



# NATIONAL AND STATE LIBRARIES AUSTRALASIA

## Digitisation Research Project

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*“Material that is not digitised risks being neglected as it would not have been in the past, virtually lost to the great majority of potential users.”<sup>1</sup>*

*“... [the] arcane and abstract nature of [digitisation] projects makes it difficult to present them in a way that is compelling to a non-specialist...this failure is directly responsible for the relatively poor attention these projects command in the funding world.”<sup>2</sup>*

*“There is no formulaic answer or single approach to achieving sustainability.”<sup>3</sup>*

*“...digital collections represent significant potential economic and social value, provided they are made accessible in the best possible way.”<sup>4</sup>*

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# 1 Executive Summary

The digitised collections of cultural institutions represent a highly valued group of resources that are used by people from all walks of life in a variety of contexts ranging from higher education and schools, through to the research community, business and creative industries. In digitising collections, institutions are opening and encouraging use of previously difficult to access content; increasingly this content is being used to address complex national research and policy issues, and deliver socio-economic and cultural benefits for individuals as well as the broader community.

Although cultural institutions are well aware of the multiplier benefits to be derived from digitised content, including convenient access, re-use and creation of new content, as these benefits are often intangible digitisation can be difficult to 'sell' to government and other potential funders.

There is no single method or approach that will guarantee government funding support for digitisation; however, cultural institutions (or potentially a consortium or sector) can improve the likelihood of success by demonstrating that their digitisation efforts directly support 'big picture' public policy goals and objectives, such as a competitive economy or the national brand. Demonstrating impact needs to cover social and economic benefits with a multi-dimensional approach that includes a compelling narrative, evidence-based data and traditional (usually quantitative) performance datasets.

Government support for mass digitisation activities undertaken by cultural institutions is quite clearly influenced by the status of the political, economic, social, technology, and legal environments. Typically, countries that are highly ranked by the OECD for ICT/connectivity indicators have opted to integrate mass digitisation as a specific strategy within an overarching national digital or information policy: this approach combines public investment with quantifiable targets for the large-scale digitisation of cultural heritage materials.<sup>5</sup> Similarly, some governments have chosen to fund mass digitisation as a means to deliver economic efficiencies and/or stimulate employment during periods of economic decline.

While the public purse provides the principal source of direct and indirect funding for digitisation across all cultural domains and is likely to remain so, there is an emerging trend to supplement this income through the development of collaborative arrangements and Public-Private Partnerships.

At this stage it appears that, although still small in number, the most successful Public-Private Partnerships are those that combine large-scale public institutions with equally large private organisations. In this highly competitive funding environment, it is argued that private funders are looking for institutions that can demonstrate high levels of 'attention and authority' (basically patronage or throughput) over content, which is a criteria that obviously favours large-scale over small and medium-sized institutions.

Another nascent trend emerging from the volatility of the online environment is a willingness to explore, within the parameters of the institution's core public service mission, revenue generation options that go beyond traditional licensing schemes. Given that traditional funding models have been built on and reflect an ethical position that ties publicly funded institutions with equitable access, the concept of revenue generation remains very much at an experimental stage. Most institutions are continuing to support digitisation based on a mixture of funding generated from public and private sources: within this context most digitisation is critically dependent on support from the host institutions provide, especially in the form of resources, knowledge and expertise.

## **2 Introduction**

Over the past twenty years, cultural institutions around the world have committed considerable time, effort and funds to digitise collections and make these available online. During this period, the growth of online information has increased exponentially, and so dramatically, that information that is not available online risks invisibility. Inevitably, the shift to the online environment has seen private and public institutions emphasise the importance of mass or industrial-scale digitisation processing, rather than small conversion projects. As most cultural institutions are using operational budgets to digitise collections, supplemented by support from the philanthropic and government sectors, finding the necessary funding to expand digitisation is crucial.

Mass digitisation efforts to date tend to have been undertaken as a Public-Private Partnership: these may include revenue generation options for the institution to offset costs as well as providing a return on investment for the private partner. Although Public-Private Partnerships are being used by a number of large international institutions to support mass digitisation efforts, they have yet to be seen in Australia. Recent research by the Joint Information Systems Committee (JISC) and the European Commission has looked at the emerging funding role and revenue models used by Public-Private

Partnerships in the online environment: the various models, discussed later in this report include licensing, which is a familiar model in the library environment. Public-Private Partnerships are likely to involve a number of trade-offs. The implementation of new revenue models will, for example, involve additional costs to the institution. Similarly, external providers may well have priorities that conflict with existing internal policies designed to digitise rare or vulnerable material, research digitising priorities, and access policies (which may involve links to external archives and third parties). Institutions working in this environment are looking to adopt creative solutions with their private partners to ensure that they do not compromise their core missions. A common default position in partnership models, for example, is to mandate that digitised collections must always be freely accessible to the public within the library building.

Unlike Australia, many international projects undertaking large scale digitisation of cultural heritage materials have received government support under an overarching national digital strategy<sup>6</sup> or in the case of the European Union an intra-national information strategy.<sup>7</sup> Within this context, mass digitisation of cultural heritage materials is identified as an integral part of a nation's broad information infrastructure, necessary to build and maintain competitive advantage and reap the benefits of the global digital economy. In other words, the creation of a critical mass of digital content is seen to be just as important, and actually improves the investment and value of high-end information and communication technology, such as national broadband connectivity. Conversely, without digitised content these *“technical developments [are no] more significant than mere playthings.”*<sup>8</sup>

Funding for digitisation has been affected by the 2008 global economic downturn. Although the poor economic climate has encouraged a number of governments to provide additional specific, temporary funding for digitisation projects as an economic stimulus measure, digitisation is a process that needs ongoing funding and political support. International research suggests that securing government support is dependent on institutions being able to clearly demonstrate their value to broad, national socio-economic, cultural and political goals. This in turn requires institutions to develop a formal planning framework to accurately measure, document and report on costs and benefits, a process which many institutions have yet to undertake.

While it is clear that cultural institutions are well acquainted with the multiplier benefits produced by digitisation, including: convenient access, re-use and creation of new content, and most are also adept

at keeping statistical records such as number of items digitised and downloads, institutions have failed to fully map out these benefits for their funders. What is missing is a compelling narrative that combines existing statistical information with (new) evidence-based data to illustrate the broader flow-on benefits for learning and research, and the community. This missing link is critical as the benefits of digitisation are often not immediately obvious or tangible to external funders.

American research suggests that in addition to delivering a clear message about the value of digitisation, political interest in funding bids is more likely to be supported where the public policy agenda is stable, and where policy responsibilities are clearly integrated and coordinated. Inconsistent or distributed policy responsibilities are seen to have contributed to funding difficulties in Ireland, appear to have resulted in a duplicate work being done on digitisation metrics in Germany, and do need to be taken into account by institutions working within a federal governmental system, such as Australia.

Notwithstanding highly successful collaborative efforts within sectors, such as the Australian libraries national newspaper digitisation project and various online portals, diversity within and between the different cultural domains is a barrier, which reduces their political profile and funding success.

### **3 Background and methodology**

Members of National and State Libraries Australasia (NSLA) like their counterparts in collecting institutions around the world have been progressively digitising cultural heritage materials over the last two decades. Digitisation is an expensive and time consuming process, largely dependent on philanthropic contributions and/or re-direction of scarce operational funding. Despite lobbying efforts to undertake mass digitisation of cultural heritage collections, the Australian government response has been minimal having failed to move beyond tacit acknowledgement that digitisation is worthwhile.<sup>9</sup> Possibly this situation is indicative of Australia's historical inability, despite a number of attempts, to define and implement a national information policy. Before developing further proposals for funding, NSLA decided to commission an in-depth research effort to describe and analyse the strategies that have been successful in other parts of the world, with the intention that the research findings will be used by NSLA, collaboratively and individually, to inform future digitisation funding proposals to government.

The scope of the research project aimed to cover the following areas:

*“A survey of international successes and failures in attracting funding for digitisation of library, museum and cultural collections, including any information available on the focus of submissions or bids;*

*Analysis of selected cases/countries where success has been achieved and their example may be helpful for Australia and New Zealand, particularly:*

- *Economic, social research or statistical measures showing use and value of digitised materials;*
- *Persuasive language, framework and positioning of digitisation of cultural collections;*
- *Environmental factors, external to library proposal, that have triggered endorsement of digitisation funding bids.*

*Preliminary exploration [if time allows] of possible sources of funding for digitisation projects in Australia and New Zealand.”<sup>10</sup>*

The research project methodology used three approaches: an analysis of primary and secondary literature published by institutions, peak bodies, government departments and research organisations; a survey of key international institutions;<sup>11</sup> and case study analysis. Despite the very broad scope of the research project, it became apparent at an early stage in the research that mass digitisation efforts and government funds for these activities are largely concentrated within the library and archive domains.<sup>12</sup> It was also apparent that the project’s geographic focus would be directed towards European countries which, largely thanks to the organisations such as the European Commission and JISC are publishing the most active research in the area of government funding for mass digitisation: this has influenced the geographic location of the case studies presented in this report. As digitisation is a constantly evolving area of study this paper reflects a particular point in time. It should be noted that all websites and web-based documents identified in this document were accessed between April and September 2011. Conversion rates, are provided where appropriate as a guide, since they are based on exchange rates for 28<sup>th</sup> September 2011 using a universal conversion tool provided on [www.xe.com](http://www.xe.com)

#### **4. Digitisation costs**

Digitisation is an expensive process, requiring an upfront and ongoing investment to ensure that once digitised, analogue materials remain publicly available for the long term.<sup>13</sup> Cost analysis undertaken for the European Commission has revealed that establishing actual costs is fraught with difficulties as many institutions have not attempted to understand or analyse costs. More often than not the information is

incomplete as hidden costs, particularly staffing are not included: it is likely that this omission is in part a reflection of the use of general operational budgets to fund digitisation. While it is clear that there is no “single definitive answer’ ....[since] *the actual cost depends both on the organisational context, the complexity of the material and the sophistication of the output*” institutions do need reasonable cost projections to inform planning and funding strategies.<sup>14</sup>

The European Commission has been keen to establish the cost of digitisation for cultural heritage materials. In 2007, the Commission commissioned the Chartered Institute of Public Finance and Accountancy (CIPFA), United Kingdom to undertake a two-year study to chart the progress of existing and planned digitisation activities in Europe as a means of demonstrating value, and keeping key stakeholders particularly funders and policy makers informed.<sup>15</sup> This study focused largely on quantitative data: specifically, digitisation costs including investment and funding sources, as well as the volume and growth of the digital conversion of analogue collection materials. Some qualitative data on the format type and access conditions for digitised collections was also collected. The final report from the CIPFA released in May 2009, *NUMERIC: Developing a statistical framework for measuring the progress made in the digitisation of cultural materials and content* represents the collation and analysis of the digitisation activities of 788 institutions from 27 Member States. While this report provides some useful indicative results such as the previously unknown median unit digitisation costs for particular domains (Table 1) it is acknowledged that this information does not provide a “*sufficient base for comparisons of international progress.*”<sup>16</sup>

