



TOWARDS  
A NATIONAL  
COLLECTION



Arts and  
Humanities  
Research Council

# DIRECTORATE REPORT

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## International Benchmarking Review

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Front Cover image: "[Novus Atlas, das ist Welt-Beschreibung mit schoenen newen außfuhrlichen Taffeln inhaltende die Koenigreiche und Laender des gantzen Erdtreichs. Abgetheilt in vier Theile.](#)"  
[Jan Jansson, 1649 © Flickr Commons/British Library](#)

# Executive Summary

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The focus of the international benchmarking review are digital initiatives worldwide that fall under two categories: initiatives that are as close as possible to the scope and reach of the [Towards a National Collection](#) programme, meaning initiatives that are multi sectoral, multi collection, and that connect cultural objects and records at a national scale; and initiatives that offer models for best practice in relevant areas (public engagement; technological innovation; EDI practices; IPR and open access).

Following this summary, the first section contextualises the report within the broader research conducted and commissioned by *Towards a National Collection*; the second section describes the aims of the report; the third section defines the premises underlying the report and shaping the statistics considered in the report; the fourth section outlines the report's scope, methodology, and the process of data acquisition; the fifth section explains the selection criteria of the general survey of initiatives and why some initiatives have not been included; the sixth section presents four case studies; finally, the last section outlines observations as well as recommendations for future work in the field and for the next phases of *Towards a National Collection* based on the report's findings.

The report includes three appendices: Appendix A, the survey of all the initiatives considered; Appendix B, the list of the webinars of the International Series; and Appendix C, the bibliography.

## Feeding into the Towards a National Collection Programme

The need for this International Benchmarking Report comes from the awareness that *Towards a National Collection* is not the first investment at an international level in creating a unified virtual 'national collection'; in dissolving barriers between different collections across the GLAM sector; and in ensuring that user engagement is not only increased, but, first and foremost, diversified. Identifying and reviewing initiatives that have successfully achieved one or more of these aims will feed into the set of recommendations for the development of a future virtual national collection that the programme is developing based on its funded and commissioned research.

*Towards a National Collection* aims to have a transformative impact on the following areas, which correspond to the areas in analysis in this report:

- **Digital search** and cataloguing tools for collections, and related technologies and methodologies.
- **Research capability**: through enhanced researcher access and new cross-collection search tools, researchers will be able to exploit the potential of the nation's research assets in innovative ways
- **Public access and public engagement with heritage**: the programme will generate research-driven public-facing outputs, including major new exhibitions and immersive installations; extend public access beyond collections' physical location, nationally and internationally; and facilitate wider and better-informed public engagement.

# Aims and Premises

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## Aims

This report aims to:

- gather information on how other countries have designed and delivered national aggregators (or similar portals) for digitised cultural heritage collections, and at what scale;
- understand what difficulties other countries had to face in the process of designing and delivering the abovementioned portals;
- assess successful strategies to allow the cross-search of collections, to engage diversified audiences, and to ensure long term sustainability.

## Premises

We are mindful that every country operates differently and has different sets of rules and regulations, which have an impact on the creation of digital platforms for the cultural heritage sector. Specifically, this benchmarking review is based on the following premises, which also inform how the data has been collected:

- **Funding:** each country has different funding arrangements for the cultural heritage sector. Some national portals can rely on funding offered by the government, which can be continuous or on a project-basis; others are funded privately, through donations or endowments. The nature of funding has a fundamental impact on the research capabilities and long-term sustainability of the platform.
- **Intellectual Property Rights:** the ability to collect and link data and digitised assets, and the level of access and reuse granted to end-users depend heavily on the IPR laws in place in a specific country, which regulate how content can be accessed and reused. Some countries are adopting open access policies, others have a more constrained approach. Another issue is the lack of standardised licencing practices at national and international level, although there is an increasing adherence to internationally recognised licences such as the ones offered through the Creative Commons initiative.
- **Digitisation:** the extent of digitisation across cultural heritage organisations varies greatly, which also impacts the capacity and quality of national portals. The issue is not only the wide gap in digitisation capacity between small-scale and large-scale organisations, but also the general lack of a systematic way of recording the cultural heritage objects that have been digitised over the years and that are therefore available.
- **Vocabulary:** as of now (2021), there is no standardised vocabulary to define key-concepts such as *digitisation* or *digital asset*, which makes it difficult to understand fully the statistics provided by some platforms. This issue has also affected some of the data that inform this report: it is often unclear what organisations mean by 'items' when declaring the number of digital items available through their portals. Some institutions mean metadata, others mean digitised objects only, others digitised catalogue records. This heterogeneity of definitions results in wide discrepancies of number of items declared as available through the portal (see Appendix A).
- **Time-sensitive data:** the data provided throughout this report is true only in the time frame during which it has last been updated (October 2021). Any future research on the topic should review these statistics, especially regarding the number of items made available and the participating organisations.

