viewed digitised documents online and over a quarter searched a catalogue online.[18] With digital forming such a large part of the world economy and daily activity, policy needs to acknowledge the importance of digital culture as it will soon be an essential part of protecting 'national treasures'. In acknowledgment of such a societal shift DCMS adopted the revised title of the Department of Digital, Culture, Media and Sport in 2017.[19]

Forward-thinking Adrian Cunningham dismisses the need to differentiate between 'current' and 'historic records' as it prevents the 'integrated record keeping mission'. In other words,

all current records are actively part of history so should be treated as such now.[20] Thus digital cultural assets should be considered to form part of 'historic' collections. This is no mere transition from the physical to the digital but a 'matter of negotiating the ongoing evolution of digital lives' and capturing the evidence 'in all their manifestations.' [21] Action is required as technology could still be considered to be in its infancy now as we don't know where it will be in 50 years. As such, archives should adapt to accept digital cultural assets whilst the technology is understood and to allow the preservation of the earliest technology and data before it is too late.

5. Current export policy, supporting mechanisms and their limitations

Appendix 2 demonstrates that the mechanisms intended to support collecting institutions when there is a threat of export will not serve for digital cultural assets. Policies often vary in the dates and purposes for which they were established, so their content and phrasing need to be revised in tandem. Current export policies and two supporting mechanisms (acquisition funding and tax relief) will now be examined.

5a. Export licencing

To accommodate the large number of goods crossing UK borders and to ensure a maintainable, realistic system, the Secretary of State allows for certain goods to be covered by the Open General Export Licence, forgoing the requirement of individual licences. For archival material of 'any kind or medium which are more than 50 years old', that is not the personal archive of the exporter, and of any value (the lowest class is GBP £ zero), then the owner must apply for an individual export licence. In 2016, 262 manuscripts were exported, with a further 255 in 2017.[22] The process is overseen by the RCEWA. Outlining 'any medium' ensures that digital cultural assets could be considered archival material. As such, all digital material would require a licence after 50 years. On the other hand, without suggesting the breadth of possible mediums, it could also be argued that digital is not included and would be precariously judged on a case to case basis. Anything under 50 years is therefore vulnerable to export. The guidance explains:

> 'The system is designed to strike a balance, as fairly as possible, between the various interests concerned in any application for an export licence: the protection of national treasures; the rights of the owner selling the goods; the exporter or overseas purchaser; and the position and reputation of the UK as an international art market.'[23]

The final point is where digital cultural assets have the potential to be vulnerable: the most desirable situation would be for the UK to be leading the digital market from the outset. If digital formats are not taken seriously as cultural assets from the day they enter the open market place, UK collecting institutions risk being priced out later on. There would also be greater pressure on RCEWA to react to preventing the export of digital culture assets, thus undermining the reputation of the UK market.

Since a major review of the export of cultural goods in 1952, the criteria of the Waverley Report have been used to steer the issuing of export licences or enforcing export bars. This is a 'black and white' standard with which Expert Advisers can work, reducing

personal or market bias.[24] ACE have reported that some national treasures have been lost as a result of the standards, however the integrity of the system has been maintained to be fair to all parties. [25] Although the Waverley guidelines have been reviewed to avoid contravening other legislation, it has not been updated to reflect the evolution of collecting practices, thus making it not fit for purpose (see Appendix 1 for author's comments). A further challenge is that alterations have not been published as a single publicly available source (as the original Waverley Report was). Where information is available, such as the ACE guidance, it is not as detailed as the Waverley Report, nor does it indicate where the original Waverley guidance and consequent alterations are available to read. For this reason it would be desirable for an entirely revised version of the Waverley Report to be published so that the process and reasoning are transparent for the public.

The Waverley criteria for assessing 'objects' of national importance are:

1. Is it so closely associated with our history and national life that its departure would be a misfortune?
2. Is it of outstanding aesthetic importance?
3. Is it of outstanding significance for the study of some particular branch of art, learning or history? [26]

As a reflection of our current society and culture, archival digital assets have the potential to fall under Waverley 1 and 3 alongside physical archival material, whilst digital art could fall under Waverley 2. The accommodation for digital cultural assets ends here. ACE's guidelines state 'any medium' whilst the Waverley criteria uses the term 'object', an ambiguous phrase as digital is not a tangible format. Could a clear judgment be made based on the current phrasing? The Waverly criteria are meant to identify 'objects of high importance' but to class digital cultural assets as such, the language and perceptions of the public and collecting institutions need to be changed. At present the Waverley criteria privileges art and aesthetic value, particularly the materiality of an item, which means digital is overlooked.[27] The ambiguity of phrasing means it would be a challenge to identify what type of item and therefore what licence a digital cultural asset would sit under. The fine line of categorisation was evident in the 2014 tribunal of *HMRC* v *Executors of Lord Howard of Henderskelfe*. HMRC objected to the sale of Joshua Reynolds' *Omai* (c. 1776, oil on canvas) which had been classed as 'plant and machinery', and in doing so avoided capital gains tax.[28] Though the painting had been denied an export licence on several occasions, this case is evidence that the classification of a cultural asset can be ambiguous if legislation and policy are not explicit. These concerns of ambiguity are raised further when we consider that digital cultural assets may not be declared at all, simply bypassing a physical border by being transferred over the internet. (For further discussion see *7g. Security*.)

The Waverly Report and export application process require clear copies to be made of the item for the reference of the Expert Adviser, and for the deposit at the British Library when export is permitted. [29] In practice, copies are typically made because some parts of an archive did meet the Waverley criteria, but the asset as a whole did not and was therefore granted an export licence. The importance of these copies and their clarity were reiterated by the DWP, to such an extent that the 'clock did not start ticking' on the assessment process until the copies were satisfactory for clear assessment.[30] In the same point it was also noted that the Waverley Report pre-dated the Treaty on the Functioning of the EU 'which prohibited restrictions on the export of goods other than for the protection of national treasures' and the Human Rights Act 'which prohibits undue interference with

people's property rights'.[31] Consequently, copying cannot infringe on the rights of the copyright owner, meaning applicants can chose to not make a copy for deposit at the British Library (see *7h. Intellectual Property*).

Although the ACE guidance helpfully includes an appendix for how digital photographs should be provided, it does not allow provision for what format a digital cultural asset should be copied.[32] The absence of such guidelines demonstrates that the export process does not allow provision for digital cultural assets. Digital assets, by their often non-physical nature or data format, cannot simply be photographed. Separate explicit criteria are required to ensure that that the original format of the asset is not manipulated (see *7f. Copying - preservation and access*).

5b. Purchase Grant Fund (PGF) – Arts Council England (ACE) and V&A

The PGF have a broad remit for supporting collecting, including 'objects illustrating social and popular culture … documents and letters with good historical content' and 'writers' manuscripts'. [33] The PGFs vague phrasing in the main body of guidance means that the medium of the item could be digital, but could equally deter an applicant. The opportunity to apply for the acquisition of a digital cultural asset is only corroborated by the brief additional guidance on the acquisition of digital media which could be overlooked by the applicant (see *6bi. PGF* for further discussion). [34]

The additional guidance does not raise the financial consequences of acquiring digital material. As no one knows the reality of the long-term preservation of digital material applicants should be made aware, not only of duty of care and challenges of acquiring such an item, but the realistic financial commitment the applicant is making (see *7d. Finances* for further discussion on the unique expenses of digital). Furthermore, the PGF should encourage the applicant to factor these expenses into their grant application or hold a separate pot for such occurrences otherwise collecting institutions may be deterred from considering such an application.

5c. Other funders

There is no evidence of applications relating to digital cultural assets for the (now defunct) PRISM (Preservation of Industrial and Scientific Material) fund and the National Heritage Memorial Fund/Heritage Lottery Fund (NHMF/HLF) (now the National Lottery Heritage Fund or NLHF).[35] Although many funds do not promote the acquisition of digital cultural assets, they do encourage digitising archival material for preservation, such as the NHMF and the National Manuscript Conservation Trust.[36] The Group for Literary Archives & Manuscripts are conscious of the need for digital preservation, yet cannot financially support it as they have no subscriptions.[37] There is lack of investment or funding in the acquisition or preservation of born-digital material.

5d. Tax Relief: Acceptance in Lieu (AIL), Cultural Gifts Scheme (CGS) and Conditional Exemption

Tax relief encourages owners to retain their national treasures in the UK. This includes 'objects with national scientific, historic or artistic interest, either in their own right or due to a connection with historical buildings'.[38] As with the phrasing of the PGF guidance, digital cultural assets could broadly fit into this criterion as they could relate to one of the subjects. Yet in 2017-18 there were no cases for digital cultural assets via the Cultural Gifts Scheme or Acceptance in Lieu.[39] The AIL and CGS both use the wording 'object' meaning it could exclude pure digital material which are not tangible, undermining the

potential for digital cultural assets to be collected as reflections of modern and contemporary culture. Would an applicant or assessor interpret the criteria in a broad enough manner to include digital? Some simple re-phrasing would allow greater opportunity for digital cultural assets to be considered (see recommendation *8a(i)*).

To make matters more confusing for applicants, the AIL and CGS are on the surface extremely similar. Whilst the former offers the full value of the cultural property against inheritance tax when the item is sold after their death, the latter allows tax relief of up to 30% for individual donors against income tax over 5 years if they gift an item. Values are based on the open-market value. One of the drivers in establishing CGS was to encourage more contemporary items to be donated however the 2018 annual report reflects that there is very little difference from the media and age of material collected under the AIL.[40]

Owners may be further deterred from Conditional Exemption as stewardship costs are the owner's responsibility which could be far greater for digital collections than analogue as continuous maintenance is required (outlined in *7d. Finances*). For example, computer engineers spent four years rebuilding Stephen Hawking's voice synthesiser which must have been at considerable expense.[41]. The family are hoping to preserve his wheel chair and voice systems in a museum, but this hybrid collection is evidence of the challenges of preserving digital cultural assets. To some applicants the ongoing financial burden (which could be an unknown amount with changes in technology) may not be justified given the level of tax relief, thus deterring them from the process altogether, forcing the digital asset to deteriorate, be removed from its original context to a repository, or sold.

6. Examples of sector action: bodies and networks, funders, collecting institutions

These examples will outline that GLAM sector activity is prioritising public engagement through digital, more so than the acquisition or preservation of digital cultural assets. As a result, GLAM institutions are pursuing the acquisition of digital assets independently and behind the scenes. This is preventing consistent sector wide communication resulting in inconsistency and a duplication of efforts. Some of the topics mentioned will be discussed further in the succeeding section.

6a. Sector bodies and networks

i. DCMS

The largest bid by DCMS to encourage audience engagement with digital was the launch of *Culture is Digital*.[42] Numerous bodies are involved in the implementation of this initiative, evidence of which is provided throughout this report.

Culture is Digital formed a Digitisation Taskforce to enact change. Members were in part selected by DCMS and in part emerging from requests to join. The task force will be publishing an anniversary report around June 2019. To gauge an understanding of what action is required and how best to implement it, the task force commissioned The National Archives to produced a survey (January 2019) in which 66 institutions were represented. The majority of respondents were archives or museums, with over a quarter based in London. A fundamental question was asking participants to identify what they would define as 'digital assets'. Museums were more likely to think about digitisation in terms of catalogue data; whereas archives and libraries considered it to be more about the digital surrogate or representation of assets. Born-digital assets, of which this report is primarily concerned, were only mentioned in passing as part of a free text response. This emphasises that many institutions are still looking inwards at their own collections when they consider digital, rather than outwards at collecting practices and potential acquisitions.