Perhaps one of the most significant, but not entirely unexpected, results of the CIPFA study is that it highlights the many discrepancies and gaps in digitising costing methodologies used by institutions and across domains. Although this may be partly attributable to the diversity of formats, work processes and technologies being used – factors picked in a follow-up costing study commissioned by the European Commission costing study in 2010 - the more immediate problem raised by the CIPFA was simply a lack of data within institutions. Despite the importance of estimating costs for institutional planning and funding purposes the CIPFA found that few institutions had implemented systems to actually record and manage data about financial expenditure on digitisation activities, and as already noted more often than not completely failed to include staffing costs.<sup>17</sup> Inadequate or incomplete costing data is a recurring theme in the research on digitisation which is noted, for example, by JISC’s 2009 research into sustainability models.<sup>18</sup>

The CIPFA did attempt to project some big picture future costs for planned digitisation projects, coming up with a figure of €408 (AUD \$559.1) million, but once again this is an estimate which it is acknowledged represents just a small proportion of the true cost requirements for digitisation in Europe since it was based on the 35% of institutions which had a documented strategy or plan, moreover this figure does not even begin to take into account the 9.5% of survey respondents that have yet to undertake any digitisation. Crucially many of these plans did not factor in the cost of staff time. In 2010 costing research conducted for the European Commission’s Comité des Sages estimated that €100 billion would be required to digitise the collections of Europe’s libraries, archives and museums. The cost to convert the collections of libraries alone would be €19.77 billion: a sum that would enable the digital conversion of 77 million books, 24 million hours of audiovisual programmes, 358 million photographs, 75.43 million works of art, and 10.45 billion pages of archives. These cost estimates exclude collections already digitised as well as any ongoing costs for preservation, hosting or infrastructure.<sup>19</sup>

**Table 1: Median reported digitisation costs**<sup>20</sup>

Type of cultural institution	Images alone €/page	Text & images €/page	Text alone €/page	Audio €/page	Film €/page	Video €/page
Archive/records office	3.00	0.58	0.77	29.11	100.00	100.00
A-V or film institute	5.36	0.72	0.32	17.92	128.89	7.00
Broadcasting institute				78.84	678.10	100.00
Art museum	5.00	1.00	0.80	24.23	54.00	35.02
Science tech museum	1.50	0.25	0.45	16.71	16.37	13.02
Other type of museum	6.00	1.98	0.32	38.33	26.67	26.67
National library <sup>21</sup>	1.00	0.50	0.48	58.42	16.76	55.00
Higher education library	0.72	0.81	0.10	6.42	8.00	5.46
Public library	0.96	0.65	0.70	9.70		
Special or other library	1.03	0.59	0.19	35.00	1,040.00	120.00
Other organisation	2.00	0.87	0.55	39.00	22.22	35.13

## 5. Funding sources for digitisation

Globally, governments are the principal source of (direct and indirect) funding for digitisation across all cultural domains. The Primary Research Group’s most recent survey of library and museum digitising

activity, which covers a diverse range of largely North American institutions plus a small international contingent, has identified that, on average 40% (of North American) and 62% (of European) institutions are channelling funding for digitisation from institutional operating budgets.<sup>22</sup> A further 32% (in North America) to 30% (in Europe) of all digitisation funding comes from project-based public grants, while the remaining budget (just under 10% in North America and Europe) is financed by the private sector (in the form of donations, in-kind contributions, commercial activities, and partnership arrangements).

Institutions are also re-directing grant and fund raising revenue into digitisation projects, particularly for the conversion of non-text materials such as audio and video. For American-based institutions grant and fund raising revenue accounts for 32.35% of the digitisation budget, rising to 40% budgets for international institutions. Endowments represent a significant proportion (9%) of this funding source.<sup>23</sup>

Despite the continuing impact of the global economic downturn, institutions based in the United States of America displayed a greater level of confidence in their future ability to raise funds for digitisation: 28.6% of American institutions believed that prospects were 'pretty good or excellent' compared to a 5.88% confidence rating for institutions located outside the United States of America.<sup>24</sup> In general, most institutions in the Primary Research Group survey are providing open access to digitised collections. A small percentage of institutions, just over 16% are provided fee-based access, controlled through licensing: licensed access is largely used for photographic works and tends to be concentrated within the museum (27.78%) and special library (20%) sectors. The average annual revenue generated through licensing is USD\$27,820 (A\$25974). With the exception of the impact of digitisation on reproduction sales (which have seen an overall increase of 22.22% on sales), the Primary Research Group survey does not cover any performance measures for digitisation activities.<sup>25</sup>

The 2009 CIPFA study noted earlier found that funding for digitisation in European institutions is largely derived from operational budgets (62.1%), with 30% provided through specific government grants and programs, and the remaining 8% comes from other revenue streams including commercial activities, in-kind support and private donations. Only the larger organisations, such as national libraries, are earmarking specific funds to undertake digitisation as a targeted rather than opportunistic activity. Although access to digitised resources is free in most institutions, 30% of digitised material in libraries and nearly 50% in archives have yet to be made accessible to the public online.

**Table 2: Funding sources for digitisation: library sector.**<sup>26</sup>

Sources in %	Own resources	Government programs	Private donations	Other (in-kind support, revenues from commercial arrangements)
National Library	44.6	36.0	16.6	2.8
Higher Education Library	39.6	30.7	6.1	23.5
Public Library	67.8	21.5	7.4	3.3
Special and other	53.3	41.1	1.0	4.6

Significantly, the biennial European Commission reporting requirements covering digitisation, accessibility and digital preservation are helping to build a picture of the national budgeting allocations and priorities for the digital conversion of cultural heritage materials. For example, in the most recent round of reporting to the Commission in February 2010 the following annual national expenditure figures were provided: France €30 (AUD\$41.1) million plus; Spain €8.7 (AUD\$ 11.9) million and Finland €6.2 (AUD\$8.5) million. Five year expenditure results were given by the Czech Republic €34 (AUD\$ 46.6) million and Belgium €27 (AUD\$37) million over five years.<sup>27</sup>

## 6. Public-Private Partnerships

The British Library notes a “*growing tendency to expect digitisation to be paid for from core funding*” which has seen some institutions, such as the Bibliothèque National de France (BnF) Gallica project and the Royal Dutch Library’s newspaper digitisation projects have relied on this source of funding.<sup>28</sup> For other institutions, given “*the acute lack of public resources, not to mention sovereign debts*” supplementary funding from collaborative arrangements and partnerships with the private sector (Public-Private Partnerships) will continue to remain significant.<sup>29</sup>

The European Commission’s stated digitisation strategies deem that Public-Private Partnerships (PPP) provide an important vehicle for Member States to achieve digitisation targets. As Member States regularly report on the progress of such partnerships, the European Commission has been able to track partnership characteristics, including take-up and relative success rates across the cultural domains. At this stage it appears that the most successful partnerships, although still small in number, are those that combine large-scale public and private organisations. In this highly competitive environment, it is argued that private funders are looking for organisations that can demonstrate high levels of “*attention and*

*authority*” (basically patronage or throughput) over content, a criteria that obviously favours large-scale over small and medium-sized organisations.<sup>30</sup>

Although Public-Private Partnerships are not limited to any particular domain, the CIPFA study identified that libraries have the greatest participation rate.<sup>31</sup> Large-scale and high profile Public-Private Partnerships within the library domain include: the Microsoft Book Digitisation Program with the British Library(2005-2008);<sup>32</sup> the Google Books Library Project (a partnership involving the Bodleian Library at Oxford, Germany’s Bavarian State Library, Spain’s Complutense University of Madrid and Library of Catalonia, Belgium’s Ghent University, Switzerland’s University Library of Lausanne, France’s Lyon Library, the Italian Culture Ministry, the Austrian National Library, the Royal Dutch Library and others);<sup>33</sup> Telefonica’s five-year €10 (AUD\$13.7) million sponsorship for the National Library of Spain’s (BNE) Hispanic Digital Library; the (2010) brightsolid newspaper digitisation project with the British Library;<sup>34</sup> and the Google-British Library book digitisation project, announced in June 2011.<sup>35</sup> Smaller scale partnerships include ProQuest’s Early European Book digitisation project with the Bodleian Library of Oxford and the Royal Danish Library,<sup>36</sup> and more recently ProQuest’s partnership to digitise scientific and medical books from the collections of the Wellcome Library.<sup>37</sup> In addition, private foundations, such as the Bill and Melinda Gates Foundation are funding small-scale digitisation projects in various libraries around the world.

The European Digital Libraries Initiative has also recognised that Public-Private Partnerships have a strategic role to assist cultural institutions to undertake large scale digitisation projects: in 2008 case study research identified at least seven different business models were operating in cultural institutions across Europe and North America.<sup>38</sup> Within the library domain, the British Library suggests that such partnerships generally fall into one of three types: sponsorship, secondary publisher licensing, or search engine advertising. Although advertising is a model that has not had much exposure to date, it is recognised that partnership models will continue to evolve alongside changes in the online content environment. The Netherlands audiovisual digitisation project, *Images for the Future* is an example of a very new type of funding partnership model, as public funds for this project included the development of value-added services to generate and return revenue to the public purse. Although this model has yet to be evaluated it is expected that the Images of the Future will generate a return of around €64 million between 2014 and 2025.<sup>39</sup> Another approach flagged by France is the development of a Grand Emprunt

National (Great National Loan) to digitise up to one million out of print twentieth-century works as alternative revenue sharing approach to public-private partnership.<sup>40</sup>

Private partners that have committed support for digitisation projects are seen to be driven by either commercial interests or corporate citizenship objectives. Although the commercially exclusive interests of a private partner may appear to contradict the open access and digitisation objectives of cultural institutions, these relationships are generally framed within specified limits, such as time-frames, markets (such as the education sector), or search/access (free access may be restricted to users within the institution but attract a fee to view, or a fee to download). In other words, it is acknowledged that there is a need to take a balanced approach which will, “*provide the level of incentive for private partners to engage in digitisation and making available the assets of cultural institutions.*”<sup>41</sup> Examples of Public-Private Partnerships operating within this context include: the British Library and Cengage Gale agreement to digitise historical newspapers, which allows Gale to commercially repurpose material for sale to the public, whilst free access is provided to the Higher Education sector. Another example is the British National Archives Licensed Internet Associates which delivers royalty payments from transcript and image downloads to the National Archives and private partners.

## 7. Revenue models

JISC has conducted ongoing research into digitisation and revenue models in response to sustainability concerns expressed by funders and institutions.<sup>42</sup> To date this research has covered three specific areas: a review of potential revenue models (2008);<sup>43</sup> case study analysis of specific models used by cultural institutions (2009);<sup>44</sup> and, most recently a review of strategies and practices taken from the funder’s perspective (2011).<sup>45</sup>

Although the case study research conducted by the JISC does not rank or predict the viability of particular revenue models, it is clear that:

- Revenue options are still very much at the experimental stage;<sup>46</sup>
- Institutions are generating revenue using multiple strategies, often based on a combination of earnings and donations;
- Successful revenue models are dependent on meeting the price a user is willing to pay;
- Implementation of any revenue model creates new costs for projects;
- Licensing and subscription arrangements are favoured by the library sector; and that,
- Support from the host institution remains a critical factor.