# Scope, Methodology and Data Acquisition

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For each international digital initiative analysed, this benchmarking exercise considers the following aspects (see Appendix A):

- geographic location
- sector
- nature of funding
- start year
- number of items made available

This selection was made in order to ensure transparency and fairness of the statistics collected, as it is the data that is normally made publicly available by the individual institutions through their official channels.

As it has not been possible to speak directly to the senior management of all of the initiatives listed, some other statistics that would have been useful to this report have not been included (e.g. the portals' user traffic). This review has been carried out by *Towards a National Collection's* Senior Researcher between November 2020 and October 2021. Out of the 47 initiatives reviewed, 10 involved direct contact with their management. The data that informs this review, both for the main survey and for the four case studies, was gathered in the following ways: through desk research (reports, academic papers, websites, and blogs); a literature review (see Appendix C); the series of webinars organised by *Towards a National Collection* (see Appendix B); by talking to key stakeholders; and by holding a brief survey on Twitter.

A key starting point were the following existing surveys:

- [List of GLAM open access collections](#) by Andrea Wallace and Douglas McCarthy
- [List of AI Initiatives in museums](#) by Elena Villaespesa, Oonagh Murphy and Kate Nadel

## Selection Criteria for the Survey

The initiatives included in the general survey (Appendix A) are initiatives that are multi sectoral, multi collection, and that connect cultural objects and records at a national scale; and initiatives that offer models for best practice in relevant areas (public engagement; technological innovation; Equality Diversity and Inclusion practices; Intellectual Property Rights and open access).

The survey at the core of this report does not include many of the European portals that are listed as [Europeana aggregators](#).<sup>1</sup> Only those aggregators that have developed an independent infrastructure and that function not only as data providers for Europeana or as sub-projects under larger institutions (e.g. National Libraries) have been included.

Because of its focus on international initiatives, this report does not include important UK initiatives that also represent a model for best practice for *Towards a National Collection*, such as Art UK.<sup>2</sup> Art UK is the online home for public art collections of over 3,400 UK institutions. As of October 2021, Art UK has made available over 250,000 artworks by 50,000 artists.<sup>3</sup>

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<sup>1</sup> "Aggregators work with cultural heritage institutions to gather authentic, trustworthy and robust data and make it accessible through Europeana. Through the Europeana Aggregators' Forum, they work to exchange the knowledge and best practice that supports their work". "Aggregators." *Europeana*, <https://pro.europeana.eu/page/aggregators>, last access: 27.10.2021.

<sup>2</sup> <https://artuk.org/>

<sup>3</sup> <https://artuk.org/about/history>

## Case Studies

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The following case studies have been selected based on three factors: direct contact with their senior management; the ability of the portals to enable research across multiple collections; and the perceived success of the initiative by both the sector and the end-users.

They have been selected following the ‘as close as’ principle. All aim to link their nation’s cultural heritage data and objects via a centralised portal. These data and objects are gathered across the sector: from museums, galleries, libraries, and archives. They all have partner institutions that contribute to the portal via a standardised metadata entry system. All portals allow users to browse or search material, which is presented to them in the form of lists of results or curated content (e.g. stories).

### DigitalNZ

Launched in 2008 Digital New Zealand brings together metadata and over 30 million items from 200 content partners. It is testing new ways to create digital content, collect and share existing digital content and build smart, freely available search and discovery tools. The project is working with New Zealand organisations, communities and individuals to aggregate their metadata and help make hard to find content available for discovery, use and re-use.

