The DiSCmap project: Digitisation of Special Collections: mapping, assessment, prioritisation

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Abstract

Purpose – *The paper presents the outcomes of DiSCmap, a JISC and RIN-funded project which aimed to study users' priorities for digitisation of special collections within the context of the higher education institutions in the UK.*

Design/Methodology – *The project produced a "long list" of 945 collections nominated for digitisation by intermediaries and end users and a user-driven prioritisation framework. Web surveys were used as a tool to gather data in combination with focus groups and telephone interviews with end users helped to get additional insights on their views in particular domains. The project developed an online forum and a group in Facebook in order to find to what extent the social networking technologies can be used to sustain a professional informal community but this did not prove to be successful. Over 1000 specialists took part in the different forms used to gather intermediaries and end users' nominations of collections for the "long list" and opinions about digitisation priorities.*

Findings *– The long list of 945 special collections nominated for digitisation can be useful as an evidence of identified user interest; this list is not seen as a "snapshot" but as an outcome which needs to be sustained and further developed in the future. A user-driven framework for prioritizing digitisation was produced; it fits well with the current JISC digitisation strategy, providing a further level of detail on user priorities. The project also suggests a flexible approach for prioritizing collections for digitisation based on the use of the framework in combination with the long list of collections.*

Research limitations/implications *– The project did not make a representative study; the participation of intermediaries and end users was a matter of good will. Yet, special collections from 44% of the higher education institutions in the UK were nominated to the long list.*

Originality/Value *– The work on the project provided new insights and evidence on the user priorities in digitisation of special collections. It also suggests a user-driven digitisation prioritization framework which would be of benefit in future decision making.*

1. Introduction

Traditionally, digitisation has been led by supply rather than demand. While end users are seen as a priority they are not directly consulted about which collections they would like to have made available digitally or why. This can be seen in a wide range of policy documents throughout the cultural heritage sector, where users are positioned as central but where their preferences are *assumed* rather than solicited. Post-digitisation consultation with end users is equally rare. How do we to know that digitisation is serving the needs of the Higher Education community and is sustainable in the long-term?

The "Digitisation in Special Collections: mapping, assessment and prioritisation" (DiSCmap) project, funded by the Joint Information Systems Committee (JISC) and the Research Information Network (RIN) and run jointly by the Centre for Digital Library Research (CDLR) and the Centre for Research in Library and Information Management (CERLIM), has taken a collaborative approach to the creation of a user-driven digitisation prioritisation framework, encouraging participation and collective engagement between communities.

Between September 2008 and March 2009 the DiSCmap project team asked over 1,200 intermediaries and end users a variety of questions about which physical and digital Special Collections they make use of and what criteria they feel must be considered when selecting materials for digitisation. This was achieved through focus groups, interviews and two online questionnaires.

1.1. Definitions of "Special Collection"

In attempting to establish a framework of priorities for the digitisation of Special Collections in an age of electronic mass media, it was necessary to address both their changing forms of use and the shifting contexts of their reception. Amidst such complexity, it is beneficial to start from the fundamental question posed in June 2008 by Alice Prochaska (Prochaska, 2008): "*What are Special Collections today, and what will they be in the future?*"

In an attempt to answer this, we surveyed a range of definitions, an illustrative sample of which are given below:

> "*Special Collections are defined as those collections of library materials which, by virtue of their physical form content or depth of subject coverage are distinguished from the general stock of the Library. As a result the collection management policies which apply to Special Collections may be different to those which apply to the rest of*

the library stock. They are maintained as separate and identifiable collections and may contain materials which are not included in the library catalogue. A list is available on the Special Collections page." - Northumbria University (2007). Special Collections and Rare Books Policy (2007).

"*For the purposes of this project, Special Collections are rare, often unique materials generally housed in secure, monitored environments. Archives are unique collections associated with a specific individual or organization. By not defining these terms prescriptively, we hope to encourage a process that is encompassing and revelatory."* – CLIR (2008). Cataloging Hidden Special Collections and Archives: Building a New Research Environment.