It is also important to note that new revenue options are also being influenced by government requirements that expect cultural institutions to generate more private revenue. In the Netherlands, for example, institutions receiving government grants will need to raise at least 17.5% of their own income from 2013 onwards, and failure to do so may see their revenue reduced.<sup>47</sup>

## **7.1 Subscription and licensing revenue models**

Subscription or licensing models work from the premise that paid access is justified on the basis that the content or product is unique or exceptional, and hence tend to target specific audiences and disciplines: the University of California's digital library of Greek literature, the *Thesaurus Linguae Graecae* (TLG) is one example cited by JISC's case study research. Digitisation projects that are using the subscription model need a substantial level of demand and as paying subscribers tend to have high expectations, subscription-based content needs to be frequently updated and supported. In addition to these ongoing costs, subscription models attract a variety of additional costs such as marketing.

Licensing content to commercial third parties or directly to the end-user community (print on demand or pay per view) are common strategies used by institutions to offset and reduce the costs associated with digitisation. It is also an option that has been increasingly used by large-scale digitisation projects, such as the British National Archives, the British Library with JISC and Gale Cengage newspaper digitisation project (and other British Library newspaper projects) and the Bodleian Library with ProQuest on the Electronic Ephemera Project. Commercial licensing to third parties can entail risks to long-term access and preservation, and requires those institutions duty-bound to make content freely accessible to ensure that there are alternative fee and free options available for users (typically these options include the provision of free access within the library building, within a geographic location, or within a specific community, such as the Higher Education sector).

## **7.2 Donated revenue: endowments, grants and fundraising campaigns**

The well-established tradition of philanthropy in the United States of America has enabled a number of institutions to fund digitisation projects through endowments and gifts. Philanthropic support, for example has been of critical importance to the ongoing development of the large-scale projects such as the American Memory website<sup>48</sup> and the World Digital Library.<sup>49</sup> Endowment funding models, such as Stanford University's *Stanford Encyclopedia of Philosophy* and the University of California's *Thesaurus*

*Linguae Graecae* are more prevalent within the academic sector. In the United Kingdom, JSTOR ([www.jstor.org/](http://www.jstor.org/)) is seen to be using an endowment style approach, as it is charging participants once only Archive Capital Fees which are then deposited into a large reserve designated for preservation activities. As the endowment funding model of building on capital needs to generate a return on investment equivalent to twenty times the annual operating digitisation budget, it is clear that the establishment costs in terms of time and effort are very substantial and are consequently used by institutions as a short-term supplementary funding source.<sup>50</sup> The endowment model has attracted recent interest in the United Kingdom: in July 2011, the Department of Culture, Media and Sport launched a £55 million fund to assist cultural institutions to develop future financial stability.<sup>51</sup>

Leveraging volunteer efforts to directly or indirectly support digitisation is a relatively new concept, which is being explored by a number of projects. In the case of Stanford University's *Encyclopedia of Philosophy*, users are targeted to provide direct funding support.<sup>52</sup> Alternatively, institutions such as the British National Archives and the National Library of Finland have established or are considering a trial to ingest user-generated digitisation as another option to build online content at minimal cost to the institution. Irrespective of the particular revenue model for digitisation adopted by a cultural institution sustainability will ultimately depend upon user demand and competitive advantage.

## **8. Environmental constraints and drivers**

Globally, copyright legislation represents the greatest constraint on mass digitisation of cultural collections.<sup>53</sup> Orphan works are of particular concern due to their numbers in collections and the high costs involved clearing copyright.<sup>54</sup> The British Library for example has identified that up to 40% of its collections fall into the category of orphan works, while a European Commission report suggests that around 3 million European books are orphan works.<sup>55</sup> According to a study conducted by the Strategic Content Alliance it would take more than 6.5 million working days to trace the owners of orphan works in the United Kingdom – this enormous workload is obviously unachievable.<sup>56</sup> Significantly, the European Commission recommended a legislative solution for orphan works in 2006, and as this has yet to be taken up, the Commission has recently put forward a proposal to the European Parliament to authorise certain permitted uses of orphan works by cultural institutions as part of the Europe 2020 Strategy.<sup>57</sup>

Government licensing initiatives designed to promote open access and re-use of public sector information (such as data.gov.uk) are providing peripheral environmental support for digitisation but this will not make a substantial difference unless (or until) collections held by cultural institutions are defined within the parameters of public sector information. Open access is widely supported amongst cultural institutions as it is critical enabling the use and re-use of digitised collections. The Conference of European National Librarians (CENL) recently agreed to adopt an open license for datasets supplied to Europeana, using a Creative Commons Universal Public Domain Dedication (CCO) licence: this will include metadata relating to Google's mass book digitisation of the Austrian and Netherlands libraries.<sup>58</sup> Other actions promoting investment and Public-Private Partnerships are having some impact on digitisation activities. These include legislative actions, for example, taxation incentives (advocated by the European Commission); contract incentives (such as the United Kingdom's *Private Finance Initiative*), and organisational support (such as the *Partnerships UK* which acts to broker deals between the private and public sector).

Economic drivers, especially economic competition from the Google Book Digitisation program has been a major influence on government funding for digitisation.<sup>59</sup> The most notable response to this competition from the private sector came from France; however other countries, such as Germany and Japan, have not been immune to this influence. Economic drivers are also seen to be influential in times of economic depression: although an economic downturn reduces the overall pool of available funds from government and private organisations, in recent times governments have provided temporary funding for digitisation projects as a means to boost employment in Germany, Japan, and the United Kingdom. Economic incentives are also behind government initiatives to fund collaborative and centralised approaches to digitisation, for example in Finland and South Korea.

The technical environment, the maturity of information and communications technology infrastructure and connectivity within a country does have an important influence on interest and support for digitisation: there is a link between highly connected countries and demand for digital content. This is evident in the digital information policies of many countries, and has had a positive impact on government funding support for mass digitisation of cultural heritage collections.

## 9. Making the case for funding support

Case study research indicates that there is no standard template to guarantee funding support for institutions. The JISC e-content director, Catherine Grout<sup>60</sup> succinctly points out that there are four arguments or themes based around ‘inspiring research and scholarship’ that are driving the argument and informing funding submissions for digitisation in the United Kingdom, these are:

- The education and research imperative;<sup>61</sup>
- The economic imperative;<sup>62</sup>
- People and communities;<sup>63</sup> and,
- Political arguments.<sup>64</sup>

Following the impact of public sector cuts in the United Kingdom, Grout has argued that funding submissions must continue to stress that digitised content supports research in all disciplines; improves the quality of education and research at all levels; is essential for global competitiveness and provides an opportunity to assert a national brand and appeal to tourism. Within the European context the link between the national brand and developing national cultural heritage collections online has emerged as a pivotal policy theme over the last decade: it has driven France to provide €750 (AUD\$103.1) million to digitise cultural heritage materials, and seen the Netherlands commit to digitise every Dutch book, newspaper, and periodical from 1470 onwards.<sup>65</sup>

Over and above these considerations the research suggests that a persuasive funding argument needs to include ‘bottom line’ evidence that clearly demonstrates the value, and benefits of digitisation based on an understanding (through monitoring and measuring) of needs and demand for digitised content. Institutions are advised to demonstrate the return on investment based on traditional performance (quantitative and qualitative) datasets combined with an impact assessment to show how digitisation makes a difference, and creates new opportunities. An established track record or capacity to deliver is also integral to the persuasive argument. Institutions should, where possible, seek to advance their funding argument from a collaborative perspective, linking the value of many small digitisation projects will provide leverage through scale. This perspective can also be logically linked to the process of mass digitisation as a means to deliver cost efficiencies and is an approach recommended by the European Commission.<sup>66</sup>

## 10. Performance Measures

According to the CIPFA study, establishing the link between the investment in digitisation and the benefit to users is dependent on more (and more consistent) information on the usage made of digitised collections.<sup>67</sup> European Union Member States and most institutions are required to establish and report on quantitative targets for digitisation and use of digital collections. While quantitative data (such as the number of items digitised or number of digital downloads) remains important, there is a distinct lack of definitional consensus or understanding on these performance measures.<sup>68</sup> Recent research, undertaken by Simon Tanner and Marilyn Deeghan for the Higher Education Funding Council in the United Kingdom, has sought to address this problem and go beyond concepts of simply performance based datasets to establish value and evidence based data using the Political, Economic, Social, Technological, Legal and Environmental (PESTLE) and Balanced Scorecard methodologies. The Political, Economic, Social, Technological, Legal and Environmental methodology was used to analyse the benefits of digitisation projects by highlighting the perspectives of stakeholders, which Tanner and Deeghan suggest have been previously underrated. These authors advocated the use of Balanced Scorecard across public collecting institutions, research bodies and government departments noting that this methodology is becoming increasingly popularity amongst social media organisations and has been used by institutions such as the Getty Museum to measure the audience impact and benefits of digitisation.<sup>69</sup>

## 11. Studies on the social, economic and environmental impact of digitisation

There are relatively few studies looking at the broad social, economic and environmental impacts of digitisation as opposed to cultural sector services in general. As the European Commission acknowledges, the deficit of longitudinal studies is a problem as it represents a significant gap in knowledge about the added value that digitisation brings and this information is needed to assist future funding and planning decisions. Recent socio-economic research conducted in the Netherlands however is worth noting and includes: an economic and social cost-benefit analysis of mass digitisation (Dutch Foundation for Economic Research, 2006); research into users and usage of digital cultural resources in the Netherlands (Netherlands Institute for Social Research, 2008); an analysis of the cultural impact of digitisation (Utrecht University 2009); and, a cost benefit analysis of a specific mass digitisation project, *Images of the Future* (SEO/Amsterdam Economics 2009).<sup>70</sup> In 2009 the Dutch Foundation for Economic Research (DEN Foundation) undertook a further study of the impact of digital culture in collaboration with the not-for profit think tank Kennisland (Knowledgeland).<sup>71</sup> The aim of this research was to develop

innovative business models for cultural heritage institutions, based on the view that “...*digital collections represent significant potential economic and social value, provided they are made accessible in the best possible way.*”<sup>72</sup> This study stressed that Dutch view that cultural institutions receiving public funding have a reciprocal commitment to implement the government’s cultural and media policy goals,<sup>73</sup> and that institutions need to start operating in a more commercial way to develop and exploit digital collections for the benefit of the organisation and their users. The idea that institutions need to become involved in revenue generation is also apparent in the 2010 CATCHPlus project to develop business modelling software which will be used by nine cultural heritage institutions.<sup>74</sup>

## **12. Case studies**

The following case studies provide overviews, some more comprehensive than others, of current or recent mass digitisation programs undertaken by cultural institutions, particularly by the library sector.