In February 2019 DCMS closed a consultation for the proposal to introduce a legally binding mechanism so that owners of cultural objects found to be national treasures (over the value of £100,000) follow through their commitment to sell to a GLAM institution or relevant private purchaser as previously agreed.[43] This is evidence of the commitment to regularly review and adapt policy regarding the export of cultural assets. The proposal was welcomed by the National Museum Directors' Council (NMDC) as a legally binding mechanism would reduce the waste of public money and resources spent on campaigns for items later withdrawn.[44] It would also deter owners form making speculative applications and reduce the number of cases where sales are made subject to the granting of an export licence. The only notable objection was that a 'value threshold does not seem necessary' as the Waverley criteria do not take into account the value of an item. Ultimately a high value 'sets a problematic precedent of a work's value defining its importance' as it cannot take into account scale and medium. Archival items, for example, which may have greater national significance than a painting, may fall below the threshold due to their size, condition and medium. This is a further concern if we considered that digital cultural assets can be so easily copied, potentially reducing their value, however this does not mean their national importance is any less than that of a painting.

ii. Archive Service Accreditation (ASA) - administered by The National Archives

ASA is evolving to ask new applicants about the specific efforts being made towards digital.[45] Previously ASA had not accepted applications from digital only repositories. Although ASA questions and standards can be taken further, a light touch approach has been taken at this stage to reflect sector capacity and that there is not a flexible digital infrastructure that can be rolled out across the all repositories. The ASA worked with the Digital Preservation Coalition (DPC) to ensure that they did not create 'another new standard in an already-complex field.'[46] Ultimately the ASA are pursuing 'incremental improvement, strengthening Accreditation in areas not currently well covered by the programme, in a way which allows archive services to progress realistically whilst still requiring improvement.' In contrast to the efforts of ASA, the Museum Accreditation (administered by ACE) does not explicitly ask their applicants what their plans or current actions are for digital preservation.

iii. Arts Council England (ACE)

ACE have incorporated digital as a core strand of their activity:

- National Portfolio Organisations are required to have a digital policy and plan with ACE guidance.
- ACE will invest £1.1m over two years in a Digital Culture Network for expertise and forum for best practice. The Network will include delivering packages of support to help organisations build digital skills; look to partner with technology organisations to deliver training according to regional needs; foster relationships between funded organisations and the technology sector; and provide targeted support for leaders to increase the digital maturity of organisations. A pilot period has begun with Tech Champions beginning to spread an awareness of support for arts and cultural institutions.
- ACE with NLHF and others, will create a Digital Maturity Index for the cultural sector to benchmark their own digital activity. In addition, a Digital Cultural Code will be created for organisations to demonstrate a commitment to developing their own digital maturity and that of the wider sector.[47]

Although this activity is drawing awareness to digital, the emphasis is on visitor experience rather than the retention and preservation of digital assets. (See *7e. Knowledge and skills*.) This lack of awareness may well be resolved with the ACE's review of 'Museums, Collections and Cultural Property function and responsibilities'. In February 2019, ACE approached key partners and stakeholders to ask their opinions on whether ACE have the right skills and structures in place to respond to the changing needs of the sector. The review and implementation will be complete by November 2019.

In direct relation to the retention of assets, the Export Licencing Unit are being proactive by appealing to DCMS for funds in order to make the export application completely electronic, thus making the system more efficient.[48]

iv. Digital Preservation Coalition (DPC)

The DPC was established 'to secure our digital legacy' by enabling members to provide resilient digital content and consider the long-term challenges that they face. As well as providing advice on community engagement, workforce development, best practice standards and management skills, the DPC provides a comprehensive

guide, the Digital Preservation Handbook.[49] A particular asset of the Handbook is 'Digital Forensics', talking the user through the ways to analyse and secure data. This is the first publicly available open source guide identified by this report which addresses security challenges, forgery and chains of provenance. Another key tool is the Curation Costs Exchange (CCEx), a community platform which helps organisations assess the costs of curation through comparison and analysis. The platform can serve as an essential tool when the market value of digital cultural assets is unknown (see *7c. Value* for discussion).

The DPC are making active strides through public consultation, however it could increase its presence in the GLAM sector. Although many national collections are listed among their members, there seems to be a greater emphasis on Higher Education institutes than GLAM repositories of digital heritage. If the DPC attract more participants from the GLAM sector, they would serve as the ideal hub for communication across the sector relating to all aspects of digital.

v. Collections Trust

Collections Trust oversee Spectrum, the UK management standard for procedures in GLAM institutions. Adhering to Spectrum standards is a requirement of Museum Accreditation. Collections Trust provide a Spectrum digital asset management extension to allow for collections to consider the care of their digital collection, whilst also providing information on rights management. Although applicants for Museum Accreditation can opt to this use this digital assessment management, it is still not a formal requirement to consider preservation.

Collections Trust are also responding to the needs of digital collections more broadly. Their platform *Digital isn't different* is a hub for digitisation resources. It also echoes the work of *Culture is Digital* Digitisation Taskforce who commissioned a resource page 'What does digitising collections involve?' (forthcoming) with Culture24. These two websites could serve as central platforms for the whole sector if they work together and are promoted across the GLAM sector.[50]

6b. Funders

i. Purchase Grant Fund (PGF)

The only notable acknowledgment of the significance of digital from established acquisition funders is by the PGF. The additional guidance provided for the acquisition of digital media asks applicants to briefly consider the format of the acquisition and its uniqueness, as well as the future preservation requirements and whether the museum has a Digital Asset Management Plan.[51] Though is it admirable the PGF have addressed the subject, the guidance could be strengthened. It encourages institutions to think about what they need, but without providing suggestions of how long-term care could be financed. Without knowledge of how to care for digital cultural assets, such as the full financial impact of ongoing maintenance and preservation, institutions are not making a fully informed judgment that the guidance intends to support. (See *7d* for further discussion.)

ii. The National Lottery Heritage Fund (NLHF) – formally the HLF

To build the digital capacity of the sector NLHF are funding a £1m campaign. In addition, NLHF's Business Transformation programme are making digital a key feature, particularly with a focus increasing staff skills. [52] Much of NLHF activity is in cooperation with other bodies such as ACE. The streamlining of the NLHF funding process for greater accessibility increases the possibility of interpreting funding guidelines more broadly to acquire digital cultural assets. However, emphasis is still on heritage being 'historic' thus providing a potential barrier for the acquisition of contemporary collections.

6c. Collecting Institutions

i. British Library (BL)

Alongside The National Archives, the BL is one of the largest and most established holdings of digital archives in the UK. The BL's digital collection includes born-digital material, such as the UK web archive, and digital surrogates, such as digital photographs of manuscripts. A large proportion of the collection is acquired by non-profit legal deposit and the remainder of the content is from voluntary deposit. [53]

In 2018 the BL underwent a review of their digital preservation capabilities in relation to Non-Print Legal Deposit (NPLD) collections. The review found that the BL's digital preservation policy is 'exemplary'. The report also acknowledged that the preservation of NPLD collections on behalf of Legal Deposit Libraries are a challenge to maintain as the 'resources, skills and technology need constant renewal'.[54] The BL's Digital Preservation Strategy endeavours to have end-to-end work flows in place by 2020 for all digital material, implementing robust reporting mechanisms to provide evidence of preservation. [55] As part of preservation, another priority for the BL is to replace and enhance the current technical repository infrastructure. The BL have also commissioned research into the importance of digital archives, particularly placing emphasis on the greater need to work with the public and researchers to see the value of personal digital archives to support and encourage digital preservation from the point of creation.[56] Furthermore, BL Labs provides resources to promote innovative ways for researchers to engage with the Library's digital collections and data. The project not only teaches researchers about the possibility of digital collections and engagement but emphasises the research value in preserving and investing in digital collections.

ii. The National Archives

As a Government expert in the management, preservation and use of information, in both physical and digital formats, The National Archives is in a unique position to directly shape policy, thus benefiting wider archive sector. The National Archives are leading on the active distribution of knowledge and support for the acquisition and preservation of digital archives. As one of 'a handful of fully functioning digital archives in the world', The National Archives Digital Records Infrastructure can securely support metadata to an archival standard. The National Archives are currently a first-generation digital archive, whereby their methods mimic those taken for physical records. Their vision is to become a second-generation digital archive by disrupting 'archival practice from its first principles.'[57] The National Archives have pledged to work proactively with the sector to set standards and make digital more accessible, whilst also regularly adapting to changes in legislation, such as the 20-

year rule.[58] To accommodate such changes in their working practice, The National Archives launched *Archives Unlocked,* a significant strand of which is digital capacity, embedding the mindset of a new format of archive across the whole organisation and into the wider sector. Beyond *Archives Unlocked,* The National Archives have made active moves to expand and share their knowledge, understanding, and activity around digital archives:

- The National Archives have signed a memorandum of understanding with Jisc to establish a frame-work of cooperation. This includes training collections staff with digital skills. [59]
- The National Archives have provided digital training to AHRC Collaborative Doctoral students to make them aware of the significance of the digital humanities and how using digital archives and software can benefit research.
- The National Archives have delivered seminars about digitisation which has helped inform their understanding and provide evidence of sector need.[60]
- The National Archives launched 'Bridging the Digital Gap', an NLHF training programme to create 24 paid technical trainees in archives around the UK.[61]

iii. V&A

The V&A have launched the *Content Data Object* research project to 'articulate ways in which museum practice and international cultural property law could adapt to accommodate and enable meaningful access to conceptual, ephemeral and immaterial digital artworks.' [62] The research project is taking a practical approach of workshops to consult with industry stakeholders to inform policies for the V&A's digital collections, particularly 'overcoming some knotty problems of access, interpretation and even definition.' Ultimately the project will scope the IP of an object, its place in cataloguing and collections management, its heritage status, artistic intention and audience experience.

iv. Tate

Tate are collecting digital archives and born-digital collections though they admit that, like the rest of the sector, they are still finding their way and establishing systems of best practice.[63] This includes the demand for 'a more sophisticated system with superior, security, capable of performing preservation actions and enacting preservation plans'. Tate's Time-based media team are researching the use of programmes such as Archivematica, Binder and Preservica. In addition, the team are in discussion with a consortium of London-based archives which may wish to adopt one of these programmes. The key long-term aim is the introduction of digital preservation system across Tate. Tate led a digital preservation project, *Pericles*, to ensure that digital content remains accessible and understandable, 'to consider the impact of change on different types of digital object, taking into the consideration the impact of the specific contexts of these digital objects.'[64] (It is interesting to note their use of the noun 'object' which undermines digital not being tangible.) Tate are also part of Matters in Media Art (MMA) along with MoMA, New Art Trust and SFMOMA. The ongoing project, which started in 2004, is in its third phase of examining challenges surrounding digital media. MMA provides practical internationally agreed standards of the handling, installation and care of time-based media works. [65]

Most recently Tate have been awarded a major grant by The Andrew W. Mellon Foundation for a programme of research to develop models for the conservation and

management of contemporary works of art. Grounded around six cases studies, these works that will be investigated exist in multiple formats, with a particular focus on time-based media and digital art. As such, Tate's research could provide greater clarity for the sector about not only the care of hybrid collections but assessing their value.

v. Rhizome

Rhizome[66], part of the New Museum, New York, have been at the forefront of digital art since the mid-1990s. Although Rhizome are not in the UK, they are an institution from which we can learn more about how they work with policy makers, export and loans. Rhizome have created platforms and tools, such as ArtBase for archiving digital work, open source software, and *Colloq* for capturing social media content.

vi. Science Museum Group (SMG)[67]

The Science Museum Group are honest about the being at the digital starting line. At present they are navigating their way through recently acquired works which are a blend of hardware and software. Jack Kirby, Group Head of Collections Services, stresses that digital collecting practices cannot be ignored. Digital art work which was commissioned a decade ago for SMG galleries are now being accessioned as collection items rather than gallery props, whilst the archives are also acquiring pieces of born digital material. Most importantly SMG are reassessing their collecting policy across all five sites as the National Railway Museum is going through ASA. Kirby explained that a key question is what is SMG trying to preserve? For example, the collection does contain video games, but they are not active items at present.

Kirby raised SMG's major concern: is anyone collecting the software required to support digital assets in UK collections? If not, there is a gap in the national collecting remit. Most significant to this report is that Kirby questioned the relevance of the Waverley criteria to SMG's collections, noting that without the mutual support of mechanisms, such as funding and digital knowledge, digital cultural assets could easily be lost.

7. Disjunctions and challenges of export policy and supporting mechanisms

To secure *desiderata,* as the Waverley Report describes, policy has to anticipate future challenges that may be faced before technology has necessary developed.[68] Having considered policy and GLAM sector action to date, we can review the disjunctions in the supporting mechanisms surrounding export policy. From the challenges identified recommendations are then made. At time of publication there is no evidence of digital cultural assets having already slipped through the export net. First, this may be due to a lack of reporting or awareness that they have been exported over the internet; and second, that surrogates deposited with the BL are restricted from view for seven years (unless the owner consents) so the sector has not been informed whether digital assets have been exported.[69] Regardless of this seven year blind-sport the sector needs to be proactive about protecting digital cultural assets from export in the future.