"*By definition, a Special Collection implies a limited scope and definite purpose... Materials acquired for Special Collections support research of students, faculty, post-doctoral researchers and established scholars and authors.*" - Haworth, K. (2007). York University Libraries, Special Collections Policy.

Our working understanding of a Special Collection was greatly informed by the conceptualisation proposed by Michael Heaney, whose granular, entity-relationship based "Analytical Model of Collections and their Catalogues" (Heaney, 2000) can apply to any Collection, Special or otherwise. This inclusive model helped us defining the structure of our survey instruments used for the study of intermediaries and end users. We believe that this model accommodates well the differences between museum, library and archival views on the groupings of objects.

Due to the ambitious but time-constrained nature of the project, and with an understanding that collection description is itself a question which can be debated interminably, it was decided to approach the definition of "Special Collections" pragmatically. Special Collections, were therefore accepted as being collections identified as such by the staff of libraries, museums and archives, arranged and curated as such, and (at least to some extent) already made accessible to researchers and the public under their special conditions of use.

1.2.   Aims and Objectives

The aims of DiSCmap were to:

- Identify priority collections for potential digitisation housed within UK Higher Education (HE)'s libraries, archives and museums as well as faculties and departments.
- Assess users' needs and demand for Special Collections to be digitised across all disciplines.
- Produce a synthesis of available knowledge about users' needs with regard to usability and format of digitised resources.
- Provide recommendations for a strategic approach to digitisation within the wider context and activity of leading players both in the public and commercial sector.

Specific objectives were:

- To survey and consult with both direct end users (researchers, teachers, subject-specific societies) and intermediaries (librarians, curators and collection managers) to gauge their view on the collections to prioritise for digitisation.
- Devise a list of priority Special Collections as candidates for potential future digitisation based on users' need and demand.
- Survey the strategic approach to digitisation of key players in the field, in the public, not-for-profit and commercial sectors, in order to examine the complementarities of

digitisation activities pursued by different players and on that basis to provide informed strategic recommendations on future digitisation to JISC and RIN.

- − Produce a synthesis of previous and current studies which have focused on identifying researchers' needs with regard to issues of usability and consumption of digital resources.

2. Methodology and Implementation

The project delivered:

- − A long list of collections;
- − A framework of user-driven criteria for digitisation;
- − Analysis of the application of the framework of user-driven in order to produce a short-list for digitisation.

The implementation of DiSCmap was organised seeking to make its results:

- − Representative (by a fair UK wide regional distribution).
- − Non-hierarchical (includes Ancient, Old, Redbrick, Post-Robbins and New/Post-1992 HEIs - in our terms, for simplicity, "Pre-1960", "Post-Robbins" and "Post-1992").
- − Granular (by surveying both intermediaries and end users).
- − Functional (deliver the resources users want and need).

2.1. The work on the long list of collections

In order to gain the most comprehensive picture of current digitisation priorities for Special collections within UK HEIs, a twofold strategy was adopted centring on the deployment of discrete questionnaires. The project questioned "intermediary users" – librarians, archivists, curators and the scholarly community of "end users", later combining the findings of the two.

At the same time as the DiSCmap survey was being undertaken, Research Libraries UK (RLUK) was engaged in surveying their own members as to their digitisation priorities for Special Collections. A decision was taken to exempt RLUK member libraries from the DiSCmap survey due to take up problems which may arise from "survey fatigue" with an agreement that the RLUK survey outputs would be integrated with the CDLR's survey of intermediary users.

The work on the long list included more than just mechanical gathering of data on collections; correction and de-duplication of records were part of the process. In addition the project team compared the nominated collections with an established collection-level description service, SCONE, which provided additional insights on the structure of nominated collections.

As a result, data on 945 collections[1] were included in the long list (from 988 nominated collections in total which included some repetitive nominations). Fig. 1 presents the sources of all collections in DiSCmap, and in Section 3.1. we present descriptive data which pinpoint what type of queries can be done using the long list.

DiSCmap used Microsoft Access for gathering the data on collections nominated to the long list. The origin of the data influenced the level of detail provided and in particular allows to highlight differences in the way intermediary and end users are currently understanding what a Special Collection is.