### **12.1 Norway**

Cultural institutions in Norway are seen to form an integral part of the government’s information and communications technology policy, which includes an emphasis on increasing the output of digitisation as a matter of “*national responsibility*” and “*an absolute sector mandate.*”<sup>75</sup> Given this emphasis it is not surprising that Norway is taking a leading role in the digitisation of cultural heritage materials.

During 2005 and 2006, the National Library of Norway released a series of strategy documents to support the development of a national digital library, *NBdigital*, a process which involved the systematic digitisation of the existing analogue collection as well as the introduction of agreements to facilitate the collection of born-digital materials through digital deposit and domain harvesting. *The Digital National Library - Strategy Manifesto 2005* initially sought to establish the value and benefits (educational, economic and political) that digitisation would deliver for the entire Norwegian community. The second strategy document, *Access to Digital Content in the National Library: Strategy Document for the Digitisation of the National Library’s Collection*, established a comprehensive digitisation program: this program was modified in the final strategy released in 2006, *Digitisation of the National Library’s Collection* which established implementation requirements and priorities for the digital conversion process.

The National Library of Norway's digitisation activities have been funded through additional revenue and savings, including internal restructuring, increased budgets and strategic partnerships with publishers to share the cost of the digitisation. The first major partnership saw the Library and the national broadcaster undertake and share the funding to convert and store historical radio broadcasts. Since that time, similar arrangements have been negotiated with three newspapers, including *Aftenposten* (one of Norway's largest newspapers). The National Library currently has 16 digital production lines involved in the conversion of various formats to digital objects: at this stage, the digital collections, which represent unique content derived from more than 170,000 books, 250,000 newspapers, 610,000 hours of radio broadcasting and 500,000 photographs, take up 1.900 terabytes of storage.<sup>76</sup> Digital content is increasing on average by several terabytes per day: about 30% of this digital storage represents material that has been digitally deposited, the remainder results from the Library's digitisation efforts.

The National Library's overriding strategy has been to develop a critical mass of online Norwegian content based on three selection priorities: the first priority being to digitise all public domain material; the second priority is thematic and covers all media types; and the third priority reflects requests from users and other institutions.<sup>77</sup> The Library has worked hard to establish a significant digital presence and competency: it has achieved this through a redistribution of internal resources into digitisation to significantly increase its capacity and output.<sup>78</sup> Library expenditure on digitisation has risen from approximately A\$3.24 million in 2006, through to A\$2.79 million in 2007 and 2008 and A\$4.32 million in 2009, which represents "*considerable sums of money when viewed in light of the fact that approximately GBP 0.3 million [A\$0.43] was granted for digitisation by the Ministry [of Culture and Church Affairs] in 2007 and in 2008 whereas the sum was increased to approximately GBP 1.3 million [A\$2.0 million] in 2009.*"<sup>79</sup> The Library has implemented a secure digital repository to store and disseminate works, and is establishing a licensing framework to facilitate the deposit and access of in-copyright works.<sup>80</sup> These complementary strategies are enabling the Library to position itself as the dominant digital repository of cultural products for public and private providers in Norway.

## 12.2 Finland<sup>81 82</sup>

Finland is one of the world's most connected countries: close to 100% of its citizenry have access to broadband and Finland has guaranteed Internet access (starting from a minimum 1 MBPS in 2010 rising to 100 MPBS by 2015) as a legal right.<sup>83</sup> Finland has made a national commitment to develop an all-

embracing digital lifestyle: it is a commitment based on recognition that digital technologies are essential to economic prosperity, and have the capacity to overcome barriers such as harsh climatic conditions and remoteness to ensure everyone can participate in the digital economy.

Finland has a national digitisation policy covering the cultural heritage collections held by libraries, archives and museums: this was developed under the Government's *Resolution on the Objectives of the National Information Society Policy 2007–2011*. The policy encourages Finland's central institutions progress digitisation efforts, by joining international partnerships including European Union projects, and establishing co-operative networks of libraries, archives and museums to review technology requirements, benchmarking, and selection for possible common digitisation projects. Finland has also established a number of national portals and repositories for digital materials, including <http://agricola.utu.fi/> (a history and research portal), [www.linkkitalo.fi/](http://www.linkkitalo.fi/) (a dedicated science website) and [www.edu.fi/projektit/tammi](http://www.edu.fi/projektit/tammi) (which incorporates online cultural heritage tools for education developed by the National Board of Antiquities, National Board of Education and Ministry of the Environment). Finland's libraries, archives and museums are digitising collection materials at a steady rate: Finland's 2010 report to the European Commission indicates the rate of digitisation has increased by more than 150%, rising from 3,917,000 items in 2008 items to approximately 9,829,000 in 2010. Funding for digitisation however has fluctuated: €4,570,000 or AUD\$6,174,913 (2008), €9,937,000 or AUD\$13,426,721 (2009), €6,205,000 or AUD\$8,384,100 (2010 estimate). Fluctuations in these very large sums of money are influenced by the overall health of the economy, and seen to be responsible for slower than expected rates of digitisation. In 2003, the then Ministry of Education noted that government needed to provide sustainable ongoing funding for digitisation *...ensuring that digitised cultural heritage remains our national property which is accessible to all entails that the materials in museums, archives and libraries are digitised with public financing..[and that] The materials thus digitised will be made available free of charge to all on the Net*. While Finland has made substantial investments to create a scalable operating environment for digitisation, its most recent report to the European Commission suggested that more work needs to be done to fully exploit this advantage.

The National Library of Finland has a strong history in the area of digitisation of cultural heritage materials. In 1998, it established the Centre for Preservation and Digitisation to function as a centre of excellence and a national focal point for preservation and digitisation efforts. The operations of the Centre have been scaled up to provide mass digitisation services. Significant digitisation projects

undertaken by the National Library of Finland include: full text searchable newspaper digitisation (2001); digitisation of recordings (2005); development of work processes and introduction of new technologies to enable mass digitisation and launch of the National Digital Library project (2008);<sup>84</sup> establishing a pilot to monitor library-wide collections (2009); and, most recently crowdsourcing.<sup>85</sup>

The National Library regularly promotes the value of digitisation which it argues is evidenced by increasing demand and use of digitised collections.<sup>86</sup> The Library sees that its successful lobbying efforts<sup>87</sup> are based on “persuasion by doing” and consistency: this includes active participation in international projects; a high national profile; [the] production of considerable amounts of digitised content in the framework of available funding, focusing on quality and building up knowhow; not giving up after projects have ended; combining project funding in order to receive more meaningful results; and, networking and cooperation.<sup>88</sup> Locating the Centre for Preservation and Digitisation in the city of Mikkeli has also had produced flow-on benefits as the Digitalmikkeli consortium links the interests of commercial companies with library and archives, providing another avenue and organisation keen to lobby government to maintain nation’s memory.

Finland’s cultural sector has been a recipient of so-called ‘resuscitation’ funding in 2009, and 2010-2011, which has been used to employ youth at risk of unemployment during periods of economic downturn. In the Library’s case, resuscitation funding has enabled the temporary employment of 36 people and the production of more than 2 million digitised pages.

### **12.3 Germany**

Germany has a number of well-established library-based digitisation projects, using in-house or commercial expertise,<sup>89</sup> and has also built two significant digitisation centres for archival record, including the Munich Digitization Centre (MDZ) established under the auspices of the Bavarian State Library in 1997.<sup>90</sup> Germany is the second highest contributor of digital content to the *Europeana* portal [www.europeana.eu/](http://www.europeana.eu/) (behind France),<sup>91</sup> and 87% of digitised textual documents within Europeans (15<sup>th</sup> to 19<sup>th</sup> century texts) come from the Bavarian State Library. The historic Bavarian State Library, founded in 1558 and having legal deposit responsibilities since 1668, made a strategic commitment to mass digitisation in 2007. These commitments are substantial, including more than 100 projects supported by national and European funders plus a large-scale book digitisation project with Google (launched in 2007). The Library’s approach to mass digitisation has stressed that the scale and rapid timeframe it is

working to (over 1 million books within 5 years) “*can only be provided within the framework of a public private partnership.*”<sup>92</sup> Germany’s National Library has not attempted mass digitisation activities, as being a ‘young’ library established in 1912, the majority of its holdings are still under copyright.

Although not strictly speaking a digitisation project, the recent digital infrastructure commitments to develop a German Digital Library provided under an economic stimulus program, is nevertheless a significant development. The conceptual inspiration behind the German Digital Library (Deutsche Digitale Bibliothek or DDB) can be traced back to the European Union Information Society 2010, *i2010* program, and the commitment from Member States that their cultural collections would be made available for the Digital European Library (the eventual Europeana website). The concept received federal government approval in 2009, which was later ratified in an agreement between the federal and state governments in 2010. While the cultural heritage components of the project were supported in the form of an initial €5 (AUD\$6.8) million grant from the federal government, the project was seen to have potential economic benefits and hence received an additional €1 (AUD\$1.3) million commitment from the economic stimulus package. Construction on the prototype website <http://www.ddb.de> started in mid-2010, and is due for completion by the end of 2011. The site aims to cover 30,000 cultural institutions across all domains and will eventually operate as Germany’s aggregator for content provided to the Europeana website. Permanent funding arrangements for the German Digital Library have yet to be formalised. The impact on existing regional and specific aggregators is also unclear.<sup>93</sup>

## 12.4 Netherlands

The Dutch government has been highly supportive of digitisation activities across the cultural sectors for several years. This has enabled 130 small institutions to digitise approximately 26% of their collections,<sup>94</sup> and supported the development of a number of large-scale, big budget digitisation projects, which include: €10.5 (AUD\$14.4) million over 2007–2016 to digitise Dutch newspapers (the National Library of the Netherlands); €154 (AUD\$ 211.7) million over 2007-2014 for the consortium-based digitisation project *Images of the Future*; €2 (AUD\$2.75) million annually for the *Memory of the Netherlands*; €6.5 (AUD\$8.9) million per year for the *Metamorfoze* preservation and digitisation project; and €15 million (AUD\$20.6 million) over 2007-2010 for the *Heritage of World War II* project. The Netherlands has also established a central agency, Digital Heritage Netherlands (*Digitaal Erfgoed Nederland*, DEN) Foundation, to track the progress of planned and current digitising activities: by the end of 2009 this included digitisation plans and projects from more than 300 institutions.<sup>95</sup>

The majority of digitisation projects, including Public-Private Partnerships, are funded by the public sector: 68% of all digitisation funding is derived from institutional funds, while private funds contribute 6% (slightly over and under average % found by the CIPFA study). Libraries and museums are generally more successful than archives in attracting external funding. The average annual cost per digitisation project, including staffing and technical infrastructure is around €100,000 (AUD\$137,500): the median figure however is €50,000 (AUD\$68,700) while the most expensive project has costs of over €14 (AUD\$ 19.2) million per year.