It was firstly funded as part of the 2007 Digital Content Strategy, when it was realised that there needed to be an investment in the infrastructure pipeline and in the user interaction strategy. The funding was used to deliver exemplars to demonstrate how to improve and facilitate access and discovery of New Zealand’s cultural heritage, which took the shape of a “test lab approach”.<sup>4</sup> This infrastructure also allowed the creators to see what is possible when you free the licensing of publicly available content for reuse and remixing.<sup>5</sup> Part of the funding was also directed towards policy making, and in particular towards digital standard formats and protocols, and guidance on the digitization process and IPR issues related to digital content for New Zealand GLAM institutions.<sup>6</sup> One of the most significant achievements of this first phase was the creation of the first open and free application programming interface (API) for cultural heritage worldwide, which remains the core of the DigitalNZ platform.<sup>7</sup> The continuous success of this API - and its the growing (and sustained) uptake - lies in the fact that the API has been made easy for the contributing institutions to use, and that it does not impose an inflexible metadata schema;<sup>8</sup> DigitalNZ developers are the ones in charge of adapting the ingested metadata.

Today, DigitalNZ not only provides aggregated metadata from multiple organizations’ collections, but it also offers a range of services that use the API to enhance content discovery, which is open source (as is the data aggregation infrastructure).<sup>9</sup> DigitalNZ search infrastructure is also powering the National Library of New

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<sup>4</sup> The project’s description is mainly based on Fiona Fieldsend’s presentation, “Building a National Collection: DigitalNZ”, part of the *Towards a National Collection* International Seminar Series. 28.01.2021. URL:

[https://www.youtube.com/watch?v=isA30Nz9Vk&ab\\_channel=TowardsANationalCollection](https://www.youtube.com/watch?v=isA30Nz9Vk&ab_channel=TowardsANationalCollection)

<sup>5</sup> See the *Memory Maker Remix* <http://old.kete.net.nz/blog/topics/show/227-memory-maker-digital-remix-tool>, now discontinued.

<sup>6</sup> Now part of DigitalNZ services: <https://digitalnz.org/make-it-digital/getting-started-with-digitisation>

<sup>7</sup> <https://digitalnz.org/developers>

<sup>8</sup> The required metadata are a *title* and a persistent URL.

<sup>9</sup> <https://digitalnz.github.io/supplejack/about.html>

Zealand's collections search<sup>10</sup> and the newly created Digital Pasifik.<sup>11</sup> The DigitalNZ team today focuses mainly on the aggregation of digital content metadata and on user experience as a new way to interact with that content. The user experience is enhanced by the creation of *stories*, to which users can contribute.<sup>12</sup>

The future of DigitalNZ aligns with the National Library of New Zealand's strategy to 2030, which revolves around looking after collections, co-production of content, and co-creation of knowledge, moving towards "a national system of documentary heritage".<sup>13</sup>

## Japan Search

Launched in 2020 Japan Search is a national platform for aggregating 23 million metadata of digital resources from 118 databases and 24 aggregators,<sup>14</sup> which provides an integrated search service, as well as an API, to promote the use of content.<sup>15</sup>

Japan Search is designed to provide a platform for metadata coming from Japanese GLAM institutions as well as universities. Their administration policy is established by the Digital Archive Japan Promotion Committee and the Practitioner Review Committee, while the infrastructure has been developed, funded, and managed by the National Diet Library.

In 2017 the Committees met to discuss the creation and development of the prototype of the Japan Search Project, which was officially launched in 2019. This approach was unusual for Japan ministries, which normally operate within their own domains and do not collaborate on research projects.

The development of Japan Search has been based on these principles: a flexible metadata schema; quick and flexible search functions; international standards and latest technologies (in particular IIIF); and multilingual support (currently supporting Japanese and English). The Japan Search linking model includes metadata from participating institutions that are grouped up into aggregators, as well as from individual participants. Japan Search developers work on the ingested metadata to adapt it to the portal's schema.<sup>16</sup> The Japan Search search infrastructure powers the newly created Cultural Japan portal, with international collaborating institutions.<sup>17</sup>

Japan Search has not yet developed a system of prioritisation of user groups and offers the same service and interface to general and professional users who use the platform to "search, use, or enjoy". The cross-collections search is provided through a search bar in which to insert free text, through customised search filters, and through curated content. Users are also provided with an annotation function, that they can use to annotate images and objects of interest. A user consultation is planned for the future development of the platform. Other future plans include outreach activities, raising awareness on open source and open access, expanding the scope of the platform to local communities, and creating thematic metadata schema (e.g. for newspapers collections).