7a. Brexit

As with the movement of any goods across UK borders, Brexit will have an impact on the export of cultural assets. Many of the policies and legislation relating to export, copyright and internet security are reliant upon mutual EU support.[70] The impacts of Brexit are not yet evident but, in the meantime, export control is being considered by a dedicated team within DCMS. In addition, ACE have published a report considering the impacts on the arts and cultural sector, however export licences are only briefly mentioned.[71] A further consideration is that the majority of archival exports are to outside of the EU. Will the UK's exit from the EU change the international market for archive and digital material?

7b. Authenticity

A central component of the discussions around digital cultural assets is the ontology of the item and its 'authenticity'. This is particularly relevant in relation to copying, value and security (see *8c, 8f and 8g*). What makes an item a piece of art or archival material? Can born-digital material be considered authentic and a 'national treasure' if it can be copied? When multiple versions exist, which is the authentic? And are digital surrogates, such as a photograph of a painting, as equal in importance to the painting itself, or is it just context?[72] Digital assets are stored as code, so are produced in its original form each time the file is run. Thus, when a copy is made both files are identical. Analogue copies on the other hand, such as film, would degrade in quality with each generation. Degradation places an emphasis on the importance of the 'authentic' item as well as providing 'an informal policing mechanism' which wouldn't exist with digital.[73]

So how can we police the authenticity of digital items which are inherently identical? Ideally one form of Persistent Identifier (PID) would be used across the GLAM and commercial sectors. A PID is a unique identification code attached to a digital item in an agreed location.[74] Multiple PIDs exist. A simple solution at bit level is to use hash values or checksums to assess the authenticity. These are often thought of as finger prints for files. The contents of the file are processed through an algorithm which produces a hash value, unique to the contents of the file. If the contents changes, so too will the hash value. This allows for comparison of hash values which means GLAM institutions could assess within their collections what has been altered.

The most recently marketed hash value technology is blockchain. Blockchain is a cryptographic token which is unique to a single item. The creator or verification panel register the essential information of an item, details of which are then added to a blockchain. When the item is sold, the token in transferred with the item and the

transaction is digitally recorded on the blockchain, meaning every movement becomes part of the object's permanent record. The blockchain is encrypted, so every time a change in ownership occurs a network of computers validates the transaction using algorithms. If changes are made to one of these computers, then the system rejects the transaction. In addition, the blockchain can be used to encrypt digital files and the token can act as the key. Thus, only the owner can view the encrypted item.[75] Major concerns have been raised in the GLAM sector about the inefficiency of blockchain technology as it uses huge amounts of energy - as more people invest in blockchain, the more problematic its environmental costs will become.[76] Furthermore blockchain does not guarantee the trustworthiness of the records so would be entirely reliant on the creator of the digital asset using blockchain as soon as the item was 'born'.[77]

Blockchain projects have started to be developed for the arts and heritage sector, such as Monegraph, a public platform which allows anyone to register creative works, 'helping artists claim the value of their digital art work'.[78] The National Archives are working in collaboration with the University of Surrey and the Open Data Institute to develop their own blockchain system. ARCHANGEL is a decentralised system which stores transactional data through peer-to-peer distribution with multiple archives. The system is reliant on collaboration from other archives to create a consortium which can approve the creation of a block - a permissioned blockchain. Decentralisation ensures the integrity of the documentation as it removes the reliance of working with a 'trusted' third party, further instilling trust in memory institutions. Systems such as ARCHANGEL can be used to defend the authenticity of a record during the process of preserving the records (curation) and upon their release (preservation). [79] An additional advantage is that ARCHANGEL is not as energy intensive as the blockchain is built with permissions, rather than data mining.

It is clear that the GLAM sector needs a PID which uses distributed ledger technology – a system of tracking items on a decentralised system. ARCHANGEL is still in its user testing stages at the national archives of Norway, Estonia and Australia, however there isn't anything to say that the programme couldn't be used throughout the wider sector. ARCHANGEL is built independently but can incorporate a preservation system so that they work in unison to form an integrated automatic process. ARCHANGEL is intended to be rolled out across archives as the more institutions involved, the more reliable the system is. Whatever PID the sector chooses to use it needs to ensure that it can verify the item (as far as its provenance can be known from when it entered the system) and for it to be decentralised so that no one body, sector, or country is solely responsible for it.

In the meantime, many archives are reliant on an archival description model for digital assets, adding any details to a notes field of migration, reformatting or copying since acquisition.[80] In 2006 Salman Rushdie sold his hybrid archive – manuscripts and computers - to Emory University, Georgia. The digital files had to be converted to accessible formats where the original software no longer exists. To retain the authenticity of the user experience, emulators were created so that 'files can be modified, directories can be deleted, and games can be played.' No changes are saved to the data itself as the emulated environment refreshes each time it is launched. Although the intention is admirable and an interesting user experience, emulators can fail to exactly replicate 'the computing environment or media experience, thus devaluing the emulated environment.'[81] These rudimentary approaches may be suitable once the item is acquired but cannot be reliant upon for judging authentic or provenance in the context of export.

7c. Value

The greatest challenge in protecting digital cultural assets is how to assess the items value. Travers has identified that currently there is no active public market in digital archives, a fact which undermines the guidelines of the Waverley Report which requires valuations to be fairly based on market trends.[82] How can the true value of a digital cultural asset be gauged when the market is so young? Travers poses further questions:

> 'A hybrid market of digital and analogue records will exist for some time but when digital takes over, will their tangible cultural value decrease? Could archives lose their relatively recent status with government, grant awarding bodies owners and custodians as valuable cultural property alongside museum objects and paintings? Will they then simply become data, which owners and creators are obliged to acquire and maintain for their own resources without the support of grant awarding bodies and the tax system? Alternatively, will fresh mechanisms and funds for trading and securing valuable historical data become available?'

To date, many digital archives have been bought by private sale, such as those of Germain Greer and Salman Rushdie.[83] The lack of public market forces comparison to other markets, such as digital art. However, does the cultural value vary between digital archives and digital art? Are the two markets entirely separate or closely related if they both fit under Waverley criteria? Kathryn Sutherland explains that we have had a material turn because digital has 'brought in a deeper understanding of materiality in text because the digital can perform the material text in a way that print couldn't.'[84] Following this argument a digital layer only adds value to a manuscript. But how does it apply to a born-digital item where no manuscript exists? With a hybrid collection, is there a risk the physical items are retained, whilst the digital items are granted export if they are considered to have no value?

A variety of stakeholders are discussing how to judge value and knowledge of intangible worth, and thus financial planning around the preservation of digital cultural assets.[85] The DPC warn that:

> 'Although it is common to refer to digital materials as 'digital assets', this metaphor is misleading. Unlike books, paper archives, or artwork it is difficult to calculate the value of digital assets in financial terms, so to accountants … 'digital assets' are 'intangible assets'. In our generation, it is all too easy for senior management to view digital collections as a liability; investment in their long-term preservation as specious.'[86]

HM Treasury also produced a report on *The Economic Value of Data* for UK industry and the research value of the data for future use. [87] In essence, the report justifies the retention of data which would form digital archives. More specifically for museums and archives, Freda Matassa's *Valuing Your Collection* allows the user to understand the difference between value and worth, influencing factors in determining the value, and the consequences of assigning monetary value. This review was relatively recent in 2017 yet does not discuss digital cultural assets, of which there so many different variables compared to physical objects and should have warranted a chapter in itself. Digital is merely alluded to as technology overlooking the value of born-digital material.[88] Valuing digital assets is not as simple as the approach Matassa takes. For example, the V&A have made a commitment to acquiring advancing technology including Apple computers and devices. Though not expensive acquisitions, these cannot be valued in a traditional sense as they are acquired for their design value, not their uniqueness at time of production. The

closest appropriate guide for valuing digital cultural assets is the CCEx, however this applies to entire collections (see *6a(iv) DPC*).

Identifying the value of a digital cultural asset is important for a variety of reasons:

- For a bench mark to be established allowing for regulation of the public market.
- To allow collecting institutions to make judgments as to whether pursuing a digital cultural asset is financially worthwhile.
- For cyber-insurance purposes, even if it is an open access collection.
- Dependent on the licence and category which digital cultural assets sit under, a value will ensure that DCMS have the authority to prevent the export of a digital asset when determined by age and financial threshold.[89]
- For funders to know the value of the research lost if they don't support the purchase (which is in line with Waverley criteria 3).

The Waverley Report requires a copy (or surrogate) of exported material to remain in the UK for research purposes.[90] Copying introduces the risk that without 'adequate controls' the digital cultural asset would reduce in value.[91] How would an institution ever know if copies have been made before the acquisition was made? If copies were introduced to the public market it could collapse (or never be established) due to so much uncertainty. The Waverley Report argues that knowledge of the location of the original and any copies are of great importance to the value. [92] Copying risks only part of a digital cultural asset being retained and could therefore would be out of context for future researchers, thus placing value on the unabridged original. But if digital cultural assets can be replicated easily, does it matter which one is the original if it can be, in principle, accessed anywhere? (See *7f. Copying - preservation and access*, *5a. Export licences*, *7h. Intellectual Property* and *7b. Authenticity* for further discussion.)

7d. Finances

> '*Money turns out to be the major problem facing the future of our digital heritage*'
> David Rosenthal[93]

A common factor delaying the evolution of digital capacity is the lack of financial stability.[94] Local archives are taking in three times more digital assets than national collections due to the more restrictive collecting policies of larger institutions.[95] It is, however, the nationals which have the knowledge, space and available resources to make pro-active changes in digital for the GLAM sector. A sector survey (across 56 international institutions) found that many are struggling to define success around digital maturity or that they aren't always being measured. The most significant finding was that funding and remuneration are short-sited which are consequently stifling digital evolution. Full maturity won't happen until the there is significant investment in digital skills across the sector.[96]

It is widely acknowledged that companies and economies are 'fuelled by data'. Yet these same companies are attempting to do more on fewer resources, side-lining digital preservation. This means that '[g]iven a false dichotomy between real costs now or supposed benefits in the future, it is easy to understand why too few institutions have invested properly in digital preservation.'[97] The biggest challenge is making it clear to senior staff that the costs of digital preservation are unique and go above and beyond those required for analogue. It is often overlooked that the costs of digital preservation are more than just storage. Whereas the costs of stewardship have a long-established history and standard of care for analogue collections, it is important clear guidance is provided for

digital items as it is still such a new concept. For collecting institutions to be prepared for digital cultural assets, they need to be able to financially accommodate at minimum:

- the cost of the initial acquisition and related costs for the application process
- digital archivists or the training for current staff
- conservation/restoration and ongoing preservation
- transport
- installation
- cyber security support (ongoing)
- server and hosting capacity (ongoing with maintenance)
- 'Licence to use' charges and other associated copyright costs (ongoing)[98]

When managed efficiently, preservation costs can decline over time as collections which are added to regularly will be able to spread the costs out. The most significant cost is fixed resources, such as staffing which can account for 60-80% of the total budget.[99] An example of the costs of long-term preservation of digital cultural assets it the Germain Greer collection at the University of Melbourne Archives. Funding for the purchase included staff, materials and digitisation services. In 2017, however the archive had to abandon their attempts to use the an open-source digital preservation system, Archivematica, due to a lack of dedicated support and resources.[100] There is similar financial uncertainty with long term loans.[101] Would archives realistically want to take a digital cultural asset in the first place if they are aware of the infrastructure and costs required, only for them to be as risk of withdrawal?

7e. Knowledge and skills

The acquisition and preservation of digital archives is reliant on the hybrid skills of archivist and digital expert, producing a new form of specialist knowledge. The *Digital Lives* Research Project (2010) found that 'there is little effective awareness of the technical concerns that relate to digital preservation'.[102] The report was based on interviews with twenty-five individuals from literary, artistic and scholarly fields, discounting any consideration for the need or current existence of specialist knowledge in collecting institutions. The ACE and Nest Digital Culture Survey highlighted regional variations in access to digital skills, revealing the need for a national approach to be adopted.[103] DCMS also reported in *Culture is Digital*, that organisations feel restricted by a lack of infrastructure and resources resulting in a 'fragmented approach' at present, and that ultimately it is digital leadership which is required to have a significant impact on institutional behaviours.[104] Where knowledge and skills are lacking, The National Archives are assessing how they can assist archives in the transfer to digital. The National Archives pledged to invest in digital skills citing evidence provided by the Parliamentary Committee on Digital Skills that the UK will need at least 300,000 further recruits by 2020. It is these 'digital makers' that archives need to recruit to overcome the challenges facing digital collections.[105]

To democratise the archival process, Art360 launched their own free mobile app for archiving art, 'placing the power in the artist's hands' and presenting a model of best practice. The app essentially provides the artist with the tools and knowledge for the basic requirements of preservation, ensuring archives are in a usable state for when they are ready to be transferred.[106] Such initiatives can make transfer process more efficient, however knowledge is still required within the collecting institutions in which the archive would be deposited. What is evident is the GLAM sector cannot improve digital knowledge and skills organisation by organisation. As Jack Kirby from the Science Museum Group explains the 'skills are expensive, more expensive than traditional curators. It doesn't make sense for everyone to develop different technological solutions to the same problem.