## 12.5 United Kingdom

Digitisation in the United Kingdom has received substantial support through multiple funding streams (government, lottery, education and research-based); key organisations such as the JISC, the Museums Libraries and Archives Council; and leading national cultural and academic institutions particularly the British Library, the National Archives and the Bodleian Library.<sup>96</sup>

Although government policy in the United Kingdom promotes the economic benefits of Public-Private Partnerships to support service delivery, only a few institutions, notably the National Archives, the British Library and the Bodleian Library have pursued this approach to support mass digitisation. Mass digitisation at the National Archives is funded through three sources: commercial partnerships (known as the Licensed Internet Associates program) are the main funding source, followed by grants (which include government and private sources) and internal funds. The Licensed Internet Associates program is responsible for around 90% of the documents provided online and provides a financial return for commercial partners contracted to digitise, as well as royalty fees for the National Archives averaging between £1 and £2 million (AUD\$ million) per year. Licensed Internet Associate partnerships operate under a non-exclusive, renewable, 10 year license agreement and the National Archives receives a copy of the scanned content which can be provided online by the National Archives when an agreement expires. To date the program has produced £53 million (AUD\$ million) in-kind contributions: most licences (90%) are for genealogy or family history, with academic, military and other records taking up the residual 10%. The National Archives has recently launched a pilot project to ingest user-generated digitisation as another option to build online content at minimal cost to the institution; this approach also allows users to select content for online access. The ratio of online to onsite visit and use at 283:1 is a phenomenal figure; it is regarded as a demonstrable measure of the value that the National Archive

creates for all of its users, and has become an important part of the National Archives case for funding to support digitisation activities.

The digitisation strategy of the British Library *“aims to open up access to the Library’s collections, increase their visibility and use, facilitate interpretation, add value to, and open up new areas for research. An additional aim is to preserve and protect unique, fragile, potentially vulnerable, heritage items”*<sup>97</sup> Funds for digitisation are sourced from operational budgets, external proposals and targeted fund raising (known as the Campaign for the British Library). As noted earlier in this report, the British Library has worked with various commercial partners to undertake mass digitisation of newspapers (with Cengage Gale and brightsolid) and book collections (with Microsoft and most recently Google).<sup>98</sup> However, any license restrictions resulting from these commercial partnerships must ensure they meet the Library’s default position that *“digitised material is [always made] freely available in the reading rooms.”*<sup>99</sup> The British Library’s current ten year strategy, *2020 Vision*, argues that funding digitisation will include an ongoing mix of *“public service and commercial activities.”*<sup>100</sup> In February 2010, during the development of this strategy, the Library had yet to reach an agreement *“on whether or not part of GIA [Grant-In-Aid funding] should be permanently allocated to digitisation to allow us to move from demand-driven to planned, strategic activity; [and noting] that mass digitisation was being carried out by others – was there any benefit to be gained in following the same route and duplicating activity. ....[given] our experience with the book digitisation project had produced a mature infrastructure, with known costs, while ad-hoc projects meant that there was a tendency to lose knowledge and skills.”*<sup>101</sup>

Oxford University’s Bodleian Library has been a major participant in commercially funded digitisation projects including Early English Books Online and Eighteenth Century Collections Online (ECCO), and the Library has also received philanthropic support from the Andrew W Mellon Foundation to develop the infrastructure and digitise collections for the Oxford Digital Library. In 2005, the Oxford University libraries joined alongside the libraries of Harvard, Stanford, Michigan, and the New York Public library as a partner in the initial Google Library Project, which formed part of the Google Books program. The agreement with Google is non-exclusive, and both partners receive copies of the digitised books which have been made freely available online as they are out of copyright.<sup>102</sup>

## 12.6 France

The French Government is an avid supporter of mass digitisation, spurred on by Google's digitisation activities which has seen France become the major provider of digitised content for the Europeana website. The Bibliothèque National de France (BnF) Gallica digital library project has received around € 700 (AUD\$962.4) million in government funding for digitisation, which has enabled some notable achievements: by the end of 2009 for example the BnF had made 973,000 (by February 2010 this had increased to 1 million) digital documents available online. Around 250,000 of these documents (representing 19 million pages) were produced under an intensive three-year mass digitisation project, and 17,250 commercially published in-copyright works were digitised in partnership with the French Publishers' Association, the National Book Centre and the Ministry of Culture and Communication. The BnF's digitisation policy targets three main areas: national heritage (covering every subject), international programs (covering the same subjects but from different nationalities and document sources), and European works (covering a range of topics including national identities, cultural events and social issues). The scale of this digitisation program can be seen in its targets, which include: 100,000 printed works (monographs and serials) every year between 2008-2010; several thousand press books and a similar number of graphic materials.

Digitisation of BnF collections has been undertaken with an increasing number of regional partners, international institutions and organisations, including the Library of Congress, the Mellon Foundation and Google. In 2011, the BnF announced a €11.2m partnership with content and technology providers Jouve-Safig-Diadeis, and BancTec to digitise print collections from the BnF and partner libraries: this partnership is expected to digitise around 70,000 works annually over three years. Like the British Library's partnership programs with Microsoft, the partnership between the BnF and Safig-BancTec-Diadeis builds on an earlier collaboration which resulted in the digitisation of 36.6 million pages in 2007. Financed through the *Conseil National du Livre*, digitisation will cover a broad subject range including French literature, history, art literature, philosophy, law, economics, politics, science and technology. The BnF is also engaged in the development of a digital framework for libraries, which will include documenting and prioritising initiatives to ensure that there is a coordinated and centralised approach to digitisation, and that the benefits of digitisation receive appropriate promotion.<sup>103</sup> Working with publishing and author bodies the French Government signed a blanket agreement in 2011 to allow out of print books to be digitised using the legal deposit collections held at the BnF. Approximately 500,000 books will be digitised and made commercially available over the next five years providing a new

revenue stream for publishers and authors, and enabling the BnF to maintain digital copies. The French Government's support for this project is seen to be within the context of developing the digital economy, as it provides another avenue to create value from scientific and educational content held in cultural institutions.

## 12.7 South Korea

Digital preservation of original collection materials has been undertaken by the National Library of South Korea since 1998. In 2000, the Library initiated large scale digitisation in response to the South Korean Government's *Knowledge Information Policy*, resulting in the conversion of about 140,000 volumes at a cost of 10 billion South Korean Won (about AUD\$ 1.01 million) over two years. At the same time public libraries also became involved in digital conversion projects. By 2009, the National Library's mass digitisation efforts had converted 110,000,000 pages from 390,000 publications.<sup>104</sup> Digitisation is largely confined to out-of-copyright works although about 150,000 in-copyright items have been digitised under license for restricted access.<sup>105</sup> In 2009 the National Library of South Korea launched its Digital Library portal: this development not only changed working activities, it also saw staff increase from 282 to 307. The early development stages of the Digital Library promoted the project as an integral part of South Korea's infrastructure connectivity and regional development improvements, supporting employment and reducing the digital divide, and revitalising and strengthening all library services. To date there has been one valuation study which has measured the economic value of digitised materials applying the Contingent Valuation methodology (which assesses willingness to pay).<sup>106</sup> According to this study digitised texts are a format valued for choice and convenience, and users are prepared to pay up to 836 won (about AUD \$0.81) for access to digitised South Korean language monographs.

## 12.8 Japan<sup>107</sup>

In 2009 the National Diet Library of Japan (NDL) received additional funds of 12.7 billion yen (approximately AUD\$138.711 million) to undertake mass digitisation. These supplementary funds, equivalent to more than 50% to the Library's annual budget of 21.5 billion (AUD\$ 234.928 million) were provided in part as a means to stimulate employment during a period of economic decline. The mass digitisation project was made possible because, the National Diet Library decided to change the method of long-term preservation from microfilming to digitisation in March 2009, and copyright amendments, effective from January 2010, enabled the National Diet Library to digitise its collections without

permission for the purpose of long-term preservation. Government funding for digitisation was also seen to be a response to the Google Books digitisation project. The National Diet Library's large-scale digitisation project was completed in March 2011: it has enabled the digital conversion of approximately one million items including almost all the books published before 1969 in Japan and held by the National Diet Library, 11,000 journal titles, as well as 73,000 rare and old books.<sup>108</sup>

## 12.9 Ireland

The Cultural Sub-Programme of the Irish Government's *National Development Plan (2007-2013)* included a €1,130 million (AUD\$1,555 million) investment for digitisation and infrastructure development as a means of preserving Ireland's cultural heritage.<sup>109</sup> Ireland has embarked on some significant national digitisation projects, such as the National Library of Ireland's Digital Library Program, and the National Archives of Ireland's partnership with Library and Archives Canada to digitise 1901 and 1911 census records [www.census.nationalarchives.ie/](http://www.census.nationalarchives.ie/).

As a member of the European Union, Ireland stands out because it has yet to develop a cohesive, national policy approach digitisation. From the Irish perspective, the small size and strategic support for digitisation amongst the research community is a distinct benefit which should be capitalised on, particularly as "it allows key policy makers and researchers to interact through a number of fora."<sup>110</sup> Ireland's depressed economy is only one factor holding back progress in digitisation, other barriers include a lack of political support and disintegrated policy approach which distributes responsibility for cultural heritage across three government departments: the National Library and National Archives fall under the Department of Arts, Sports Tourism, which promotes the development of these institutions including a digitisation program; the Department of Environment, Heritage and Local Government has administrative responsibility for local libraries, museums and archives; while, higher education libraries are managed under the Department of Education and Science.

## 13. Conclusion

While there is no guaranteed format to deliver funding success, the case studies do show that the overall political, economic, social, technological and legal environment in which an institution operates will drive or hinder government interest in the mass digitisation of cultural heritage collections. Within this context Australian institutions face a number of obvious barriers, including: the federal distribution

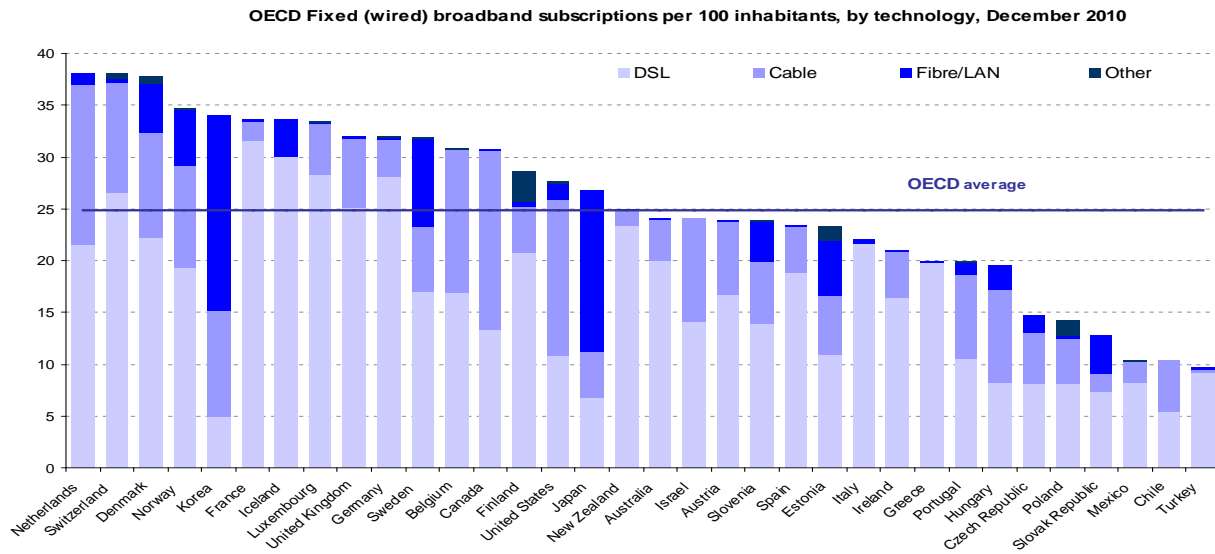
of responsibilities for cultural institutions; the multiplicity of peak bodies across and within the different cultural domains; a public policy agenda that is threatened by political instability; and, an overly restrictive copyright regime.