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<sup>10</sup> <https://natlib.govt.nz/>

<sup>11</sup> <https://digitalpasifik.org/about-us>

<sup>12</sup> <https://digitalnz.org/records?tab=Stories&text=#/>

<sup>13</sup> Mark Crookston, "Towards a **National** Collection", part of the *Towards a National Collection* International Seminars Series. 28.01.2021. URL: [https://www.youtube.com/watch?v=isA30Nz9Vk&ab\\_channel=TowardsANationalCollection](https://www.youtube.com/watch?v=isA30Nz9Vk&ab_channel=TowardsANationalCollection)

<sup>14</sup> <https://jpsearch.go.jp/organization?from=0>

<sup>15</sup> The following description is based on Professor Akihiko Takano's presentation 'Japan Search: the National Discovery Platform for Digital Resources' part of the *Towards a National Collection* International Seminars Series. 28.01.2021.

URL: [https://www.youtube.com/watch?v=isA30Nz9Vk&ab\\_channel=TowardsANationalCollection](https://www.youtube.com/watch?v=isA30Nz9Vk&ab_channel=TowardsANationalCollection)

<sup>16</sup> The required metadata are a *title* and a *creator*.

<sup>17</sup> <https://cultural.jp/>

## Deutsche Digitale Bibliothek

Founded by the German Federal Government and the 16 German States, Deutsche Digitale Bibliothek (DDB) is aiming to bring together the digital content from all of Germany's cultural and scientific institutions. To date, it connects 4,661 institutions, of which 498 are providing data that amounts to 36,974,518 items (including 12,593,503 digitised media).<sup>18</sup> DDB is a cross domain aggregator with digitised collections and indexing information from cultural and scientific institutions such as archives, libraries, museums, monuments offices, media libraries, universities and other research organisations. Each sector is coordinated by Specialist Departments housed across Germany. The DDB is also a partner of Europeana and is involved in issues relating to copyright, licences, and digital cultural memory.<sup>19</sup>

The aim of DDB is to aggregate cultural heritage data that is distributed all over Germany and to make it available for free to the general public. The portal provides access to metadata of multiple collections, and a direct link to the original data provider for further information on a specific item. The data providers are divided into "thematic", "sector", and "regional" aggregators.

The first discussion around a German national aggregator started in 2004/05, and it was originally created as a data provider to Europeana. An official administrative and financial agreement between the 16 states and the Federal Government was made in 2009. In 2011 8.5 million Euros were invested in the development of the infrastructure. The beta launch of the platform was in 2012. Since 2015 the project has received about 4.5 million Euros/year for the permanent running of the platform. Additional funding is also provided for targeted projects involving different users and collections (e.g. educators and small cultural heritage institutions).

An ongoing discussion is about whether the DDB should only include digitised objects or also references to objects that are not yet digitised; for the moment, archival documents are recorded on the platform even without their digital reproduction, as archives need an extra support for visibility and discoverability. Further discussions around the evolution of the platform include data scalability; acceleration of the metadata uploading process; and decoupling of records.

Until recently, the DDB interface presented a single search bar, in which to type in free text.<sup>20</sup> During the summer of 2021, the interface has been implemented, adding to the search bar a rich selection of curated content (similarly to the new Europeana interface).<sup>21</sup> Further curated content is provided in the "Journal" section, which includes virtual exhibitions, to which users can contribute.<sup>22</sup>

The DDB is currently conducting an extensive user analysis, whose results will be available in 2022. Further strategic priorities will be discussed in workshops in the coming months.

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<sup>18</sup> <https://www.deutsche-digitale-bibliothek.de/about-us/institutions#map>

<sup>19</sup> The following description is based on Professor Monika Hagedorn-Saupe's presentation "Visions for Cultural Heritage and Digital Platforms", part of the *Towards a National Collection* International Seminars Series. 21.04.2021. URL: [https://www.youtube.com/watch?v=thK5ZjQbUR4&ab\\_channel=TowardsANationalCollection](https://www.youtube.com/watch?v=thK5ZjQbUR4&ab_channel=TowardsANationalCollection)

<sup>20</sup> <https://www.deutsche-digitale-bibliothek.de/>

<sup>21</sup> <https://www.europeana.eu/en>

<sup>22</sup> <https://www.deutsche-digitale-bibliothek.de/content/journal>



## Cultura Italia

Cultura Italia is the national portal for aggregating Italian cultural heritage, managed by the Central Institute for the Union Catalogue of Italian Libraries and the Italian Ministry of Cultural Heritage, Activities and Tourism. It is a cross domain aggregator of more than 2.4 million items of metadata from 32 partners representing museums, libraries, archives, and galleries.<sup>23</sup> As the Italian national aggregator, it has played a role in Europeana, building cooperative networks and coordinating technical activities.<sup>24</sup>

The first version of the project was realised in 2005, while the pilot version of the national portal was officially released in 2008. At first, its aim was to create an aggregation system for digital objects, collections, scientific publications, and news about cultural heritage; the aims changed throughout the three restyling phases of the portal according to the actual uses and needs of the contributing institutions.