This doesn't mean that there is one solution, rather it means it needs to be discussed and funding mechanisms for the sector need to work together in a way that it's not used doing.'[107]

Assessing the condition of a digital asset is a unique skill and requires technical knowledge. For digital cultural assets to be assessed under the Waverley criteria, export licence applicants are required to provide detailed contextual information, provenance and photographs. Guidelines go as far detailing how to photograph a clock, but at no point considers how an Expert Adviser is meant to assess a digital cultural asset from an image when the asset could be a vast set of data files.[108] So what format can assessment of digital cultural assets take? How can the stability of hardware and software be judged by images? Born-digital items are inherently interactive so would require the Expert Adviser to have private access over the internet (such as a secure platform with cyber-security which requires login) or visit the item to assess its true value.[109] The same issue arises for temporary export licences when the Expert Adviser needs to comment on the objects fitness to travel.

Furthermore, the GLAM sector is lacking a standardised way of condition reporting digital, particularly born-digital collections. The absence comes in part to understanding the extent of the technology in collections (which can vary greatly), the scale of the collection (which would be costly with larger collections) and understanding what the condition report would be achieving. The process, scale and reoccurrence would have to be clear as the condition reporting process would be very expensive to do.[110] Some institutions, such as Tate, are using a deposit form to catalogue digital material which includes description of material, transfer procedures, and access and rights. This is still not as transparent as a traditional condition report (say for a painting) as it does not actually address the condition, such as whether files are corrupted, or hardware is damaged, though observations can certainly be added by the staff member.[111] Without clear access to the digital asset and condition reports, the process is entirely reliant on rough judgment at a distance and the knowledge of the Expert Adviser.

Most pressing to the export process is who has the knowledge and skills to qualify as an Expert Adviser? The Waverley Report requires an Expert Adviser from an established list to assess the item proposed for export.[112] Neither a definition of a digital Expert Adviser nor a list of such individuals exist to date. Establishing who is qualified is essential as the decision to grant an export licence is ultimately made by this one individual, so their knowledge and the guidance they follow must be transparent with minimal room for interpretation.

7f. Copying – preservation and access

> *'Digital Preservation differs from traditional conservation and practices in that threats to content longevity, typically manifest earlier and from multiple different sources.'*
>
> British Library[113]

At this time, there is no long-term guaranteed preservation solution for digital archives. Preservation and copying are working hand-in-hand: digital surrogates are being made of physical objects, and collecting institutions are copying data into useful, accessible formats. (It must be noted that preservation systems have been developed beyond the simple concept of copying.) This requires professional knowledge to prevent corruption among other problems.[114] As previously mentioned, the Waverley Report requires that copies of the item remain in the UK.[115] Assuming that owners of digital cultural assets are not infringing on the copyright of others, it would be relatively easy to copy the digital

cultural asset. As such, why would any digital asset ever be stopped at export if research copies were so easy to make? Would any resources be put towards an item if the public were not being deprived of knowledge or the assets value? This is of course heavily dependent on conclusions of authenticity (see *7b. Authenticity*). Copying would mean the eventual loss of the authentic original regardless of it being done in a museum or archival context. But is it more important to maintain the original, or maintain accessibility to its contents and functionality? Video and film are already considered by many to be outmoded and its survival is dependent upon collecting institutions making copies.[116] This raises two questions: will a public market for digital archives ever appear if technology is advancing so quickly? And if so, when will the concept of digital archives be outmoded and how does this impact preservation the future? The ethical issues of copying are being discussed on an international platform by ReACH, Reproduction of Art and Cultural Heritage. The platform was established by the V&A and the Peri Foundation as digital reproduction 'is a global issue that no individual or institution on their own could really tackle'.[117]

The next question is who should make the copy of the digital cultural asset? Digital copies are easy to make in principle, but can we rely on the applicant to make accurate copies (stable, unabridged, with all relevant software and hardware) as the guidelines require?[118] It may not always be possible for an owner to provide a reliable copy if they do not have the technological knowledge, or if the item will not allow it, such as the original hardware being vulnerable to photography or early software cannot be copied without corruption. If the asset can be copied for consultation by the Expert Adviser its suitability will be dependent on whether the Adviser can access it properly, such as having compatible software. The Waverley Report suggests the use of microfilm for copies of manuscripts but notes that there is no evidence to their 'durability' and long-term preservation.[119] Today, even less is known about the degradation of hardware or how stable data is when transferred between software. Perhaps policy should state that copying of digital assets is done by a digital archivist to ensure the entire item is copied accurately and in a 'stable' format for the future. The National Archives have written guidance on the preservation of digital archives and discussions of how they can be preserved at minimal cost.[120] However these are predominately aimed at institutions rather than independent owners. A drawback for the owner is the expense of professional assistance which may deter them from making a surrogate at all. As such, it is advisable that a review is undertaken to consider such practicalities and that digital cultural assets receive an independent index in ACE guidance for applicants to consult.

If the owner refuses to provide a surrogate of an item, the application is referred by the Export Licencing Unit (ACE) to the RCEWA.[121] If the Waverley guidelines are strictly followed then the decision to license should be solely based on the criteria, not the act of withholding the surrogate. Furthermore, the withholding of the licence 'conditional on the receipt of copies risks conflicting with various international treaties.' [122] Therefore if the object is not considered a national treasure enough to warrant an export block, there is no justification to withhold the licence for the sake of a copy.

Traditionally copies of exported items are deposited at the BL. For digital cultural assets the collecting institution would need to have the infrastructure with which to accession, preserve and grant access, taking care that the deposit is not a burden.[123] At this time national institutions are the most likely places for deposit as they have the capacity for digital teams. Some would argue, however, depositing at nationals denies many users

around the UK access, unless it was completely accessible online. One compromise would be to provide an online platform, such as The British Newspaper Archive or the UK Web Archive, whereby top-level information is publicly available online and accessible anywhere, and detailed access is available via reading rooms or online subscription which would accommodate cyber-security and monitoring of activity.

An alternative argument is that if a platform can be established to hold copies of all digital cultural assets that are exported, there would be no need to keep the 'original' file, thus automatically granting the owner an export licence if they comply. There is a wider debate to be had about the location of the actual (or 'original') digital component, how this is translated to benefit those in the UK, and the location of that benefit.

7g. Security

Digital cultural assets are vulnerable due to the public knowledge of digital programming and the unpredictability of future threats. If a digital item is accessed via a networked computer or the internet it could fall vulnerable to hacking or copyright infringement, for example. In 2017 the beginnings of 'good practice' was established by the UK Government which required all publicly owned heritage organisations to achieve Cyber Essentials accreditation. The standard included virus protection and working with software companies that could commit to updating the software.[124]

When Rushdie sold his hybrid collection to Emory University, the author requested that the contents was not accessible via the web. The solution was to ensure that the data was only accessible via computers in the reading room.[125] In doing so, Emory reduced the vulnerability of the collection and maintained greater control over its content, how it was used and accessed. Rushdie's concerns tie in closely with concerns around data protection. Many UK digital cultural assets will contain personal information under EU General Data Protection Regulation (GDPR).[126] Data must travel with the protection of GDPR and risks the rights of the individual when transferred out of the European Economic Area. Non-compliance can result in hefty fines for companies. It is the responsibility of the data processor or owner to comply with GDPR, however this could be easily undermined if digital assets are illegal accessed and exported.

The most concerning security consideration is that a digital cultural asset could bypass a physical border by simply being transferred over the internet. This possibility is in fact too simplified - if a digital cultural asset was created or stored on a cloud sharing platform, such as Google drive, it could technically be stored on a server in a different country already. The concern in this case would be whether there was permission to access the digital asset from outside of the UK. If the digital asset is opened outside of the UK without authorisation, a duplicate will automatically be saved to RAM memory (see *7h. Intellectual Property*), thus removing sole (and implied secure) control from the depositor in the UK and equating to export.

So can export be prevented without a physical border? David Wall identifies the biggest challenge for the security, prosecution and restoration of digital cultural assets: that cybercrime takes place in a global context whilst crime and related agencies are nationally defined. Policing cyber-crime becomes increasingly challenging when law enforcement agencies are 'networked and nodal' whereas the internet and data are fluid, borderless and limitless entities.[127] The internet is decentralised so without a sovereign cyber space there will be no rationalisation or overarching legal regulation. Ultimately, there is a lack of legal control due to the universal transparency of code. Any future action towards the protection of digital cultural asset would therefore be reliant on the 'harmonisation of moral right laws'.[128] If digital cultural assets were to become a target for cybercrime, a lack of 'adequate controls' would make the item vulnerable to copying,

change or even deletion.[129] In turn the asset's value would reduce, thus making the 'original' worthless. This would create not only an unpredictable market, but the potential to incentivise individuals to develop technology for such access and drive a black-market.

There are some concerning questions to be considered around security:

- How will law enforcement be involved if the export of a digital cultural asset cannot be prevented by a physical border?
- Who will regulate the activity or transfer of digital cultural assets across an international platform, if such a system can be put in place at all?
- How can digital cultural assets be 'returned' or destroyed if an unknown number of copies have been made? If a digital cultural asset were to be hacked and the perpetrator were to delete their copy from the internet, another copy could still be held on a *cache* and unaffected by the update.[130]
- The implementation of the World Intellectual Property Organisation (WIPO) Treaties deal with the general challenges of copyright and digitisation. The treaties were produced in 1996, so do they adequately protect copyright owners today? Furthermore, regular reviews are required to clarify the liability of Internet Service Providers in policing and rectifying copyright issues.[131] But can reliability be placed on this action if no one party is policing digital cultural assets?

It is concerning that the DCMS Cyber Security team were unable to answer how digital cultural assets could be stopped or prevented from unlawful export, or whom could be regulating them. DCMS seemed to be unaware of the risk to digital cultural assets, referring to data breaches rather than considering the loss of cultural value of an item being equal to that of the unlawful export of a physical manuscript. Their response ultimately stated it is up to individual institutions to protect digital cultural assets, which overlooks the private market altogether.[132] This communication highlights the need for DCMS and law enforcement agencies to work with the GLAM sector as a whole to tackle these concerns.

Export policies are also relevant for cultural assets which may be going on loan internationally. What security can be provided for digital cultural assets on loan when they are vulnerable to copying, for example? Many institutions simply don't loan digital assets.[133] For University of Melbourne Archives, their only exception of a digitised film was delivered on an encrypted flash drive to prevent access by unauthorised parties, whilst the loan terms were embedded in the metadata.[134] Tate and SMG do not lend digital collections but could potentially lend obsolete hardware. Physical security options could include a locked PC case or a *kiosk* solution where only a browser view is accessible to the public. Alternatively, an exhibition format of the item could be provided on a hard drive, meaning the copy is distinguished from the master copy and can be insured separately. If more was required, a solution would need to be established in the loan agreement 'to *lockdown* that environment' to prevent all possibilities of copying and for any versions to be deleted after use. Beyond security, loans of data are not common as the host institution would need compatible hardware to host any original software (or transfer it to a virtual environment) or, if it was for research purposes, provide read-only surrogate formats, such as PDFs. [135]

7h. Intellectual Property

The requirement by the Waverley Report to make a surrogate of the 'object' has been disputed as an infringement on the rights of the copyright owner under the Copyright Act.[136] Who owns the copyright of digital cultural assets? Is a licence required to use it? Is permission required to change the format for preservation purposes? Is there a plan and

permission in place for such action? [137] Traditionally the copyright remains with the creator's estate until 70 years after their death and then transfers to the owner of the work. The same principle is applied to films from the death of those most prominently involved. Is this same principle suitable for digital archives? One challenge would be to determine who the creator of the archive was in the first place if there were multiple contributors. For computer generated works, the author is the person who made arrangements for the creation to be possible.[138]

This report is predominantly focused on the vulnerability of digital archives. Archives can include databases which was defined by the Copyright and Rights in Database Regulation as 'a collection of independent works, data or other materials' which are 'arranged' in a 'methodical way' and 'are individually accessible by electronic or other means.' [139] Regardless of the individual contents, such as text and images, the database itself would be protected by copyright. Could this legislation therefore be applicable to digital archives?