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[1] It should be noted that the RLUK data included a spreadsheet with detailed data (called here RLUK survey) and a list of collections which consisted only of collection titles (called here RLUK list). The RLUK survey also included complementary collections and we added them to the long list, because in multiple cases these collections were not nominated by the institutions where they were kept.
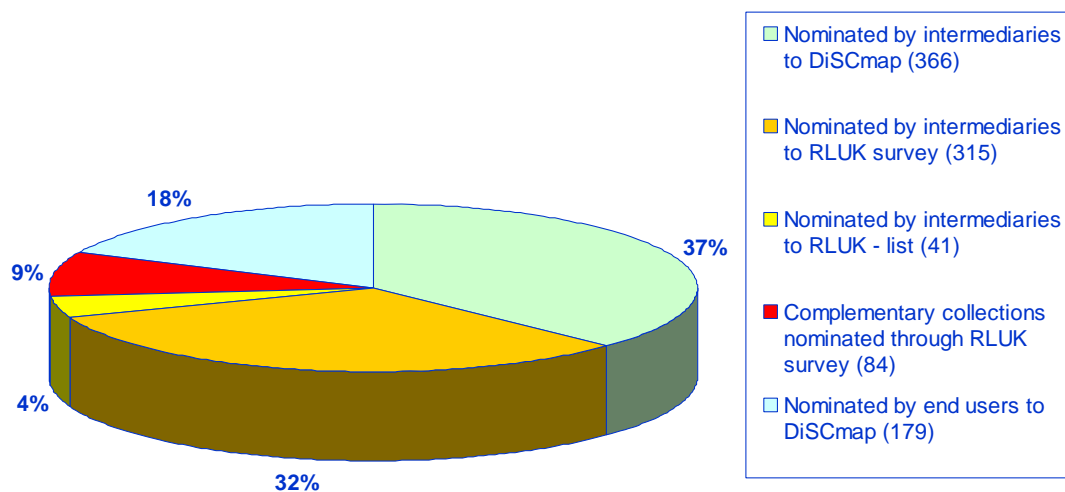
Legend:
- Nominated by intermediaries to DiSCmap (366)
- Nominated by intermediaries to RLUK survey (315)
- Nominated by intermediaries to RLUK - list (41)
- Complementary collections nominated through RLUK survey (84)
- Nominated by end users to DiSCmap (179)

Figure 1. The collections in the long list according to their source

2.2. The work on the user-driven framework of criteria for digitisation

In order to collect a wide range of professional opinions, DiSCmap conducted two surveys: with the intermediary and the end users. It was decided to use different approaches when surveying the intermediaries and end users. The survey of intermediaries asked to provide justification of digitisation reasons and thus DiSCmap collected a rich set of compact digitisation cases. At the pilot stage of the survey with intermediaries, content analysis was used to group the most popular criteria emerging, and during the mass survey intermediaries had the chance not only to provide digitisation cases, but also to select from a list of five criteria for digitisation those which are relevant to a particular nominated collection.

Thus the intermediary survey allowed constructing a set of user-driven priorities based on the evidence in the digitisation cases.

The end user survey adopted a different approach which suggested a wide range of possible digitisation reasons. This list was based on a combination of the findings based on the analysis of the pilot survey with the intermediaries and on the analysis of seven frameworks suggesting priorities for digitisation.

The outcomes of this survey provide valuable quantitative data which allow ranking the importance of the suggested criteria according to the end users' views.

Thus, the framework of end user criteria was developed as a combination of the content analysis of the digitisation cases suggested by the intermediary users with the quantitative analysis of the end user survey data and was also informed by the JISC Digitisation Strategy and six frameworks for digitisation.

2.3. The work on the short list for digitisation

The work on the user-driven framework of criteria for prioritising digitisation provided valuable insights to this process and the differences between intermediaries and end users. During the work on the project the team consolidated around the opinion that instead of producing one single short list (like a snapshot of the moment and a selected subset of criteria) it should motivate the use of a flexible approach in obtaining short lists.

The use of Microsoft Access to store the data on the collections from the long list allowed us to use queries which would model a single criterion or a combination of criteria.