The current aim of the portal is to provide a unique access point to digitised Italian cultural heritage and to share the ingested resources at a national and international level. This access point does not aggregate digitised items, which are hosted and managed by the collaborating institutions. Cultura Italia ingests and shares only metadata from these participating collections across the GLAM sector.

The project developed an application profile called PICO,<sup>25</sup> an enhanced version of the Dublin Core metadata standard, based on a few mandatory fields to be completed by contributing collections.<sup>26</sup> The contributing institutions are divided into 'thematic aggregators', 'big public and private institutions' and 'small public and private institutions'. The ingested information is then shared through the Cultura Italia portal, the Cultura Italia OAI-PMH repository, and the Cultura Italia Linked Open Data section, in order to maximise the reuse of the metadata by others.

In the future, Cultura Italia aims to not only be an aggregator, but a point of reference for the digitisation of Italian cultural heritage; to improve the data quality; and to encourage open access and open licenses, adopting the same licensing framework used by Europeana.

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<sup>23</sup> [http://www.culturaitalia.it/opencms/partner\\_digitali\\_it.jsp?language=it](http://www.culturaitalia.it/opencms/partner_digitali_it.jsp?language=it)

<sup>24</sup> The following description is based on Antonio Davide Madonna's presentation 'Building a National Collection: Cultura Italia', part of the *Towards a National Collection* International Seminars Series. 21.04.2021. URL: [https://www.youtube.com/watch?v=thK5ZjQbUR4&ab\\_channel=TowardsANationalCollection](https://www.youtube.com/watch?v=thK5ZjQbUR4&ab_channel=TowardsANationalCollection)

<sup>25</sup> <http://www.culturaitalia.it/opencms/export/sites/culturaitalia/attachments/documenti/picoap/picoap1.0.xml>

<sup>26</sup> The required metadata are a *title, identifier, type, subject, url, preview image, metadata license, and data license*.

# Observations and Recommendations for a Future Infrastructure

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The general survey of digital initiatives (Appendix A) and the four case studies have shown how the future infrastructure for a virtual national collection should address the following issues:

- **Thinking of end users from the beginning:** to attract and engage audiences several aggregators include a separate section of the website dedicated to users, usually not integrated in the homepage, or some filter options to apply to the free-text search. User traffic data indicate that this approach is not the most effective. The future virtual national collection needs to consider user needs first, and develop its infrastructure accordingly.
- **Preferring curated content over a free text search bar:** the interfaces of most aggregators present a single point of access in the form of a search bar, via a free-text search. This type of search limits research paths and discovery of unexpected content; the thousands of results coming from this type of search can be overwhelming to some users. Presenting data and images in the form of curated content and stories can be a solution (e.g. Europeana and DDB new interfaces); however, a potential pitfall could be that curated content does not always appeal to researchers. The future infrastructure should include a mixed approach, basing on different users' behaviours.
- **Balance between quality and quantity:** there are examples of digital collections that display fewer digital assets but provide rich metadata and adhere to international standards, and others that opt for having all of their content digitised, without it all always being of the highest quality. As the future national collection aims to provide access to multiple collections, it will need to be able to work with differing standards of data and digital assets.
- **Flexible metadata schema:** if the future infrastructure includes a service for aggregation of metadata, the data aggregation system should allow for flexibility in the ingestion process. This flexibility has proven to attract and maintain the uptake from contributing collections.
- **Smart use of existing systems:** if the future infrastructure includes a service for aggregation of metadata, it should adopt and adapt what is already available (e.g. open source APIs developed by other national aggregators).
- **Adherence to international standards:** in order to foster international collaboration and to improve sustainability, the future infrastructure should adopt international standards (e.g. IIIF protocol for images, Persistent Identifiers for digital items, Creative Commons licenses for items in the public domain). When standards in some areas are not yet established, the future infrastructure should become a leader in developing guidelines to be adopted internationally. This could include a vocabulary for digital cultural heritage initiatives.
- **Importance of continued, long-term funding and central role of partnerships:** all the international initiatives surveyed recognised continued governmental funding and institutional partnerships as key elements for their survival and success. In order to ensure sustainability and durability, *Towards a National Collection* should consider carefully what aspects of the future infrastructure should be prioritised, and manage the funding accordingly (e.g. DigitalNZ is currently focusing on data aggregation and infrastructure maintenance more than research innovation). This prioritisation should be based on experience and actual (technological, institutional, users) needs, and on the kinds of partnerships involved.