With a digital archive, copyright could be easily infringed. When a copy of the material is opened it creates as 'transitory' copy, an automatic duplicate to computer RAM memory. The on-screen copy when viewed would not be infringing copyright, but the RAM version will be.[140] If a digital asset was available online there could be numerous infringing copies in different countries because 'the internet works by copying', therefore each are covered by different laws and jurisdictions.[141] Furthermore, making the asset available on the internet is tantamount of exhibiting a piece of work in public, thus infringing on moral right laws. These laws all come with basic caveats that a certain level of copying is allowed whilst fully crediting the creator original creator. Thus, digital archives could be mined for information for research purposes, without necessarily breaking copyright.

Copyright becomes a concern for the export of digital cultural assets as there is no way to trace who how many copies have been made (transitory or deliberate) before the item going on the public market (see *7b. Authenticity*). If for example, an owner has shared a digital cultural asset over the internet with another party for consultation or potential purchase, the mere viewing of the item could mean a copy exists on RAM somewhere, thus devaluing the 'original'. The same could be said for the copy required by the Waverley Report. To overcome copyright issues some artists have been facing the issue head on by passing out DVDs of their work or making it available online. [142] If digital assets are available online they could devalue the IP making investment in digital assets risky, so would a public market ever emerge?

Considering the IP of a digital cultural asset may be premature if the collection does not own the asset at all. The V&A legal team recently drew up a deed of gift for a forthcoming acquisition, however it was noted that nothing in the phrasing transferred the title. The V&A legal team argued that technically digital files cannot be chattel, so legally the V&A cannot own digital collections. Therefore, collections can possess the items IP, but not the item as property per se. The V&A collections team focused on the materiality of the item, in the form of 0s and 1s, however this still meant they only owned a copy and did not have unique ownership. For example, Aaron Koblin's *Flight Patterns* was acquired by the V&A but is also owned by MoMA. Any unauthorised action with such items would therefore be infringement under IP law, a violation, rather than theft under traditional property law.[143] (Collections Trust, BL and the Government provide guidance on IP and copyright.[144]) The Wellcome Collection negotiate the IP at the time of acquisition for all media in their collection, including digital. For digital archives the Collection insists on the transfer of copyright, whilst for digital art works the copyright licence has been purchased. The Collection's standard terms are for the copyright to be gifted or, if this is not possible, a broad licence is granted to allow the Collection to make the material publicly available.[145]

GLAM institutions can specify their own terms, at present, however for items obtained under AIL the IP traditionally stays with the original owner. Would a collection really benefit from AIL if the IP remains with the owner? Could collections ever do anything with the digital cultural asset?

Matters are made more complicated when we consider that all digital assets are reliant on software for which someone else may own the IP. It has to be anticipated that the creator will not necessarily understand these challenges, they are likely to have worked with other people or other people's software in order to create the item.[146] Therefore, if a digital cultural asset were to be illegally exported, or a partner in the item's creation were to duplicate the material, this could be seen as nothing more than an infringement of copyright.

Copyright laws are undergoing some fundamental changes within the EU, though their impact on the UK is unknown until Brexit is finalised. The European Parliament have voted in Article 13, a controversial act which will hold tech firms responsible for material posted without copyright permissions.[147] Platforms such as Google and YouTube, for example, would be liable for any copyright content, requiring filters to be implemented before content is uploaded thus preventing any illegal uploads in the first place. Although this is a move towards greater policing of copyright on an international scale, there are exemptions including cloud storage services, online marketplaces and communication services. These are in fact three key ways that digital cultural assets could be transferred illegally, so more work must be done to establish a way of monitoring unlicensed exports over the internet.

8. Recommendations for future action

Although immediate action needs to be taken, recommendations need to be proactive to prevent undue anxiety amongst potential collecting institutions, with realistic infrastructures behind each action. It must be noted that digital capacity will be undermined if action cannot be taken by institutions due to a lack of knowledge or a lack of funds. Ideally these recommendations would be actioned immediately; however, it is more realistic to anticipate that international partnerships and agreements on standards may take years to establish and broker. These recommendations are made with long-term sustainability and reoccurring reviews in mind. GLAM institutions should work together as their material may vary but are united by the concerns around the export of digital cultural assets. The public will be deprived of digital cultural assets if proactive steps are not taken to monitor exports, losing a significant amount of cultural knowledge which will be deemed by future generations to have historic value. We need to see these items not only as a reflection of our culture but adding to history right now.

8a. Overarching recommendations

i. All mechanisms which feature the ambiguous phrasing 'object' should be reviewed. 'Object' refers to a material item which can be touched. The noun needs to be replaced with something more suitable to accommodate digital assets which may not be corporeal or tangible, such as 'item'.
ii. Content and phrasing of all policy and mechanisms in this report need to be revised in tandem. To reduce flaws in the system revisions should be made in consultation with Appendix 2, a flow chart which identifies the points of disjunction in the export process.
iii. All parties with a vested interest in the export of digital cultural assets should be provided with a platform to centralise knowledge sharing and communication, such as the Museums Computer Group (MCG), DPC or Collections Trust.
iv. After Brexit a full review needs to be done of the impact on the phrasing in all policy, legislation and mechanisms mentioned in this report. This is an opportunity to accommodate digital cultural assets in export and copyright legislation. IP should be revised in consultation with the Intellectual Property Office who have already published guidance in preparation for Brexit.[148] (See *7a* and *7h.*)
v. Although revisions have been made since the 1952 Waverley Report, these are dispersed throughout multiple documents, many not publicly accessible. The Waverley Recommendations should be revised and published in full, accessible to the public via ACE. (See Appendix 1.)
vi. It is proposed that the DWP and The National Archives convene a stakeholder's consultative meeting for the public and commercial sector in response to this report. This would provide an opportunity for stakeholders to map how these recommendations can be actioned and for further suggestions to be made.

8b. Policy and legislation - Export

i. The Waverley guidelines need to be revised to reflect the evolution of collecting practices; to acknowledge that digital is a reflection of our society; and to ensure it allows for the emergence of new media in the future. (See *5a* and Appendix 2.) Alternative phrasing could be for the three central criteria could be:
    1. Is it so closely associated with our history, **society, culture or** national life that its departure would be a misfortune?
    2. Is it of outstanding aesthetic and/or of **intellectual** importance?
    3. Is it of outstanding significance for the study of some particular branch of art, learning or history?

ii. Case studies are needed to provide evidence investment is required, pushing standards to evolve.[149] Whilst the public market is maturing revised criteria should provide examples of collections and types of property or assets to ensure that owners can clearly distinguish under which licence a digital cultural asset sits.
iii. Further guidance is required for the public and commercial sector to ensure that members of the public they come into contact with will be aware they are required to apply for an export licence. (See *5a.* and recommendation *8d(iii)*.)
iv. A 'Digital Cultural Asset' line should be added to the export pricing threshold (OGEL criteria) to ensure it has reputable standing as a national treasure.[150] With no active market at present there is no gauge as to what future values should be, so the minimum threshold should be set at zero in line with archives and manuscripts. Criteria should also include the identity or definition of a digital cultural asset. (See *5a*.)
v. For the OGEL criteria to be effective, this report proposes the removal of the 50-year rule. Digital assets being made today won't require a licence until 2069 leaving them vulnerable to export in the meantime.
vi. Alternatively, a different licence should be created for digital cultural assets. The licence should be written with the understanding of how an export would be monitored with no physical border. (See *5a.*) The template for such a licence could be found in existing regulation controlling export of software and technical information, such as The Export Control Order 2008.[151]
vii. ACE could provide separate guidelines for the copying of a digital cultural asset (for the purposes of consultation by the Expert Adviser and the for potential deposit of the copy).[152] A list of digital archivists should be made publicly accessible as part of the ACE guidance. Digital archivists will ensure that the duplicate is usable and unabridged. If applicants have copies made by a digital archivist (assuming that no copyright is being infringed) the application process will be smoother, and the quality of the copy will be guaranteed. The drawback of potential cost to the owner needs to be considered. Guidance could also be provided for owners to make copies themselves if appropriate. (See *5a, 7e* and *7f*.)
viii. Criteria should be written to establish what is required to be an Expert Adviser of digital cultural assets. In consequence, a list of potential advisers should be drawn up. (See *7e*.)
ix. ACE should review where copies of exported digital cultural assets are deposited (see *7f*). It could be argued that digital cultural assets, originals or copies, should be publicly accessible from anywhere, so why should they be stored at a London institution? Should consistency be maintained with copies held at the BL as with other records of exported materials? Or distributed according to the collecting institutions suitability? Are any other institutions equipped to maintain and provide access for digital cultural assets? Alternatively an online platform could be constructed to provide secure access to these copies, allowing monitoring of all activity and reducing the concerns that digital cultural assets are being exported.

8c. Policy and legislation – Other mechanisms

i. ACE must ensure that their 2019 review of 'Museums, Collections and Cultural Property function and responsibilities' will emphasise the need for a greater awareness of the retention and preservation of digital assets in the UK, not just digital delivery or visitor experience. (See *6a(iii)*.)
ii. A regular digital consortium should be established between national institutions which accept digital deposits. To prevent duplication this could be part of DPC, MCG or Collections Trust activity. This is an opportunity for the institutions to share their knowledge. (See *6a(iii)*.)

iii. MCG, DPC, ACE, Collections Trust and all related bodies should encourage members to make annual reviews of their digital policy and activity, making recommendations according to anticipating advances in technology and challenges the GLAM sector will face. (See *7* intro.)
iv. The National Archives should revise their copyright guidelines to explicitly discuss the copyright issues surrounding digital archives. The current guidelines were last updated in 2013.[153] (See *7h.*)

8d. Knowledge and skills

i. A follow-up programme as part of Archive Service Accreditation (ASA) could be introduced to train a representative at each potential collecting institution in software and hardware maintenance, how to provide public access, cyber security and how to apply for funding. Whereas *Bridging the Digital Gap* is an initiative to place individuals with digital skills in archives, this follow-up programme would train staff already in situ at archives. This individual would also develop digital policies for their institutions, be provided with a direct contact at The National Archives to follow up concerns and provide recommendations for the future. (See *6a(ii)*.) This training could be delivered via The National Archives e-Learning platform. Potential funders could be the NLHF (as an extension of *Bridging the Digital Gap*) or for a case to be made for Treasury investment in the digital capacity of the sector as part of The National Archives Comprehensive Spending Review. Investment in the infrastructure and skills for custodian institutions across the GLAM sector to preserve and provide access to born digital material fits in with the commitments of *Culture is Digital.*
ii. The National Archives Manuscript Sales Monitoring Service should be expanded to also monitor digital archives as a public market emerges. An application could be made to The National Archives Trust for funding to create an apprenticeship which could sustain the digital archives branch of the Monitoring Service. An equivalent monitoring service should be established by an art gallery to monitor the sales of digital art work. Communication between the two services must ensure that all aspects of digital cultural assets are being accounted for.
iii. Following from *8b(iii)*, additional guidance for the public market (such as auctioneers) will increase awareness, stabilise the market, and decrease the risk of digital cultural assets being sold on the black market. (Also see *4 and Appendix 2.*) Guidance should include the risks of the distribution of personal data (see *7g. Security* for discussion on GDPR).
iv. The National Archives should work with other bodies, such as ACE and Collections Trust, to provide guidance for professional advisors and estates to help ensure that pre-eminent digital archives are well maintained from the point of creation and in situ.