This flexible approach provides the necessary freedom in future decision making process on prioritising digitisation, and is of special advantage of multifaceted domains such as user-driven priorities in digitisation.

3. Outputs and Results

3.1. The long list of collections

This section provides a set of descriptive statistical data on the collections in the long list.[2]
Below we present tables and diagrams which illustrate what data had been collected; this illustrates the richness of potential future uses of the long list.

- ***Total number of collections***

After normalisation, de-duplication and consolidation, the total number of collections is 945.

- ***Collections by source***

The distribution of collections by their source is illustrated on Fig. 1; Table 1 provides further detail on the provenance of the data in the long list.[3]
It is essential to know what the sources of the nominated collections are, because the level of detail in the data differs in the various sources.
Collections can have more than one source and be nominated more than once within a source, so overall total figures do not match source figures. Figures "by source" count nominations, not distinct collections.

Key	Source	Total	Note
A	DiSCmap survey of intermediaries	366	The data on these collections are most complete.
B	RLUK survey	315	Complete excluding data on impact.
C	RLUK list (Aberdeen University)	41	This was just a list of titles of collections and thus the records are incomplete.
D	RLUK survey complementary	84	The RLUK survey asked for collections which would complement the nominated collections; these have been treated as additional nominations. One of the reasons was that institutions holding collections mentioned as complementary collection to other collections did not normally nominate these collections for digitisation or have not responded to the survey at all.
E	DiSCmap survey of end users (CERLIM)	192	These collections were mentioned by end users. The data on them are also incomplete. One specific issue about these collections is that the level of granularity seen by the end users differs from the understanding of the intermediaries. End users nominate super- or sub-collections (e.g. the collections of the British Library, or the manuscripts within a particular collections) as collections.

Table 1. Sources of data on collections

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[2] We again would like to emphasize that the various nature of the sources of the collections in the long list, the data are not always homogeneous; in this section we include warnings when this is the case. DiSCmap collected a huge amount of initial data but did not have the resource and the time to fill all missing data – this would require to contact intermediaries responsible for the respective collections.
[3] Please note that the key values from this table (A-E) will be used further when it is necessary to distinguish the sources of data.

- ### *Collections by curatorial environment*

The "curatorial environment" of the nominated collections breaks down as shown on Fig. 2. A follow-up of the project may target specifically the museums and the departments which still are not strongly presented in the long list.
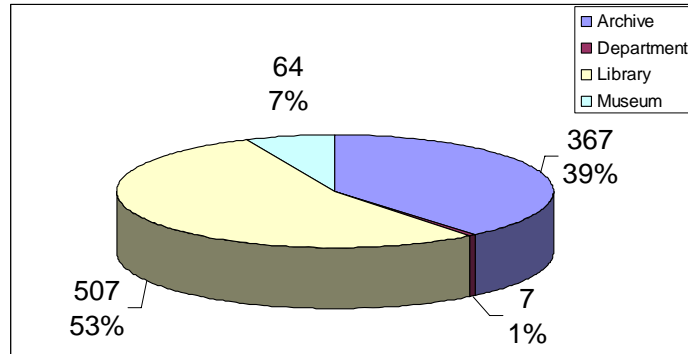

Figure 2. Collections by curatorial type

- ### *Collections by region*

The distribution of the nominated collections by region is shown on Fig. 3. It clearly illustrated that there are regions which are not well represented in the long list.