- **Creating and leading a network of national portals:** considering the worldwide effort of digitising and making cultural heritage available through digital portals, and the shared interests and aims across different countries, it would be advisable to create a network of national portals. This would ensure better communication and collaboration around key-issues such as development of international standards; technological innovation; user engagement; and equality practices. The future infrastructure could be the virtual home of this international network.

# Appendices

## Appendix A – General Survey of International Digital Initiatives

This general survey considers a total of 47 initiatives across 21 countries.<sup>27</sup> 10 out of 47 (shown in the last two tables) are projects that relate to *Towards a National Collection's* priorities: public engagement; technological innovation; Equality Diversity and Inclusion practices; Intellectual Property Rights and open access. The remaining 37 are national portals. Where fields are blank, data was not available.

National Aggregators: Asian Pacific						
Country	Name	Sector	Funding	Start Year	N. of entries	Notes
Australia	<a href="#">Australian Heritage Database</a>	Historic Environment	Australian Government - Department of Agriculture, Water, and Environment	2000s	20,000	
Australia	<a href="#">Trove</a>	All	Department of Infrastructure, Transport, Regional Development and Communications - National Library of Australia	2009	6,000,000,000	The number includes metadata
Australia & New Zealand	<a href="#">DigitalPasifik</a>	All	Australian Government - Department of Foreign Affairs and Trade	2020		
New Zealand	<a href="#">DigitalNZ</a>	All	New Zealand Government - Department of Internal Affairs	2008	31,606,825	
Japan	<a href="#">ColBase</a>	Museums	Japanese Government		139,834	
Japan	<a href="#">Cultural Japan</a>	All	Japanese Government		>1,000,000	
Japan	<a href="#">Japan Search</a>	All	National Diet Library	2018	23,427,363	
India	<a href="#">National Digital Library of India</a>	All	Government of India - Ministry Education		>75,000,000	
Republic of Korea	<a href="#">National Museum of Korea</a>	Museums	Government		6,717	
Republic of Korea	<a href="#">The Virtual collection of Asian Masterpieces</a>	Museums	Asia-Europe Museum Network (ASEMUS)	2007	2,748	
Singapore	<a href="#">Roots</a>	Museums and Galleries	Ministry of Culture, Community and Youth - The National Heritage Board	2016	105,630	
HKSAR	<a href="#">The Hong Kong Heritage Project</a>	Archives	Kadoorie Family, The Hongkong and Shanghai Hotels Limited, and CLP Holdings Limited	2007		

<sup>27</sup> A map of the national portals can be found here: [https://www.google.com/maps/d/u/0/edit?mid=1cDWYwQI88gE\\_rWZjt1ryE1PyLssd4NA1&usp=sharing](https://www.google.com/maps/d/u/0/edit?mid=1cDWYwQI88gE_rWZjt1ryE1PyLssd4NA1&usp=sharing)