The existence of a national digital or information policy is an important driver, as it provides a framework to plan strategic commitments and priorities to digitise national cultural heritage collections as part of a country's national digital infrastructure. It recognises the critical importance of digital cultural content to support the development and growth of the digital economy. In the absence of a national digitisation policy it still remains important for cultural heritage institutions to establish and manage digitising priorities from a national perspective: one way to initiate and advance this work would be to review the domain or sector-based priorities, potentially under the stewardship of the responsible national institution and/or peak body such as NSLA.

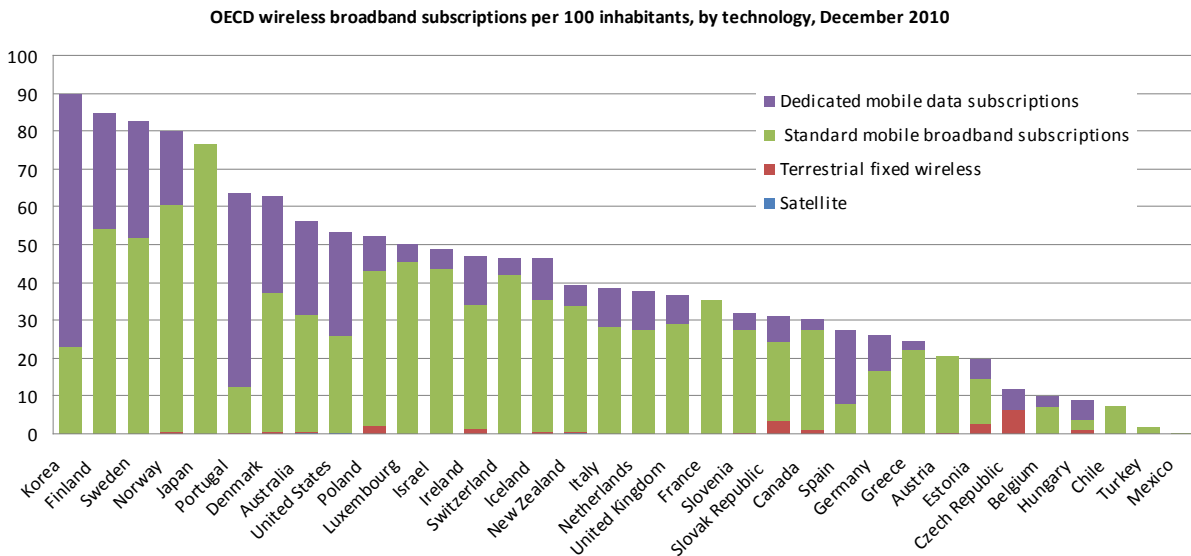
The Commonwealth Government's recently released National Cultural Policy Discussion Paper<sup>111</sup> may be seen to provide an opportunity for cultural institutions and NSLA to promote the development of a national approach and policy for digitisation, this opportunity needs to be based in a demonstration of the economic and social benefits accruing from digitisation. Demonstrating value as discussed in this paper involves a multi-tiered approach that links the benefits of digitisation to public policy outcomes using a compelling narrative, evidence-based data and traditional (usually quantitative) performance datasets. Irrespective of whether funds are being sourced from public or private providers, a multi-tiered approach is critically important because the benefits of digitisation are often not immediately obvious or tangible to external funders. A recent JISC publication provides a number of savvy examples that illustrate these points.<sup>112</sup> While NSLA could easily emulate this format, collectively or individually, using existing data on digitisation activities such as the national newspaper digitisation program and testimonials derived for example from Australian Research Council partnership programs, this research suggests that funding submissions for mass digitisation will need additional evidence to demonstrate the social and economic return on investment (at the micro and macro level) delivered through the digitisation activities of NSLA member libraries.

# Appendix 1: OECD Country Rankings for wired and wireless broadband, 2010

[Source: <http://www.oecd.org/dataoecd/21/35/39574709.xls>]



Source: OECD



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## Endnotes:

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- <sup>4</sup> Den Foundation, KnowledgeLand and Dutch Ministry of Education, Culture and Science – Directorate Cultural Heritage Directorate. (2010) *Business Model Innovation – Cultural Heritage*, Amsterdam and The Hague. P.6.
- <sup>5</sup> See Appendix 1, OECD comparative country tables for fixed and wireless broadband per 100 inhabitants by technology, 2010. Online at: <http://www.oecd.org/dataoecd/21/35/39574709.xls>
- <sup>6</sup> National policies include, for example *Digital France 2012* and Finland's *National Information Society Policy 2007–2011*.
- <sup>7</sup> The European Commission i2010 Digital Libraries Initiative is supported by 27 EU Member States, the 3 non-EU European Economic Area countries (Norway, Iceland and Lichtenstein) and Switzerland.
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- <sup>9</sup> The Australian Government's Department of Broadband, Communication and the Digital Economy's Submission to the House Standing Committee on Infrastructure and Communications, The Role and Potential of the National Broadband Network (March 2011) for example, makes the following single statement about digitisation: *Historical, educational and cultural heritage records are increasingly being digitised, and relevant institutions are increasingly servicing their clients through online portals. Significant scope remains for improving access through further digitisation efforts. The NBN's capabilities can support innovation to increase the number, type and quality of services that knowledge-keeping institutions such as these are able to offer.* [Emphasis added] P.45 Online at: <http://www.aph.gov.au/house/committee/ic/NBN/subs/Sub215.pdf>
- <sup>10</sup> National and State Libraries Australasia: Reimagining Libraries (March 2011) *Project Brief Digitisation Research Version.0.2*, Unpublished. P.2.
- <sup>11</sup> Mr Alan Smith, Chair National State Libraries Australasia and Ms Anne-Marie Schwirtlich, Director General National Library of Australia made direct requests for information to the following institutions: National Library of Finland, National Library of Norway, National Library of Spain, National Diet Library of Japan, National Library of Germany, National Library of the Netherlands, National Library of Malaysia, National Library of South Korea, National Library of China, Bavarian State Library, New York Public Library, The Smithsonian, V&A Museum, Getty Research Institute, Arts Institute of Chicago, and the Metropolitan Museum of Art. Although relatively small in number, survey responses were gratefully received as they have provided some valuable insights.
- <sup>12</sup> The project brief identified that time and access to confidential documentation would potentially limit the research outcomes: this proved to be the case. The allocated research time frame of twenty days unfortunately did not allow the researcher enough time to undertake the requested preliminary investigation of possible funding sources for digitisation projects in Australia and New Zealand. Another unforeseen constraint arose due to a lack of funding and time to translate information that was presented only as non-English PDF formats. For example, a German government report *Inventory on the digitisation of cultural artefacts and fields of action* produced for the Federal Commissioner for Culture and the Media and the Federal Ministry of Education and Research, includes an assessment on the economic and social value of digitisation. While it is available online, and is referenced in Germany's 2010 report *Implementation of the Commission Recommendation on digitisation and online accessibility of cultural material and digital preservation* the PDF is only provided in German [http://www.deutsche-digitale-bibliothek.de/pdf/bkm\\_end\\_01.pdf](http://www.deutsche-digitale-bibliothek.de/pdf/bkm_end_01.pdf)

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- <sup>14</sup> Poole, Nick. (2010) *The Cost of Digitising Europe's Cultural Heritage: A Report for the Comité des Sages of the European Commission*, The Collections Trust for the European Commission.
- <sup>15</sup> CIPFA, United Kingdom. (May 2009).
- <sup>16</sup> CIPFA, United Kingdom. (May 2009). Table 20 Median reported digitisation costs. P.49
- <sup>17</sup> Cathro, Warwick. (2010) 'Digital library economics: international perspectives: the Australian perspective.' Online at: <http://www.nla.gov.au/openpublish/index.php/nlasp/article/viewDownloadInterstitial/1668/2026> In this article by Cathro discusses recent work undertaken by the National Library of Australia to establish unit costs for digitisation, identified as follows: A\$13 (£6, €9.48) per picture; A\$37 (£17, €26.99) for a music score containing five pages (as an average); A\$35 (£16, €25.53) for a rare map; A\$17 (£8, €12.40) for a manuscript item containing three pages (as an average). Unlike the *Numeric* results for median digitisation costs, Cathro notes that the National Library of Australia's calculations do include overhead costs, such as the "employee cost of scanning, quality control, creation and maintenance of metadata, creation of derivatives, uploading to the storage system and preservation treatment, as well as corporate overheads and the amortised cost of equipment."
- <sup>18</sup> Maron, Nancy L., Kirby Smith K. and Loy, Matthew. (2009) *Sustaining Digital Resources: An On the Ground View of Projects Today: Ithaka Case Studies in Sustainability*. P.17 This study also found that few projects had quantified the monetary value of in-house contributions to digitisation.
- <sup>19</sup> Poole, Nick.(2010)
- <sup>20</sup> CIPFA, United Kingdom. (May 2009)
- <sup>21</sup> The British Library identified the following digitisation costs in 2010: £1.20 (€1.34 or A\$1.84 in current exchange rates) to digitise a page of a newspaper and €0.30 (A\$0.46) for a page from a commercially published book. See *The British Library – A Submission to the Comité des Sages*. Online at: [http://ec.europa.eu/information\\_society/activities/digital\\_libraries/doc/refgroup/hearing28october2010/britishlibrary.pdf](http://ec.europa.eu/information_society/activities/digital_libraries/doc/refgroup/hearing28october2010/britishlibrary.pdf)
- <sup>22</sup> Primary Research Group. (2010) *Survey of Library & Museum Digitisation Efforts, 2011 Edition*. P.32
- <sup>23</sup> Guthrie, Kevin, Griffiths, Rebecca, & Maron, Nancy. (May 2008) With reference to endowment models, this Ithaka report identified that in order to accumulate capital and support for digitisation from interest without tapping into the funds requires raising 20 times the annual operating budget. P.47 Online at: [http://www.ithaka.org/ithaka-s-r/strategyold/sca\\_ithaka\\_sustainability\\_report-final.pdf](http://www.ithaka.org/ithaka-s-r/strategyold/sca_ithaka_sustainability_report-final.pdf)
- <sup>24</sup> Primary Research Group. (2010) P.32
- <sup>25</sup> Primary Research Group. (2010) P.38
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- <sup>27</sup> European Commission, Information Society and Media Directorate-General (November 2010) *Second progress report on the digitisation and online accessibility of cultural material and on digital preservation in the European Union – Working Document*. P. 10 Online at: [http://ec.europa.eu/information\\_society/activities/digital\\_libraries/doc/recommendation/reports\\_2010/2010%20Digitisation%20report%20overall.pdf](http://ec.europa.eu/information_society/activities/digital_libraries/doc/recommendation/reports_2010/2010%20Digitisation%20report%20overall.pdf)
- <sup>28</sup> The British Library, (February 2010) *2020 Vision Project: Size, Scope and Use of the Collections, Internal Discussion Paper*. P. 16 Online at: <http://www.bl.uk/aboutus/stratpolprog/2020vision/sizescopeuse.pdf>
- <sup>29</sup> Niggemann, Elisabeth, De Decker, Jacques, and Lévy, Maurice. (January 2011) *The New Renaissance: Report of the 'Comité des Sages' Reflection Group on Bringing Europe's Cultural Heritage Online*, Brussels, European Commission. Online at: [http://ec.europa.eu/information\\_society/activities/digital\\_libraries/doc/refgroup/final\\_report\\_cds.pdf](http://ec.europa.eu/information_society/activities/digital_libraries/doc/refgroup/final_report_cds.pdf)
- <sup>30</sup> European Commission, Information Society and Media Directorate-General (November 2010). P. 11
- <sup>31</sup> CIPFA, United Kingdom (May 2009). P.74.
- <sup>32</sup> This partnership converted 60,000 out-of copyright print books to digital objects and is seen to have smoothed the way for future partnership opportunities with Microsoft in the development of the Research Information Centre at the British Library.