Since the nomination of collections was a matter of good will of intermediaries which decided whether they would like to respond to DiSCmap survey, a future effort might target especially those institutions which have not answered this survey.
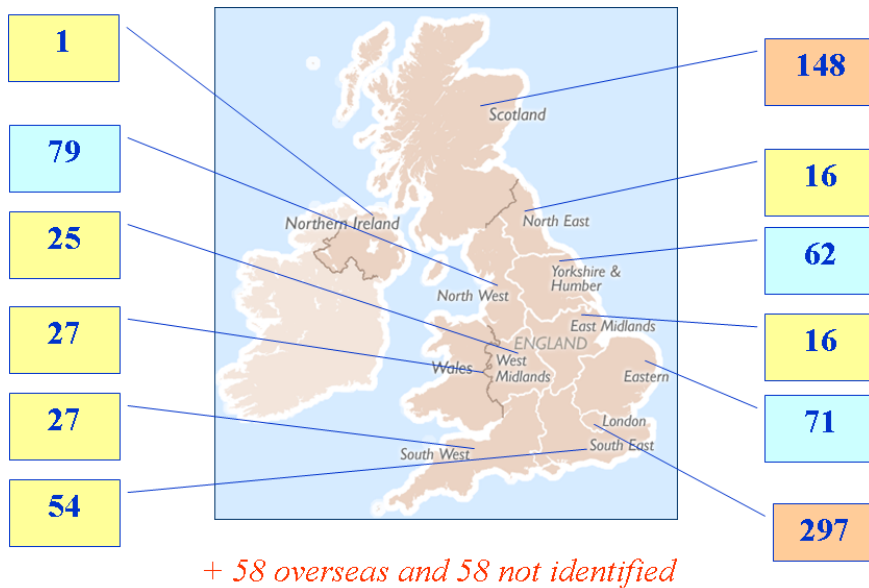

+ 58 overseas and 58 not identified

Figure 3. Collections by region.[4]

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4 The map of the UK HE regions is taken from the HERO website (www.hero.ac.uk).

- ## *Collections by institution type*

The distribution of collections in the long list according to the type of institution which is taking care of them is presented in Fig. 4.
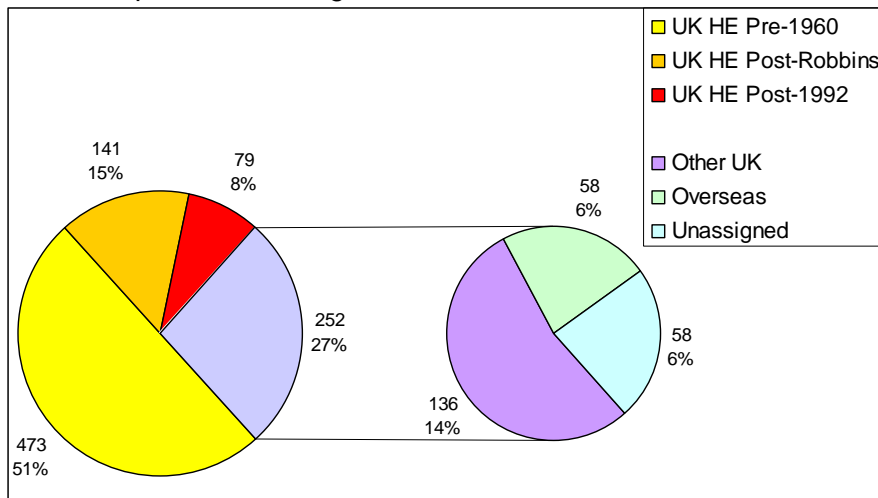

Figure 4. Collections by institutional type

Although 51% of all nominated collections in the list belong to the holdings of HEIs founded before 1960, the most active in terms of responding to the survey were the institutions founded after 1992 (57% of them responded to the survey). Respectively, 47% of the pre-1960 institutions and 35% of the Post-Robbins institutions responded to the survey. Having in mind the nature of the project, where the participation of the intermediaries was a matter of good will, the overall response from 44% is very satisfactory.

For individual HEIs, the number of nominated collections varied from 1 to 67 collections.

- ## *Collections by age range*

Collections can have more than one age range. Table 2. presents the number of collections which contain items from particular time period.

Range	A	B	C	D	E	Total
-1799	90	153	0	1	8	237
1800-1899	192	157	0	1	10	340
1900-1949	233	139	0	1	9	366
1950-1999	221	86	0	1	5	300
2000-	85	16	0	0	2	100

Table 2. Collections by age

A - DiSCmap survey of intermediaries, B - RLUK survey, C - RLUK list (Aberdeen University), D - RLUK survey complementary collections, E - DiSCmap survey of end users (CERLIM)