8e. Expenses and tax relief

i. Guidance should be updated to advise applicants of the additional running costs of digital assets, such as cyber security. This would allow the additional costs to be factored into valuations and the allocated institutions running costs, which in turn could form part of Government Indemnity Scheme and tax relief applications. (See *7d.*)
ii. Tax relief systems need to be revised to omit the term ‘object’ to account for digital. (See *5d.*)
iii. A revision of AIL and CGS guidance is desirable to make their remit clear as neither unequivocally accommodate digital cultural assets at present. Revisions should be made to ensure that there is a clear emphasis and welcoming of contemporary material in any medium. (See *5d.*)
iv. Conditional Exemption currently requires owners to contribute towards to cost of conservation and cataloguing. Such schemes should provide guidance about digital

maintenance before transfer to public ownership. Alternatively, a proposal could be made for further tax relief (at a predicated annual cost) to accommodate the ongoing maintenance of digital assets to prevent deterioration, removal from its original context to a repository or sale. (See *5d.*)

8f. Funding

i. Funders should revise their criteria to clearly include the acquisition of digital cultural assets and be encouraged to support preservation costs which might otherwise deter applicants from applying. These additional funds should be scaled according to the size of the acquisition and the infrastructure of the collecting institution. (See *5b-c, 6b* and *7d.*)
ii. The PGF need to expand their guidance on the acquisition of digital media to fully inform applicants of the long-term financial investment they are making. Whereas the costs of stewardship have a long-established history and standard of care for analogue collections (so do not necessarily require guidance) it is important clarity is provided for digital items as it is still a new concept to the GLAM sector. In turn, applicants should factor this in to future costings or the PGF should consider providing a grant extension to accommodate these costs. (See *6b(i)*.)
iii. With the uncertain funding currently available for digital cultural assets, this report proposes the creation of a PGF fund specifically for the acquisition, preservation and access of advancing technology and alternative mediums with a clear remit across the GLAM sector. (See *6b(i)* and *7d*.)
iv. Funding application guidelines should recommend applicants use the CCEx to calculate the cost of caring for their digital collections. If an application for an acquisition is then made, applicants could justify the cost of the acquisition and the further costs of preservation in relation to their overall collection. If preservation costs aren't justified, funders may reject applications as the item for acquisition risks future degradation. If applications are unsuccessful the digital asset would be likely granted an export licence. (See *6a(iv)*.)

8g. Preservation and care

i. Under the guidance of DPC and Collections Trust, and in consultation with the DPC handbook, national institutions should collaborate to create a standardised condition report for digital cultural assets (in their innumerable, ever changing forms). The condition report should consider how to loan hardware, software and data, as well as how to monitor formats that may be deliberately designed to degrade. The condition report should then be disseminated through the DPC, MCG, Collections Trust and ACE.[154] The condition report should also be used by the Expert Adviser in their assessment process. (See *7e*.)
ii. ACE Museum Accreditation should get applicants to consider how they would budget for the financial costs for the long-term care of digital cultural assets (see *7d*); whilst ASA could take their questions a step further and ask applicants how they would secure their digital assets if they were to be requested on loan (see *6a(ii)*).

8h. Security

i. ACE, The National Archives and BL should work together to create a database of all known authorised and unauthorised copies of digital cultural assets (taking in consideration the 7-year rule).[155] This database should be accessible to law enforcement agencies (see *7b*, *7f*, *7g* and *8a(iii)*) and could utilise PID technology (see *8h(iv)*). The database would parallel or be incorporated with The National Archives Manorial Documents Register (see *8d(ii)*). The National Archives would be the ideal

host for such a database due to sector neutrality as it is not a collecting institution outside the area of public records.

ii. The digital asset monitoring services (see *8d(ii)*) should establish clear and consistent contact with the DCMS Cyber Security Science & Technology Team and the NCA. Security bodies should to briefed to have a clear understanding of what could be on the black market or what could be future risks to digital cultural assets. (See *7g* and *8a(iii).*)

iii. Monitoring services should also reach out to the E-Ark, International Council of Archives and DLM FORUM communities to help police the movement of digital cultural assets across international borders.

iv. The National Archives should begin consultation about the suitability of employing ARCHANGEL across the public and commercial sectors. Bodies such as DCMS, ACE and auctioneers should be involved. If it is deemed appropriate the technology should be adopted as early as possible, ideally at the point of creation by the creator, to ensure that if the digital asset was to be the subject of an export licence application, it is deemed authentic (See *7b*.)

v. On behalf of the GLAM sector, ACE and DPC need to work with international law enforcement and customs to ensure there is a clear policy on how licences of digital cultural assets can be checked in the absence of a physical border. (See *7g*.)

vi. On behalf of the GLAM sector the DPC and MCG should work with a cyber security developer to provide flexible security guidance for collections of all sizes, taking into consideration their role of providing public access through research and exhibitions. (See *7g.*)

vii. The GLAM sector (public) bodies should work with commercial bodies (such as auctioneers) to make them aware of the value of digital cultural assets and how they can help in regulating values in the market. The proposed database (see *8d(ii)* and *8h(i)*) should be used by auction houses to verify the authenticity of digital cultural assets and that copies are not already available on the open market. This could reduce ‘fraudulent’ copies being sold and stabilise the market. (See Appendix 2.)

9. Conclusions

This review has established that current export policies and supporting mechanisms have not yet evolved for digital cultural assets. The research has revealed how disjointed the actions and knowledge of institutions are at present. Many institutions are still navigating their way through caring for digital cultural assets and working towards digital maturity. Naturally this means that export, an external factor with no imminent consequence to the institutions collection, is being overlooked.

There are four key conclusions to be drawn from this report:

1. There is a clear lack of awareness that digital items can possess cultural value, that they are more than just data. The *Culture is Digital* Digital Taskforce survey revealed that more institutions needed to be 'convinced' of the importance of digital. In addition, there was a varying understanding of what digitisation means, thus what a digital cultural asset could be. In turn many institutions within the GLAM sector, bodies which support the sector (such as DCMS and security agencies) and the commercial sector (such as auctioneers) are unaware that digital cultural assets are at risk of export.
2. The Waverley Report and the vast majority of other policies and guidelines use the noun 'object' which assumes a tangible item. The Waverly Criteria are meant to identify 'objects of high importance' but to class digital cultural assets as such, the language and perceptions of the GLAM institutions need to be changed. The current language means digital cultural assets could easily slip through the net and an export licence would have to be granted to adhere to current export policies.
3. The current phrasing means that no funder unequivocally supports the acquisition of digital cultural assets, and similarly tax relief schemes are too vague and open to interpretation. The scarcity of interest in digital cultural assets may be twofold:

- there is no public market at present, so no digital cultural assets have been available through these mechanisms to collecting institutions;
- and guidance does not facilitate the purchase of digital cultural assets, which means it wouldn't occur to collecting institutions that they have an option to apply for funding. They may also feel that the process would require too many resources.

4. This report is only the beginning of a complex web of conversations that need to be had within the GLAM sector and with external supporting bodies (see section 7). Only once discussions within the sector have determined a general consensus around the following topics can beneficial change occur: the physical vs. intangible elements of export and border control, ownership vs. accessibility, authenticity and value.

In sum, the Waverley criteria are the central tenets which needs to be thoroughly reviewed. This would be futile however without a review of the supporting mechanisms that allow for acquisition and long-term care of digital cultural assets (see Appendix 2). Without these supporting mechanisms export guidelines will not be effective, meaning any digital cultural asset could potentially leave the country.

Although the outcomes of this report seem negative and the recommendations daunting, the questions raised are an exciting insight into the future of collecting in the UK.

10. End notes

[1] Travers' sabbatical will result in an unpublished Executive Team paper called 'Archives as Cultural Property and the Digital Future'.
[2] Committee on the Export of Works of Art: HM Treasury, *The Export of Works of Art Etc.: Report of a Committee Appointed by the Chancellor of the Exchequer [Waverley Report]* (London: Her Majesty's Stationery Office, 1952), 45 (225).
[3] Ibid., 62 (3, 5).
[4] Arts Council England ACE, 'UK Export Licensing for Cultural Goods Procedures and Guidance for Exporters of Works of Art and Other Cultural Goods [Issue 1]', 2018, 28 (12), accessed 30 January 2019 https://www.artscouncil.org.uk/sites/default/files/download-file/2018 Guidance_for_exporters_issue_1_2018.pdf.
[5] IBM, 'IBM 350 Disk Storage Unit', 2019, accessed 6 February 2019 https://www.ibm.com/ibm/history/exhibits/storage/storage_350.html.
[6] Museum Association, 'Collections 2030', 2019, 8, accessed 18 January 2019 https://www.museumsassociation.org/collections/09052018-collections-2030.
[7] *Conversation with Marion Crick, Head of Collections Management, V&A [27 February]*, 2019.
[8] The National Archives, 'Digital Strategy 2017-19', 2017, 2, 3 (2.1).
[9] Sebastian Gurciullo, 'Keeping Born-Digital Literary and Artistic Archives in an Imperfect World: Theory, Best Practice and Good Enoughs', *Comma* 2017, no. 1 (1 November 2018): 65.
[10] *Gerald Aylmer seminar: Digital and the Archive [22 February]* (The National Archives, 2019).
[11] The National Archives, 'Digital Strategy 2017-19', 1; The National Archives, 'Archives Unlocked', 2018, 1.
[12] HM Treasury, *Waverley Report*, 19 (96-7).
[13] Ibid., 44, para. 220.
[14] Department for Digital Culture Media & Sport DCMS, 'Culture Is Digital Executive Summary', 2018, 2, accessed 4 February 2019 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/686725/Culture_is_Digital_Executive_summary__1_.pdf.
[15] Department for Digital Culture Media & Sport DCMS, 'Sectors Economic Estimates: Employment - Digital Sector Subsectors', 2018, table 31: Employment in Digital Sector sub-sectors, accessed 30 January 2019 https://www.gov.uk/government/statistics/dcms-sectors-economic-estimates-2017-employment.
[16] HM Treasury, *The Economic Value of Data: Discussion Paper* (London: Crown, 2018), 4 (1.1), 5 (1.9), 2.
[17] The National Archives, 'What's New in Archives? Accessions to Repositories 2017' (London: The National Archives, 2018), 7, 42, accessed 5 February 2019 https://www.nationalarchives.gov.uk/documents/whats-new-in-archives-accessions-to-repositories-2017.pdf.
[18] Department for Digital Culture Media & Sport DCMS, 'Taking Part Survey 2017/18 Quarter 4 Statistical Release: Digital Engagement', 2018, table 1, accessed 30 January 2019 https://www.gov.uk/government/statistics/taking-part-201718-quarter-4-statistical-release.
[19] Department for Digital Culture Media & Sport DCMS, 'Change of Name for DCMS', 2017, accessed 30 January 2019 https://www.gov.uk/government/news/change-of-name-for-dcms.
[20] Adrian Cunningham, 'Waiting for the Ghost Train: Strategies for Managing Electronic Personal Records before It Is Too Late', *Archival Issues* 24, no. 1 (1999): 58.
[21] Adrian Cunningham, 'Ghosts in the Machine' cited in Gurciullo, 'Keeping Born-Digital Archives', 57.
[22] Frances Wilson (Export Licensing Manager), *Meeting of the Documents Working Party, 21 May 2018: Manuscript Open Individual Export Licences (OIELs) 2017* (Unpublished DWP meeting document, 2018), 1.
[23] ACE, 'Export Licensing for Cultural Goods', 3-4 (2, 4), 36: schedule to 34 (1k), 28, 30.
[24] Department for Digital Culture Media & Sport DCMS, 'Export Controls on Objects of Cultural Interest. Statutory Guidance on the Criteria to Be Taken into Consideration When Making a Decision about Whether or Not to Grant an Export Licence. Pursuant to Section 9(6) of the Export Control Act', 2015, 5 (11), 7 (14), accessed 31 January 2019 https://www.artscouncil.org.uk/sites/default/files/download-file/Export_criteria_March_2015.pdf; HM Treasury, *Waverley Report*, 19 (96).
[25] ACE, 'Export Licensing for Cultural Goods', 3–4 (2); Department for Digital Culture Media & Sport DCMS, *Export of Objects of Cultural Interest 2016-17* (London: Her Majesty's Stationery Office, 2018), 71.
[26] HM Treasury, *Waverley Report*, 19 (97), 62 (8).
[27] *Jack Kirby, Group Head of Collections Services, Science Museum Group [6 March]* (Phone conversation, 2019); Jenny Shaw, *RE: The National Archives: protecting digital assets [19 March]* (Email to Rhian Addison from the Wellcome Collection, 2019).
[28] *HMRC v The Executors of Lord Howard of Henderskelfe* (UKUT 0129 (TCC): EWCA Civ 278 Appeal number FTC/02/2012, 2013).
[29] HM Treasury, *Waverley Report*, 48, section vi, 239 (1) and 62, section ix (9); ACE, 'Export Licensing for Cultural Goods', 7 (17), 6 (13).