National Aggregators: Europe						
Country	Name	Sector	Funding	Start Year	N. of entries	Notes
Austria	<a href="#">KulturPool</a>	All	Ministry of Arts, Culture, Civil Service, and Sport & Ministry of Education, Science, and Research	2008	230,000	Europeana aggregator - n. of objects available through Europeana
Belgium	<a href="#">Erfgoedplus.be</a>	All	Department of Culture, Youth and Media	2008	150,000	Europeana aggregator - n. of objects available through Europeana
Belgium	<a href="#">Hescida (Belgium Royal Institute for Cultural Heritage)</a>	Research Data			750,000	Europeana aggregator
Estonia	<a href="#">E-Varamu</a>	All	European Regional Development Fund	2015	17,907,747	Europeana aggregator
France	<a href="#">POP la plateforme ouverte du patrimoine</a>	All	Ministry of Culture	2018	3,000,000	
France	<a href="#">Gallica</a>	All	Ministry of Culture	1997	8,461,164	Europeana aggregator
Germany	<a href="#">Deutsche Digitale Bibliothek</a>	All	Federal Government	2007	38,259,392	Europeana aggregator; 13,195,143 with digitised media
Germany	<a href="#">Prometheus</a>	Art historical images	Institute of Art History of the University of Cologne	2001	2,806,636	
Greece	<a href="#">SearchCulture.gr</a>	All	Ministry of Digital Governance		500,000	Europeana aggregator
Italy	<a href="#">Catalogo Generale dei Beni Culturali</a>	All	Ministry of Culture		2,834,960	
Italy	<a href="#">CulturalItalia</a>	All	Ministry of Cultural Heritage and Activities		3,400,000	Europeana aggregator
Netherlands	<a href="#">Digital Collectie</a>	All	Ministry of Education, Culture and Science - National Strategy for Digital Heritage	2011	2,500,000	Europeana aggregator
Portugal	<a href="#">Registo Nacional de Objetos Digitais</a>	Libraries	Ministry of Culture - National Library of Portugal	2013	150,000	Europeana aggregator
Switzerland	<a href="#">Swisscovery</a>	Academic Libraries		2017	30,000,000	

National Aggregators: North America						
Country	Name	Sector	Funding	Start Year	N. of entries	Notes
Canada	<a href="#">Artefacts Canada</a>	All	Government of Canada		4,000,000	and 1,000,000 images
Canada	<a href="#">Library and Archives Canada</a>	Libraries and Archives	Government of Canada		25,000,000	
United States	<a href="#">DPLA (Digital Public Library of America)</a>	Libraries and Archives	Private Foundations and Government Agencies	2013	44,918,855	
United States	<a href="#">Library of Congress – LC Labs</a>	Libraries and Archives	Federal Government		15,000,000	
United States	<a href="#">New York Public Library</a>	Libraries	Private Foundations and Public Funding		913,184	
United States	<a href="#">Smithsonian Open Access</a>	All	Federal Government	2020	3,900,000	
United States	<a href="#">The Getty Research Institute</a>	All	Non-Profit Private Organisation			
Brasil	<a href="#">Brasiliana Iconografica</a>	Art historical images		2017	2,582	
Brasil	<a href="#">Instituto Brasileiro de Museus</a>	All	Ministry of Tourism	2009		
International - Netherlands	<a href="#">Europeana</a>	All	European Commission	2010	50,000,000	
International - United States	<a href="#">Artstor Digital Library</a>	All	ITHAKA		25,000,000	
International	<a href="#">PHAROS</a>	Photo Archives	Andrew Mellon Foundation	2013	25,000,000	New version using ResearchSpace soon to be released

Other Relevant Initiatives			
User Engagement		EDI Practices & Ethical Issues	
India	<a href="#">The Heritage Lab</a>	United States	<a href="#">Algorithmic Justice League</a>
Netherlands	<a href="#">Rijksmuseum - Rijksstudio</a>	United States	<a href="#">Enslaved.org (Michigan State University)</a>
International	<a href="#">Van Gogh Worldwide</a>		
United States	<a href="#">Google Arts and Culture</a>		

Other Relevant Initiatives			
Technological Innovation		IPR issues for digital collections	
International	<a href="#">Time Machine EU</a>	Italy	<a href="#">ReCreating Europe (WP5)<sup>28</sup></a>
Germany	<a href="#">Urban complexity Lab (Potsdam University)</a>	International	<a href="#">OpenGLAM</a>

<sup>28</sup> IPR issues related to cultural heritage

## Appendix B - International Series Webinars

Event	Date	Link
Building a National Collection: DigitalNZ & JapanSearch	28.01.21	<a href="#">TaNC Webinar: DigitalNZ &amp; Japan Search - YouTube</a>
Building a National Collection: CulturaItalia & DDB	21.04.21	<a href="#">TaNC Webinar: CulturaItalia &amp; Deutsche Digitale Bibliothek Webinar - YouTube</a>
Copyright and Open Access for Digital Collections: a Roundtable Discussion	26.05.21	<a href="#">TaNC Webinar: Copyright and Open Access for Digital Collections: a Roundtable Discussion - YouTube</a>
Digital Public Engagement Strategies	28.07.21	<a href="#">TaNC Webinar: Digital Public Engagement Strategies - YouTube</a>



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