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<sup>33</sup> Google investments European libraries include: €30 million to digitise 400,000 books from the National Library of Austria (€75 per book), while in Italy Google committed to digitise 1 million books for about €100 million or €100 per book. Source: Niggemann, Elisabeth, De Decker, Jacques, and Lévy, Maurice. (January 2011) P.39  
For a complete list of libraries involved in the Google Book Project see:

<http://www.google.com/googlebooks/partners.html>

<sup>34</sup> brightsolid will digitise 40 million newspaper pages from the British Library's collections over ten years, starting with out-of copyright publications, and subject to agreement, moving to in-copyright publications.

<sup>35</sup> The 250,000 books from the British Library digitised by Google will initially be made available via the British Library's website and through Google Books, however it is also planned to make these available through the European Digital Library portal, [www.europeana.eu](http://www.europeana.eu)

<sup>36</sup> ProQuest maintains the database for sale (the target audience being universities and researchers) and the library receives a copy for immediate dissemination within Demark, which is geographically controlled by IP address. Source: Poole, Nick. (2010) P.39

<sup>37</sup> <http://www.proquest.com/en-US/aboutus/pressroom/11/20110331.shtml>

<sup>38</sup> i2010 European Digital Libraries Initiative High Level Expert Group on Digital Libraries – Sub-group on Public-Private Partnerships (May 2008) *Final Report on Public-Private Partnerships for the Digitisation and Online Accessibility of Europe's Cultural Heritage*. Online at:

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The seven business models identified in this report are: business-to-consumer (Bibliothèque nationale de France and Syndicat National de l'Édition); secondary publisher (such as the British Library and Cengage Gale); sponsorship (Biblioteca Virtual Miguel de Cervantes - Cervantes Virtual Library) (16); business-to-consumer publicly available business-to-consumer (Google and University of Michigan); business-to-business (Institut National de l'Audiovisuel, France); business-to-consumer with no revenue stream to publishers or rights holders because the content is out-of-copyright or an orphan work (Open Content Alliance); and a combination business-to-business and business-to-consumer (The National Archives).

<sup>39</sup> European Commission, Information Society and Media Directorate-General (November,2010) P.15

<sup>40</sup> European Commission, Information Society and Media Directorate-General (November, 2010) P.14.

<sup>41</sup> i2010 European Digital Libraries Initiative High Level Expert Group on Digital Libraries – Sub-group on Public-Private Partnerships (May 2008) P.22

<sup>42</sup> Although recognising that sustainability is something of a 'moving target' in the context of an ever-changing web-environment, and there is no formula that will guarantee success, Ithaka argues that from the operational perspective, sustainability requires an organisational infrastructure and mindset that is flexible enough to recognise and take full advantage of strategic options for revenue generation and collaboration as they arise.

<sup>43</sup> Guthrie, Kevin, Griffiths, Rebecca, & Maron, Nancy. (May 2008). This Ithaka study identified the following options: advertising income, author fees, content licensing, corporate sponsorship, endowment revenue, memberships, subscriptions and premium services.

[http://www.ithaka.org/ithaka-s-r/strategyold/sca\\_ithaka\\_sustainability\\_report-final.pdf](http://www.ithaka.org/ithaka-s-r/strategyold/sca_ithaka_sustainability_report-final.pdf)

<sup>44</sup> Maron, Nancy L., Kirby Smith K. and Loy, Matthew. (2009) The Ithaka sustainability case studies covered a ranger of institutions located in the United Kingdom, the United States of America, Europe and the Middle East. Online at: [http://www.ithaka.org/ithaka-s-r/research/ithaka-case-studies-in-sustainability/report/SCA\\_Ithaka\\_SustainingDigitalResources\\_Report.pdf](http://www.ithaka.org/ithaka-s-r/research/ithaka-case-studies-in-sustainability/report/SCA_Ithaka_SustainingDigitalResources_Report.pdf)

<sup>45</sup> Maron, Nancy L. and Loy, Matthew (June 2011) *Funding for Sustainability: How Funders' Practices Influence the Future of Digital Resources* United Kingdom, The Higher Education Funding Council for England (HEFCE), on behalf of JISC. [http://sca.jiscinvolve.org/wp/files/2011/06/examination\\_funder\\_practices\\_practices\\_UK.pdf](http://sca.jiscinvolve.org/wp/files/2011/06/examination_funder_practices_practices_UK.pdf)

<sup>46</sup> Maron, Nancy L., Kirby Smith K. and Loy, Matthew. (2009) note for example while advertising is a *common strategy for generating revenue employed by commercial websites, but is uncommon ...in the not-for profit sector. Relatively few projects studied in this series of cases employ an advertising model, and those that do balance it with a variety of other revenue-generating strategies.* P.24

<sup>47</sup> Den Foundation, KnowledgeLand and Dutch Ministry of Education, Culture and Science – Directorate Cultural Heritage Directorate (2010) P.84-85

<sup>48</sup> The pilot American Memory website established by the Library of Congress in 1990-1994 was used to generate public and private sector donations to support the development of the National Digital Library: the project's

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USD\$15 million over five years from Congress was more than matched by the USD\$45 million in donations it received from the private sector over the same time frame. <http://memory.loc.gov/ammem/about/index.html>

<sup>49</sup> Similarly the collaborative World Digital Library launched in 2009 has been developed with significant funding support from gifts, including USD\$3 million from the Qatar Foundation and USD\$2 from the Carnegie Foundation. As reported in United States of America. Source: *Annual Report to CDNL 2010*

<sup>50</sup> Maron, Nancy L., Kirby Smith K. and Loy, Matthew. (2009) p.47

<sup>51</sup> The £55 endowment scheme will be chaired by an independent advisory panel. Organisations able to bid for grants of up to £5 million from the Endowment Fund which will be available to match funds from private donors. [http://www.culture.gov.uk/news/news\\_stories/8267.aspx](http://www.culture.gov.uk/news/news_stories/8267.aspx)

<sup>52</sup> Maron, Nancy L., Kirby Smith K. and Loy, Matthew. (2009) 20-21

<sup>53</sup> BBC News (15 September 2011) "Copyright confusion dogs European digitisation push" Online at: <http://www.bbc.co.uk/news/technology-14945604> This recent article highlights the impact of copyright on institutions efforts to digitise collection.

<sup>54</sup> Changes to copyright legislation in some countries, such as Japan, have supported mass digitisation for preservation purposes.

<sup>55</sup> Vuopala, Anna. (May 2010) *Assessment of the orphans work issue and costs for rights clearance*, European Commission Directorate General Information Society and Media. P. 5 Online at:

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<sup>56</sup> Korn, Naomi. (April 2009) *In From the Cold: An assessment of the scope of 'orphan works' and its impact on the delivery of services to the public*. Collections Trust, United Kingdom. P.21

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<sup>57</sup> European Commission: Proposal for a Directive of the European Parliament and of the Council on certain permitted uses of orphan works, 24 May 2011. Online at:

[http://ec.europa.eu/internal\\_market/copyright/docs/orphan-works/proposal\\_en.pdf](http://ec.europa.eu/internal_market/copyright/docs/orphan-works/proposal_en.pdf)

<sup>58</sup> Europeana press release (28 September 2011). "Europe's national librarians support Open Data Licensing"

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<sup>59</sup> Dworschak, Manfred. 'Competition for Google - A German Library for the 21<sup>st</sup> Century' *Der Spiegel*

Online at: <http://www.spiegel.de/international/germany/0,1518,676591,00.html>

<sup>60</sup> Grout, Catherine. <http://www.slideshare.net/xcia0069/grout-introduction-5605245>

<sup>61</sup> Under the education and research imperative the benefits of digitisation are directly linked to the needs of the research community. Digitised content supports innovation within the Higher Education sector and needs to continue or risk being overtaken by commercial organisations.

<sup>62</sup> The economic imperative argument identifies that digitisation facilitates economic competitiveness, stimulates the economy through the development of new skills and content. Digitising, especially large-scale endeavours provide cost and time efficiencies for the cultural heritage sector, as well as users.

<sup>63</sup> Digital content provides opportunities for lifelong learning, participation and community engagement.

<sup>64</sup> Political arguments link the idea of a national collection to national strategies and broad policy themes such as Digital Britain.

<sup>65</sup> The JISC has lamented that the cultural and educational sectors are being overtaken by countries such as France and New Zealand in providing a critical mass of digitised cultural content, and exploiting this content for commercial and non-commercial use. The concept of lagging behind in the national digitisation stakes is also echoed by Harvard University's Robert Darnton's calls to establish an American Digital Public Library.

<sup>66</sup> Many countries have already created centralised digitisation centres as part of the structure of university, national or other major libraries (Austria, Finland, Germany, Lithuania, Netherlands, Norway), or national archives (Germany, Hungary, Spain and Sweden).

<sup>67</sup> Although most individual institutions are collecting data on use of digitised collections, the European Commission reports that only a few states are collecting comprehensive national statistics on use of digitised collections.