[30] DCMS Working Party on Documents Manuscripts and Archives, *Minutes of the Meeting of the Working Party on Manuscripts, Documents and Archives, Tuesday 18 May 2017* (Unpublished DWP meeting document, 2017), points 40 and 35.
[31] Treaty on the Functioning of the European Union; Title II "Free Movement of Goods": Chapter 3, art. 34-36 (from consolidated reference text at http://eur-lex.europa.eu, rather than official text); European Convention on Human Rights, 1950, Protocol 1, Article 1. Both documents cited in DCMS Working Party on Documents Manuscripts and Archives, *Annex 1 - Key Documents* (Unpublished DWP meeting document, 2018).
[32] ACE, 'Export Licensing for Cultural Goods', Appendix G: Standard formats for digital copies of manuscripts.
[33] Victoria & Albert Museum, 'The ACE/V&A Purchase Grant Fund', 2019, accessed 18 January 2019 https://www.vam.ac.uk/info/the-ace-va-purchase-grant-fund.
[34] Arts Council England ACE and V&A Purchase Grant Fund PGF, 'Acquisition of Digital Media', 2019, accessed 18 January 2019 https://vanda-production-assets.s3.amazonaws.com/2018/09/12/09/13/59/73833cf7-45d7-4680-9305-513734d16dc5/EG6 18-19.pdf.
[35] Arts Council England ACE, *PRISM Fund Annual Report for Documents Working Party 2016/17* (Unpublished DWP meeting document, 2017); *Report to the Working Party of 21 May 2018 from the National Heritage Memorial Fund/Heritage Lottery Fund* (Unpublished DWP meeting document, 2018).
[36] National Heritage Memorial Fund NHMF, *Annual Report and Accounts for the Year Ended 31 March 2018* (London: Her Majesty's Stationery Office, 2018), 12; The National Manuscript Conservation Trust NMCT, 'FAQs', 2018, accessed 6 February 2019 https://www.nmct.co.uk/applying-us/faqs#grant-cover.
[37] Group for Literary Archives & Manuscripts GLAM, 'What Are Literary Archives?', 2019, accessed 8 February 2019 http://glam-archives.org.uk/?page_id=1731.
[38] HM Revenue & Customs, 'Tax Relief for National Heritage Assets', 2019, accessed 18 January 2019 https://www.gov.uk/guidance/tax-relief-for-national-heritage-assets.
[39] Arts Council England ACE, *Cultural Gifts Scheme & Acceptance in Lieu Report 2018* (Manchester: Arts Council England, 2018).
[40] ACE. *Cultural Gifts Scheme & Acceptance in Lieu Report 2018*.
[41] Jonathan Leake, *Stephen Hawking's robotic voice and chair to whir into infinity*, *The Sunday Times* (1 April 2018), accessed 14 February 2019 https://www.thetimes.co.uk/article/stephen-hawkings-robotic-voice-and-chair-to-whir-into-infinity-9p3zsqkfg.
[42] DCMS, 'Culture Is Digital', 2018.
[43] Department for Digital Culture Media & Sport DCMS, 'Strengthening the Process for Retaining National Treasures', 2018, accessed 30 January 2018 https://www.gov.uk/government/consultations/strengthening-the-process-for-retaining-national-treasures.
[44] National Museum Directors' Council NMDC, *NMDC response to DCMS consultation on strengthening the process to retain national treasures* (Unpublished document, 2019), 1 (1, 3, 5), 2 (13).
[45] Archive Service Accreditation ASA, 'Archive Service Accreditation Application Form', 2019, accessed 13 February 2019 https://www.nationalarchives.gov.uk/documents/archives/archive-service-accreditation-application-form-june-2018.pdf.
[46] Archive Service Accreditation ASA, *Progressing to a Digital Standard Update and proposed pathway May 2016* (Unpublished meeting document, 2016), 1–2.
[47] Department for Digital Culture Media & Sport DCMS, 'Culture Is Digital', 2018, 34, accessed 4 February 2019 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687519/TT_v4.pdf; DCMS, 'Culture Is Digital', 2018, 16 (5-7).
[48] Archives, 'Minutes DWP'.
[49] Digital Preservation Coalition DPC, 'Digital Preservation Handbook', *2nd Edition*, 2015, accessed 13 February 2019 https://dpconline.org/handbook.
[50] Collections Trust, 'Spectrum 5.0', *2017*, accessed 13 March 2019 https://collectionstrust.org.uk/spectrum/spectrum-5/; Collections Trust, 'Digital Isn't Different', 2019, accessed 13 March 2019 https://collectionstrust.org.uk/digital-isnt-different/.
[51] ACE and PGF, 'Acquisition of Digital Media', 1–2.
[52] DCMS, 'Culture Is Digital', 2018, 16 (8).
[53] British Library BL, 'Sustaining The Value: The British Library Digital Preservation Strategy 2017-2020', 2017, 3, accessed 13 February 2019 https://www.bl.uk/britishlibrary/~/media/bl/global/digital preservation/bl_digitalpreservationstrategy_2017-2020.pdf.
[54] British Library BL, 'Digital Preservation Capability Assessment', 2018, accessed 13 February 2019 https://www.bl.uk/projects/digital-preservation-capability-assessment.
[55] BL, 'Sustaining The Value: The British Library Digital Preservation Strategy 2017-2020', 2.
[56] J. L. John et al., *Digital Lives. Personal Digital Archives for the 21st Century >> an Initial Synthesis [Beta Version 0.2]* (London: British Library, 2010).
[57] The National Archives, 'Digital Strategy 2017-19', 5 (3), 4 (4).

[58] DCMS, 'Culture Is Digital', 2018, 17 (10); The National Archives, '20-Year Rule', 2019, accessed 8 February 2019 http://www.nationalarchives.gov.uk/about/our-role/plans-policies-performance-and-projects/our-projects/20-year-rule/.
[59] The National Archives and Jisc, 'Memorandum of Understanding (MoU) between The National Archives and Jisc', 2017, 3 (6).
[60] The National Archives, 'Archives Unlocked', 5.
[61] The National Archives, 'Bridging the Digital Gap: Technical Traineeships in Archives', 2019, accessed 8 February 2019 http://www.nationalarchives.gov.uk/archives-sector/projects-and-programmes/bridging-digital-gap-technical-traineeships-archives/.
[62] Victoria & Albert Museum, 'Content Data Object: Articulating and Enabling Meaningful Access to Digital Artworks', 2019, accessed 18 January 2019 https://www.vam.ac.uk/research/projects/content-data-object.
[63] Adrian Glew, *RE: The National Archives: protecting digital assets [19 February]* (Email to Rhian Addison, 2019).
[64] Tate, 'Pericles', 2017, accessed 13 March 2019 https://www.tate.org.uk/about-us/projects/pericles.
[65] Annet Dekker, *Collecting and Conserving Net Art: Moving Beyond Conventional Methods* ([e-book] Oxon and New York: Routledge, 2018), sec. 167.5.
[66] 'Rhizome', 2019, accessed 13 March 2019 https://www.newmuseum.org/pages/view/rhizome.
[67] 'Jack Kirby, SMG'.
[68] HM Treasury, *Waverley Report*, 62 (3).
[69] ACE, 'Export Licensing for Cultural Goods', 7 (17).
[70] Simon Stokes, *Art and Copyright* (Oxford: Hart, 2002), 97 (5.8 a). See the E-Commerce Directive [2000/31/EC, [2000] OJ L178/1]; Digital Copyright Directive which implements the World Intellectual Property Organisation treaties.
[71] ICM, *Impact of Brexit on the Arts and Culture Sector: A Report by ICM and SQW on Behalf of Arts Council England* (London: ICM, 2017), 65.
[72] For further discussions of authenticity see Dekker, *Collecting and Conserving Net Art*, sec. 248.6, 414.0 and 420.1.
[73] David S. Wall, *Cybercrimes: The Transformation of Crime in the Information Age* (Cambridge: Polity, 2007), 95.
[74] For examples see Netherlands Coalition for Digital Preservation NCDD, 'Introduction to Persistent Identifiers', 2019, accessed 12 March 2019 http://www.ncdd.nl/en/pid/.
[75] Art Acacia, 'Art & Technology: How to Use Blockchain to Authenticate Art?', 2018, accessed 19 February 2019 https://medium.com/@inna_13021.
[76] Jo Pugh at the 'Gerald Aylmer Seminar: Digital and the Archive [22 February]'.
[77] For limitations and concerns see Victoria Louise Lemieux, 'Trusting Records: Is Blockchain Technology the Answer?', *Records Management Journal* 26, no. 2 (2016): 120.
[78] 'Monegraph', 2019.
[79] See J. Collomosse et al., 'ARCHANGEL: Trusted Archives of Digital Public Documents', *In Proceedings of ACM Conference (Submitted to ACM DocEng'18). ACM, New York, NY, USA* 39 (2010); J. Collomosse et al., 'Using Blockchain to Engender Trust in Public Digital Archives', *IPRES 15th International Conference on Digital Preservation*, 2018.
[80] Michael Forstrom, 'Describing Archives: A Content Standard', Society of American Archivists, (Chicago, 2004) cited in Laura Carroll et al., 'A Comprehensive Approach to Born-Digital Archives', *Archivaria* 72 (2011): 75–76, 82, 85.
[81] Clifford Lynch, "Preserving Digital Documents: Choices, Approaches and Standards," Law Library Journal, vol. 96, no. 4 (2004), p.614 cited in ibid., 79.
[82] For Travers see The National Archives, *Manuscript Sales Monitoring Service: Overview of the year 2017-18 statistical summary* (Unpublished DWP meeting document, 2018), 3; HM Treasury, *Waverley Report*, 62 (2).
[83] Dorothy Waugh, *Re: The National Archives UK: Protection of Digital Cultural Assets/Salman Rushdie archive [19 February]* (Email to Rhian Addison, 2019); Lachlan Glanville, *RE: The National Archives UK: Protection of Digital Cultural Assets/Germaine Greer collection [13 February]* (Email to Rhian Addison, 2019).
[84] Kathryn Sutherland (St Anne's College, Oxford) on BBC3 Arts & Ideas podcast 21 December 2018 'The Digital Humanities'. Featured at 32 minutes, 37 seconds.
[85] Samuel H. Williamson et al., 'Measuring Worth', accessed 29 January 2019 https://www.measuringworth.com; K. Clarke, J. Flanagan, and S. O'Neill, 'The Financial Information Value Chain: Repositioning Accounting Knowledge', *Australasian Accounting, Business and Finance Journal* 2, no. 1 (2008). Most recently Jeremey Heil at Queen's University, Canada distributed a survey to archives to ask their opinions on the valuation of data. The results are yet to be published. Likewise JISC are due to public a report of the value of data.
[86] Digital Preservation Coalition DPC and Jisc, 'Digital Assets and Digital Liabilities: The Value of Data