- ***Collections by subject***

The number of collections across subjects is presented on Fig. 5. The subjects are aligned to high-level HESA[5] subject codes, extended with several additional subjects within the Humanities and Arts in order to understand better the structure of the nominated collections in these domains. This is the area where digitisation is still most popular, as suggested by the Loughborough Study (see JISC 2008).
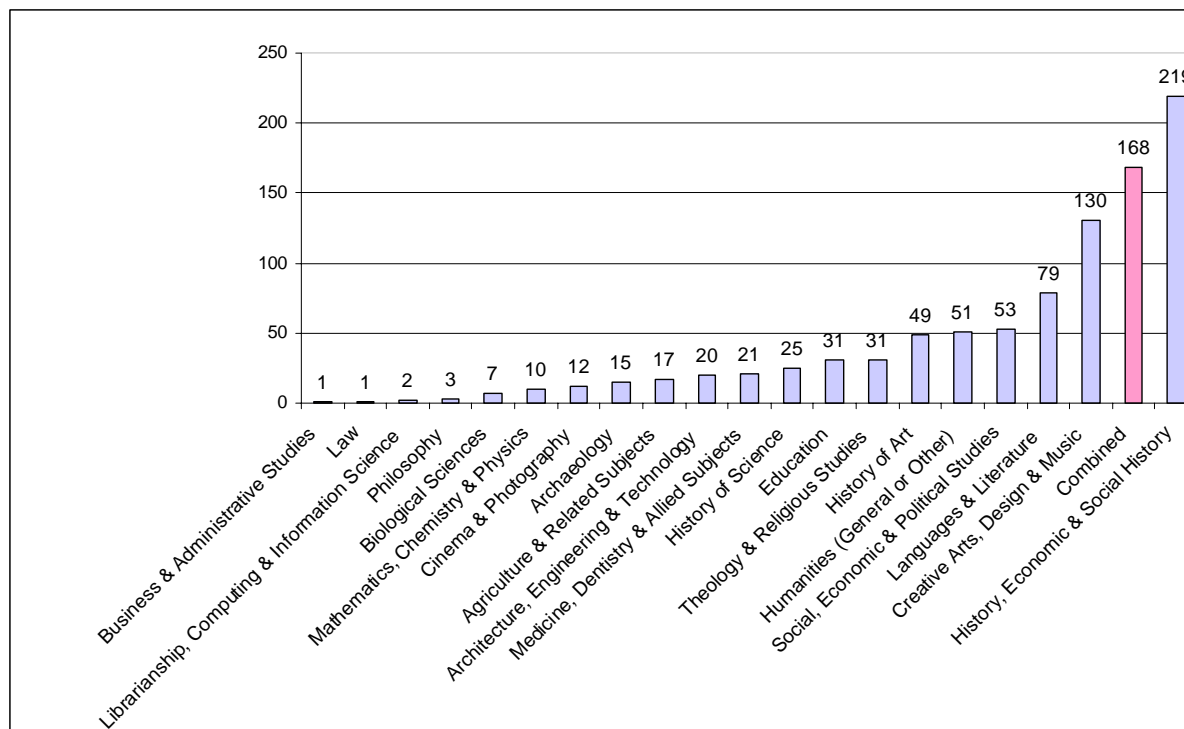

Figure 5. Collections by subject

DiSCmap also has the distribution of collections by language, digitisation status, IPR issues, preservation status, material type which are not provided here.

3.2. The prioritisation criteria articulated by both intermediaries and end users and the creation of the *user-driven framework*

In order to develop a user-driven framework of criteria for prioritising digitisation, we analyzed the cases for digitisation provided by intermediaries and gathered quantitative data on the priorities seen as most essential by end users.

- ***The typology of user orientated digitisation criteria to emerge from the mass survey of intermediaries***

The following list of 10 separate User oriented digitisation criteria is an inclusive one discerned from the content analysis of the DiSCmap intermediary survey response.
- to improve/facilitate access
- to meet evidence of user demand
- to enhance teaching of undergraduate and taught masters course
- to enhance teaching of networked courses for distance learners
- to support ongoing research
- support research in multiple disciplines (interdisciplinarity)

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[5] Higher Education Statistics Agency (HESA), http://www.hesa.ac.uk/

- a means of furthering collaborative research projects
- potential to create a new subject area for research
- create / support research and teaching using new media
- potential impact for users beyond the boundaries of HE

Here no attempt has been made to establish a ranking in order of priorities or in the order in which intermediaries or end users advanced them – nor was the user-related criteria solely advanced by end users in the survey.