<sup>68</sup> European Commission, Information Society and Media Directorate-General (November 2010) Reporting on the *quantitative targets set by the Royal Dutch Library's strategic plan for 2010-2013 require the Library to digitise 10% of all Dutch books, 50% of all Dutch-born digital publications, and 600,000 images. The Images for the Future project will digitise 137,200 hours of video, 22,510 hours of film, 123,900 audio recordings and 2 million*

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photographs. Under the strategic plan of the Dutch National Archives for 2010-2013, between 5% and 10% of the total collection is to be digitised and available online by 2015-2020: this equates to approximately 63 million pages of manuscripts, 25,000 maps and 1.3 million photographs.' P.8

<sup>69</sup> Tanner, Simon and Deeghan, Marilyn (2011), *Inspiring Research, Inspiring Scholarship: The Value and Benefit of Digitised Resources for learning, teaching, research and enjoyment* used the following Balanced Scorecard criteria to measure audience and demonstrate value: **Users, audience and stakeholders:** worth of the digitisation to the users, audience and stakeholders and how that benefits them; **Innovation and development:** value of the digitisation in terms of how it enables the users and providers to do new and innovative actions not possible previously. This might include new research and teaching methods, Web 2.0 type interactions, new modes of collection development and curation not easily possible before digitisation; **Internal processes:** Evaluates how the Digitisation Strategy provides value to the way that the organisation operates. For instance, documentation and conservation will both find efficiencies and benefits that could not be accrued without digitisation, as will curation; and **Financial benefits and outcomes:** benefits to the whole sector and income stream of this sector can be evaluated and enumerated across a wide range of activity. P. 41-42

Online at: [http://www.kdcs.kcl.ac.uk/fileadmin/documents/Inspiring\\_Research\\_Inspiring\\_Scholarship\\_2011\\_SimonTanner.pdf](http://www.kdcs.kcl.ac.uk/fileadmin/documents/Inspiring_Research_Inspiring_Scholarship_2011_SimonTanner.pdf)

<sup>70</sup> In 2010 SEO/Amsterdam Economics also submitted a proposal to conduct a cost-benefits analysis of the Dutch Digital Heritage Project.

<sup>71</sup> <http://www.kennisland.nl/en>

<sup>72</sup> Den Foundation, KnowledgeLand and Dutch Ministry of Education, Culture and Science – Directorate Cultural Heritage Directorate (2010) P. 6

<sup>73</sup> Den Foundation, KnowledgeLand and Dutch Ministry of Education, Culture and Science – Directorate Cultural Heritage Directorate (2010) The five primary policy goals of the Dutch Ministry of Education, Culture and Science are: *monitoring and, if necessary promoting the diversity of availability and use; maintaining a consistent level of quality; ensuring accessibility to all citizens; remaining independent from disproportionate market pressure and content-related government interference; and protecting cultural heritage from harm and destruction.* P.27

<sup>74</sup> CATCHPlus <http://www.catchplus.nl/en> evolved from the 2004 *Continuous Access To Cultural Heritage* (CATCH) program, which was established by The Netherlands Organization for Scientific Research. CATCH was established to promote collaboration between the information technology and cultural heritage sectors: it promotes digitisation and integration of technical infrastructures across the cultural heritage sector.

<sup>75</sup> Skarstein, Vigdis Moe. (2010) 'Norway – A National Strategy for the digital preservation and dissemination of our cultural heritage' *Scandinavian Public Library Quarterly* Volume 43: No. 2. Online at:

[http://www.splq.info/issues/vol143\\_2/05.htm](http://www.splq.info/issues/vol143_2/05.htm)

<sup>76</sup> Josevold, Roger Deputy National Librarian abstract of presentation for 2011 Liber Annual Conference, *Getting Europe ready for 2020: the library's role in research, education and society.* Online at:

<http://bibliotecnica.upc.edu/LIBER2011/content/accepted-papers>

<sup>77</sup> Takle, Marianne (2009) 'The Norwegian National Digital Library' *Ariadne*, Issue 60, July. Online at:

<http://www.ariadne.ac.uk/issue60/takle>

The digitisation of the works of significant Norwegian writers such as Henrik Wergeland or Henrik Ibsen in celebration of their anniversary years.

<sup>78</sup> For example, the National Library of Norway commits on average *approximately €2.6 m from its budget per year to digitisation, while the NA's investment in digitisation equipment is calculated to be €500,000.* Source: European Commission, Information Society and Media Directorate-General (November 2010) P. 8

<sup>79</sup> Takle, Marianne (2009)

<sup>80</sup> Although Norwegian copyright legislation permits the National Library to digitise collections for the purpose of long term preservation, publishing digitised copies online requires prior agreement from the copyright owner.

<sup>81</sup> European Commission, Implementation of the Commission on Digitisation and Online Accessibility of Cultural Material and Digital Preservation, Report 2010, Finland.

<sup>82</sup> Ministry of Education and Culture, Finland (2011) *International Evaluation of the National Library of Finland: Report of the evaluation panel*

<sup>83</sup> Clegg, Nick, "Finns get a right to broadband – can we repeal the Digital Economy Act", *Guardian* Online at:

<http://www.guardian.co.uk/technology/blog/2010/jul/01/finland-broadband-digital-economy-act-repeal>

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<sup>84</sup> The National Digital Library program has increased the size of the workforce: in 2009, 54 of 124 fixed-term employees were engaged to work on this program.

<sup>85</sup> Ministry of Education and Culture, Finland (2011) P. 18

<sup>86</sup> These statistics appear to be quite basic as they consist of number of items digitised and used.

<sup>87</sup> For example, the Library recently received approval a budget proposal from a local Member to fund the digitisation of photographic negatives from the Second World War.

<sup>88</sup> Bremer-Laamanen, Majlis Centre for Preservation and Digitisation, The National Library of Finland – email correspondence

<sup>89</sup> Such as the Bavarian State Library <http://www.digitale-sammlungen.de>; the Goettingen State and University Library, <http://gdz.sub.uni-goettingen.de>; the Saxon State Library (SLUB Dresden), <http://www.slub-dresden.de/>; and the State Library Berlin, <http://staatsbibliothek-berlin.de/>

<sup>90</sup> See *Landesarchiv Baden-Wuerttemberg*, <http://www.landearchiv-bw.de> and the *Bundesarchiv* <http://www.bundesarchiv.de/>

<sup>91</sup> A European Commission, Information Society and Media Directorate-General. (November 2010) P.19 As at 2010, France at 17.98% is the highest contributor to Europeana, with Germany at 17.10% a close second.

<sup>92</sup> Ceynowa, Klaus. (2009) 'Mass Digitization for Research and Study: the digitization strategy of the Bavarian State Library' *IFLA Journal*, 17-25. Online at:

[http://www.ifla.org/files/hq/publications/ifla-journal/ifla-journal-35-1\\_2009.pdf](http://www.ifla.org/files/hq/publications/ifla-journal/ifla-journal-35-1_2009.pdf)

<sup>93</sup> These include the BAM-Portal(<http://www.bam-portal.de>) and regional or sector specific aggregators such as digiCULT (<http://www.digicult-sh.de>) and <http://www.museum-digital.de/san>, the current provider for Europeana, the EuropeanaLocal-Deutschland (<http://www.europeanalocal.de>)

<sup>94</sup> Source the Digital Facts survey – a national survey carried out in 2009.

<sup>95</sup> A European Commission, Information Society and Media Directorate-General. (November 2010).The National Library of the Netherlands (KB)strategic plan for 2010-2013 states that:10% of all Dutch books, newspapers and periodicals should be digitised (60 million pages by the KB, 13 million by third parties); Images for the Future project, a consortium of six heritage institutions, including EYE Film Institute Netherlands, the Netherlands Institute for Sound and Vision and the National Archives aims to digitise 137,200 hours of video, 22,510 hours of film, 123,900 audio recordings and 2 million photographs; the National Archives' strategic plan for 2010-2013, between 5% and 10%of the total collection will be digitised and available online by 2015-2020. This translates into approximately 63 million pages of manuscripts, 25,000 maps and 1.3 million photographs.

<sup>96</sup> Between the mid-1990s and 2005, £130 million of public funds were used to support digitisation projects. The JISC has provided substantial funding, planning and advocacy support for digitisation which includes: a phased funding program for mass digitisation £12 million for 6 projects (over 2004-2006), £11.6 million for 16 projects (2007) and another £1.8 million for 25 small projects (2008). This was followed, in 2008 by e-content program which provides funds for projects to build institutional skills and strategies, and options to link diverse content. An early evaluation of the digitisation programs initiated under JISC, suggested that the only comparable international program to the JISC digitisation program was that run by the National Digital Information Infrastructure Preservation Program under the Library of Congress in America, and that the depth and range of content format (covering audio, film, images and newspapers) and subject matter (medicine, Parliamentary Papers) would not be attractive to commercial providers.

<sup>97</sup> The British Library (February 2010) *2020 Vision Project: Size, Scope and Use of British Library Collections – Internal Discussion Paper*, p. 8

<sup>98</sup> <http://pressandpolicy.bl.uk/Press-Releases/The-British-Library-and-Google-to-make-250-000-books-available-to-all-4fc.aspx>

<sup>99</sup> The British Library (February 2010)

<sup>100</sup> The British Library (February 2010)

<sup>101</sup> The British Library (February 2010)

<sup>102</sup> Ronald, Milne. (2006)'The Google Mass Digitization Project at Oxford' *Liber Quarterly* Volume 16: Issue 3/4 2006

<sup>103</sup> [http://www.BnF.fr/en/professionals/national\\_cooperation/a.gallica\\_shared\\_digitization.html](http://www.BnF.fr/en/professionals/national_cooperation/a.gallica_shared_digitization.html)

<sup>104</sup> Annual Report to CDNL 2010, South Korea

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<sup>105</sup> Amendments made to South Korean copyright law in 2003 allow the National Library of South Korea's ability to digitise materials five years after their publication date; the intent of this legislative change was to facilitate the preservation (not access) of national collections. The digitised copy can be provided to other libraries that have a copyright fee payment system.

<sup>106</sup> Ryu, Hee-Kyeong (2006) *A study on the economic value measurement of domestic monograph full-text information services*. Chungang University, Seoul. 2006.

<sup>107</sup> Shuji Kamitsuna – email correspondence

<sup>108</sup> [http://www.cdnl.info/2011/CDNL\\_2011\\_-\\_country\\_report\\_JAPAN.pdf](http://www.cdnl.info/2011/CDNL_2011_-_country_report_JAPAN.pdf)

<sup>109</sup> Under this sub-programme, it is stated that Government policy on universal access to arts and cultural facilities will be supported through the commencement of a digitisation program.

<sup>110</sup> DARIAH Digital Research Infrastructure for the Arts and Humanities, *Sharing Data & Expertise, Integrating Research, Enriching Scholarship* Case Study of Ireland – 1. A General Overview

<sup>111</sup> Online at: <http://culture.arts.gov.au/discussion-paper>

<sup>112</sup> Online at:

[www.jisc.ac.uk/media/documents/programmes/digitisation/12pagefinaldocumentbenefitssynthesis.pdf](http://www.jisc.ac.uk/media/documents/programmes/digitisation/12pagefinaldocumentbenefitssynthesis.pdf)