Financial Planning – Invitational Workshop', 2019, accessed 19 February 2019 https://www.dpconline.org/events/members-only-briefing-day-and-webinar/digital-assets-digital-liabilities.
[87] Treasury, *The Economic Value of Data: Discussion Paper*.
[88] Freda Matassa, *Valuing Your Collection: A Practical Guide for Museums, Libraries and Archives* (London: Facet Publishing, 2017), xiii, 143-44, 29, 179-81.
[89] See OGEL value limits: ACE, 'Export Licensing for Cultural Goods', 30 (table 3).
[90] HM Treasury, *Waverley Report*, 48, section vi, 239 (1) and 62, section ix (9); ACE, 'Export Licensing for Cultural Goods', 7 (17).
[91] Wall, *Cybercrimes: The Transformation of Crime in the Information Age*, 95.
[92] HM Treasury, *Waverley Report*, 44 (221).
[93] David Rosenthal, 'Storage Will Be A Lot Less Free Than It Used To Be', 2012, accessed 6 March 2019 https://blog.dshr.org/2012/10/storage-will-be-lot-less-free-than-it.html.
[94] Museum Association, 'Collections 2030', 8.
[95] The National Archives, 'Accessions 2017', 42.
[96] Katie Price and Dafydd James, 'Structuring For Digital Success: A Global Survey Of How Museums And Other Cultural Organizations Resource, Fund, And Structure Their Digital Teams And Activity', *Museums and the Web 2018*, 2018, accessed 18 March 2019 https://mw18.mwconf.org/paper/structuring-for-digital-success-a-global-survey-of-how-museums-and-other-cultural-organisations-resource-fund-and-structure-their-digital-teams-and-activity/.
[97] DPC and Jisc, 'Digital Assets and Digital Liabilities'.
[98] William Kilbride at DPC and Jisc. 'Digital Assets and Digital Liabilities'; ACE and PGF, 'Acquisition of Digital Media', 2.
[99] Neil Beagrie at DPC and Jisc, 'Digital Assets and Digital Liabilities'.
[100] Glanville, 'RE: Germain Greer Collection'.
[101] HM Treasury, *Waverley Report*, 44 (222-3).
[102] J. L. John et al., *Digital Lives. Personal Digital Archives for the 21st Century >> an Initial Synthesis [Beta Version 0.2]* (London: British Library, 2010), xi.
[103] Nesta and Arts Council England ACE, 'Digital Culture', 2017, 34, 40, accessed 8 February 2019 https://media.nesta.org.uk/documents/digital_culture_2017.pdf.
[104] DCMS, 'Culture Is Digital', 2018, 2, 9.
[105] The National Archives, 'Digital Strategy 2017-19', 5 (2.5).
[106] Ellie Porter, 'Organising a Life's Work', *Art Professional*, 2019, accessed 20 March 2019 https://www.artsprofessional.co.uk/magazine/322/case-study/organising-lifes-work.
[107] 'Jack Kirby, SMG'.
[108] ACE, 'Export Licensing for Cultural Goods', 6 (13).
[109] NB. The Committee can visit if the object is too large or fragile. Ibid., 14 (43), 8-9 (27).
[110] 'Jack Kirby, SMG'.
[111] Glew, 'RE: The National Archives: Protecting Digital Assets [19 February]'.
[112] HM Treasury, *Waverley Report*, 63 (16).
[113] BL, 'Sustaining The Value: The British Library Digital Preservation Strategy 2017-2020', 2.
[114] The National Archives, 'Digital Strategy 2017-19', 3 (2.2).
[115] HM Treasury, *Waverley Report*, 48, section vi, 239 (1).
[116] Citing Chrissie Iles and Henriette Huldisch, 'Keeping Time: On Collecting Film and Video Art in the Museum' in Bruce Altshuler, ed., *Collecting the New* (Princeton and Oxford: Princeton University Press, 2005), 82.
[117] Anaïs Aguerre, ReACH Project Director at 1:00. V&A, 'ReACH: Towards a New Convention', 2017, accessed 4 February 2019 https://www.youtube.com/watch?v=6Lwpjst6C5E %0A.
[118] ACE, 'Export Licensing for Cultural Goods', 7 (17).
[119] HM Treasury, *Waverley Report*, 45 (228).
[120] See The National Archives, 'Preserving Digital Records', 2019, accessed 13 February 2019 http://www.nationalarchives.gov.uk/information-management/manage-information/preserving-digital-records/; Tom Gollins, *Parsimonious preservation: preventing pointless processes!*, *Online Information 2009 Proceedings*, 2009.
[121] ACE, 'Export Licensing for Cultural Goods', 7 (18).
[122] DCMS Working Party on Documents Manuscripts and Archives, *When can the refusal to provide copies of manuscripts and documents in connection with export licence applications justify the withholding of a licence?* (Unpublished DWP meeting document, 2018), 1.
[123] HM Treasury, *Waverley Report*, 48, section vi, 239 (1).
[124] Marion Crick in Brendan Cormier (ed), *Copy Culture: Sharing in the Age of Digital Reproduction* (London: V&A Publishing, 2018), 105.
[125] Carroll et al., 'A Comprehensive Approach to Born-Digital Archives', 68.
[126] See Information Commissioners Office, 'Guide to the General Data Protection Regulation (GDPR)', 2018,

accessed 1 April 2019 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/711097/guide-to-the-general-data-protection-regulation-gdpr-1-0.pdf.

[127] David S. Wall, 'Policing Cybercrimes: Situating the Public Police in Networks of Security within Cyberspace (Revised 2010)', *Police Practice & Research: An International Journal* 8, no. 2 (2007): 183–205. For the current reporting mechanisms of cybercrime see fig. 2.

[128] Stokes, *Art and Copyright*, 96 (5.7).

[129] Wall, *Cybercrimes: The Transformation of Crime in the Information Age*, 95.

[130] Stokes, *Art and Copyright*, 90–1 (5.3).

[131] Ibid., 96–7 (5.8 a–b).

[132] Patricia Kane, *Letter to Rhian Addison from DCMS TO2019/01378 [8 March]* (Letter, 2019); Kevin Lowrie, *Re: Preventing export of digital cultural assets [13 March 2019]*, *2019* (Email to Rhian Addison, 2019).

[133] Waugh, 'RE: Salman Rushdie Archive'.

[134] Glanville, 'RE: Germain Greer Collection'.

[135] Glew, 'RE: The National Archives: Protecting Digital Assets [19 February]'; 'Jack Kirby, SMG'.

[136] Archives, 'Minutes DWP', point 38; ACE, 'Export Licensing for Cultural Goods', 7 (18).

[137] ACE and PGF, 'Acquisition of Digital Media', 2.

[138] Citing section 178 CDPA [CDPS section 9(3)] in Stokes, *Art and Copyright*, 88 (5.2).

[139] 'Copyright and Rights in Database Regulation' [SI 1997. No. 3032] in ibid., 94 (5.6).

[140] Ibid., 89 (5.3).

[141] Citing C. Gringras, 'The Laws of the Internet' (London: Butterworths, 1997), 163 in ibid., 89–90 (5.3), 95 (5.7).

[142] Noah Horowitz, *Art of the Deal: Contemporary Art in a Global Financial Market* (Princeton University Press, 2011), 82.

[143] 'Conversation with Marion Crick, Head of Collections Management, V&A [27 February]'.

[144] Trust, 'Digital Isn't Different'; British Library BL, 'Business & IP Centre', 2019, accessed 13 March 2019 https://www.bl.uk/business-and-ip-centre/protecting-your-ideas; HM Government, 'Intellectual Property: Copyright', 2019, accessed 13 March 2019 https://www.gov.uk/topic/intellectual-property/copyright.

[145] Shaw, 'RE: Protecting Digital Assets'.

[146] 'Jack Kirby, SMG'.

[147] Zoe Klienman, 'Article 13: Memes Exempt as EU Backs Controversial Copyright Law', *BBC*, 2019, accessed 2 April 2019 https://www.bbc.co.uk/news/technology-47708144; for greater detail see Axel Voss and Pavel Svoboda, 'Amendments by the European Parliament to the Commission Proposal on Copyright and Related Rights in the Digital Single Market and Amending Directives [96/9/EC, 2001/29/EC, A8-0245/271]', 2019, accessed 2 April 2019 http://www.europarl.europa.eu/doceo/document/A-8-2018-0245-AM-271-271_EN.pdf.

[148] Intellectual Property Office, 'IP and Brexit', 2019, accessed 21 March 2019 https://www.gov.uk/government/publications/ip-and-brexit-the-facts/ip-and-brexit.

[149] 'Jack Kirby, SMG'.

[150] ACE, 'Export Licensing for Cultural Goods', 28 (12).

[151] Legislation.gov.uk, 'The Export Control Order - 3231: Schedule 3', 2008, accessed 21 March 2019 http://www.legislation.gov.uk/uksi/2008/3231/contents/made. PL9005 includes provisions for restricting 'the export or "transfer by electronic means" of the following "goods", "software" or "technology"'.

[152] ACE, 'Export Licensing for Cultural Goods', 6 (13).

[153] The National Archives, 'Copyright and Related Rights', 2013, accessed 13 February 2019 http://www.nationalarchives.gov.uk/documents/information-management/copyright-related-rights.pdf.

[154] DPC, 'Digital Preservation Handbook'.

[155] ACE, 'Export Licensing for Cultural Goods', 7 (17).

Appendix 1: Analysis of the Waverley Report phrasing

Extracts from HM Treasury Committee on the Export of Works of Art, *The Export of Works of Art Etc.: Report of a Committee Appointed by the Chancellor of the Exchequer [Waverley Report]* (London: Her Majesty's Stationery Office, 1952). Although revisions have been made since the 1952 report, these are dispersed throughout multiple documents, many not publicly accessible. The Waverley should be revised and published in full. Grey boxes are author's commentary.

Page 19
96. The conclusions we draw are: -

a. that export is best applied to a small number of objects of high importance, and become progressively less effective and more irksome the larger the number of objects it is sought to control;
b. that great uncertainty and unfairness can result unless it is accompanied by a clear statement of policy and adequate safeguards;
c. but that, even then the fact that it operates at so late a stage is bound to cause frustration and disappointment.

96b. This is the case with digital, there is not a clear statement of policy that RCEWA can proceed with.

97. For these reasons it seems clear that it ought only be applied to limited categories of objects of high importance.

97. Are digital cultural assets really viewed as objects of high importance? Without rephrasing, digital assets could potentially be overlooked altogether in this regard.

Page 44
220. Documents and archives, so far as they fall clearly into the second of the above categories, are different. They are the raw materials and basis of research in many fields. Without them whole tracts of knowledge may remain obscure.

220. [Author's emphasis] Born-digital material certainly falls into this archival category as they exist only in one format, and to be researched comprehensively would mean assessing them in their original intended manner. However, the format of digital still needs to be emphasised as a potential medium of an archive.

221. Secondly, to an even greater extent than other objects, documents and archives depend for their value on related material. A work of art is of value by itself, but a document is usually of significance mainly in relation to other documents, and can only be studied profitably with them. The whereabouts of the original, or of copies if copies will do, it therefore a matter of great importance.

222. It follows, not only that collections are important, but also that they must as far as possible be kept together. The student needs all the documents, which may have to be studied in a number of different contexts, and it is indeed sometimes more important to prevent collections from being dispersed than to save them from being exported.

Page 48
239 (1). Save where there is permission to the contrary, the originals of manuscripts, documents and archives should never be exported without copies being made and deposited in an appropriate place. … Exporters will then be required to undertake that copies will go to the appropriate repository, or alternatively to show

239 (1). Assuming that owners of digital cultural assets are not infringing on the copyright of others, it would be relatively easy (depending on size and format) to copy the digital cultural asset. As such, why would any digital asset ever be stopped at export if research copies were so easy to make? However, if the owner doesn't have the technical knowledge they may not be able to provide an unabridged and usable copy. Should guidelines in fact state copying should be done by a digital archivist?

For further information see ACE 'Export Licensing for Cultural Goods', 7 (17), 6 (13).

cause why this requirement should be waived as being unnecessary or unduly burdensome, or as imposing an unfair financial burden.

Page 62-3

2. In every case in which export is prevented the owner must be assured of an offer to purchase at a fair price (paragraph 97)
3. Those in charge of our public collection should look ahead as far as possible, and do all they can to secure *desiderata* before they come into the export market (paragraph 123)

2. Values should be based on market trends to establish a fair price, but what occurs when there is no market?

…

8. The tests for assessing the importance of an object of national importance are:-
(1) Is it so closely associated with our history and national life that its departure would be a misfortune?
(2) Is it of outstanding aesthetic importance?
(3) Is it of outstanding significance for the study of some particular branch of art, learning or history?

8. 'Objects' is an ambiguous phrase which may not be interpreted to include born-digital assets which may solely come in a data format. The ACE 'Export Licensing for Cultural Goods' (28) has improved on this with 'any kind or medium which are more than 50 years old'. Outlining 'any medium' ensures that digital cultural assets could be considered archival material. As such, all early digital material would require a licence, yet still excludes any more recent developments in technology or data.

As digital is so engrained in our daily lives becoming a reflection of our society and culture, digital cultural assets have the potential for fall under Waverley 1 and 3 alongside archival material. But could an Expert Adviser truly make a clear judgment call based on the current phrasing of the criteria? The ACE 'Export Licensing for Cultural Goods' (36: schedule to 34 (1k)) further expands that they item must be 'created and/or accumulated by an individual, family, corporate body or institution, which has survived or been preserved as evidence of their purpose and activities'. This reinforces that digital archives would be included but is still not explicit enough.

The question whether export should be prevented will depend on how high the object stands in one or more of these categories, and on whether a reasonable offer to purchase can be assured (paragraphs 187-188).

Without suggesting the breadth of possible mediums, it could also be argued that digital is not included and would precarious be judged on a case to case basis.

…

16. A list of valuation experts should be drawn up to whom cases can be referred for their advice on values (paragraph 249).

16. No such list currently exists for digital cultural assets. Criteria should also be established of what constitutes as a digital expert as in today's society anyone can claim to have digital skills.

Appendix 2: Points of disjunction in the export process and supporting mechanisms