- ### *The study of the end users and its findings*

The current and future needs of users of digitised content were sought via 1) a thorough analysis of studies and research undertaken within the field focussed on end users 2) consultation with direct end users.
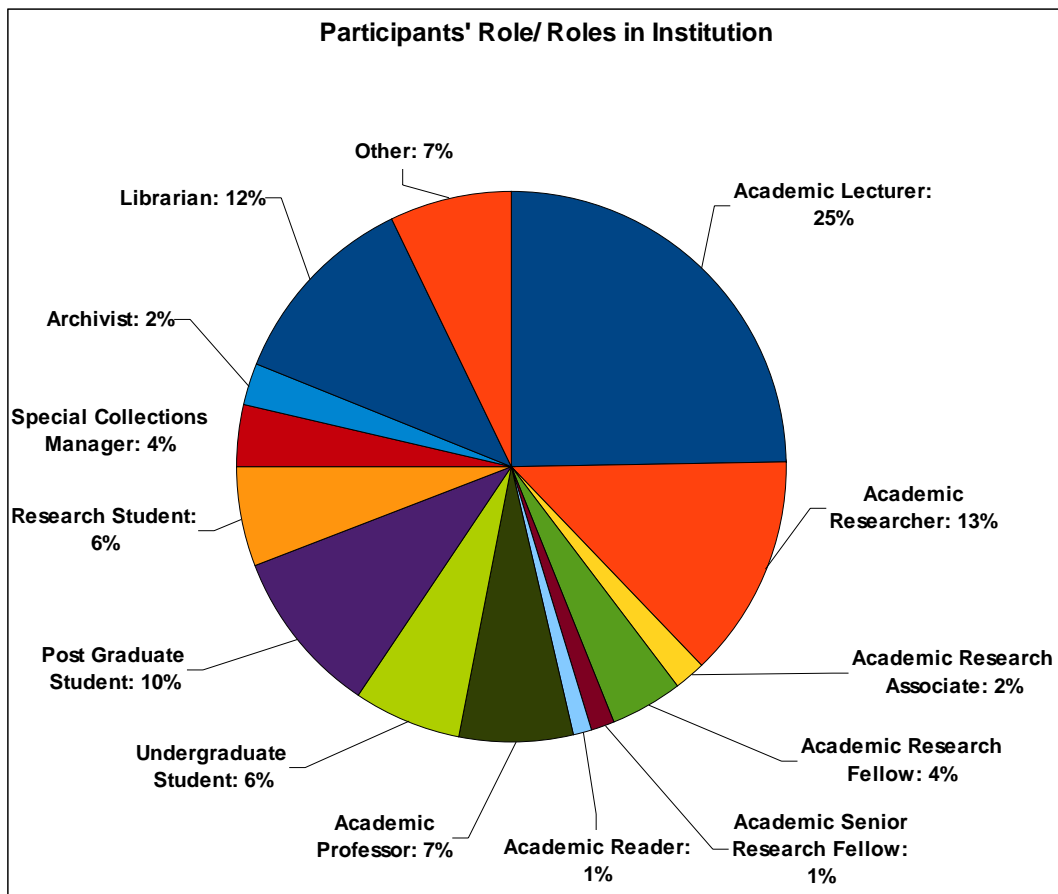

Figure 6. Breakdown of end user survey participants

Fig. 6 provides a breakdown of end user survey participants. Respondents were able to select multiple roles, for example a lecturer may have wished to indicate that they both actively teach and undertake research. The responses indicated that the participant's roles comprised:

- Lecturers – 25%
- Students - 22%
- Researchers – 20%
- Intermediaries – 18%
- Readers and Professors – 8%

Few participants described themselves as "Other"; these roles included Administrative Assistant, Retired, and Designer.

- ***User's criteria for prioritisation of a collection for digitisaion***

Participants were asked to indicate their own criteria for a Special Collection to be digitised by selecting as many criteria from a list as they felt important. This set of criteria was identified through: 1) analysis of secondary material and existing frameworks for digitisation; 2) interviews with Intermediaries and, 3) results of the Intermediaries' survey as described above. Fig. 7 represents these responses:
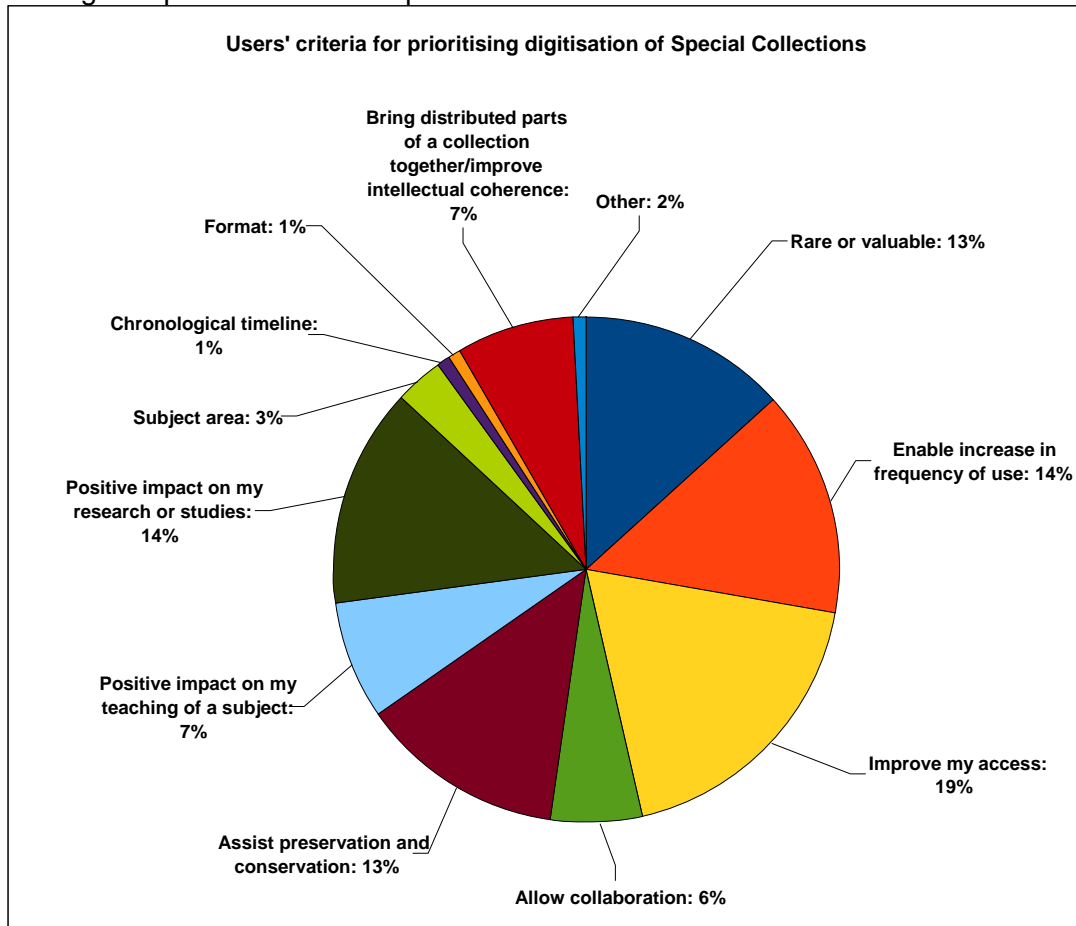

Users' criteria for prioritising digitisation of Special Collections

Figure 7. End users' view on the criteria for digitisation

Criteria eliciting greatest responses are presented first:
- Improve access – 19%
- Positive impact on research or studies AND Enable increase in the frequency of use – both 14%
- Assist in preservation an conservation of a collection AND Because a collection is rare or valuable - 13%
- Positive impact on teaching AND Bring distributed parts of a collection together, improve intellectual coherence – 7%
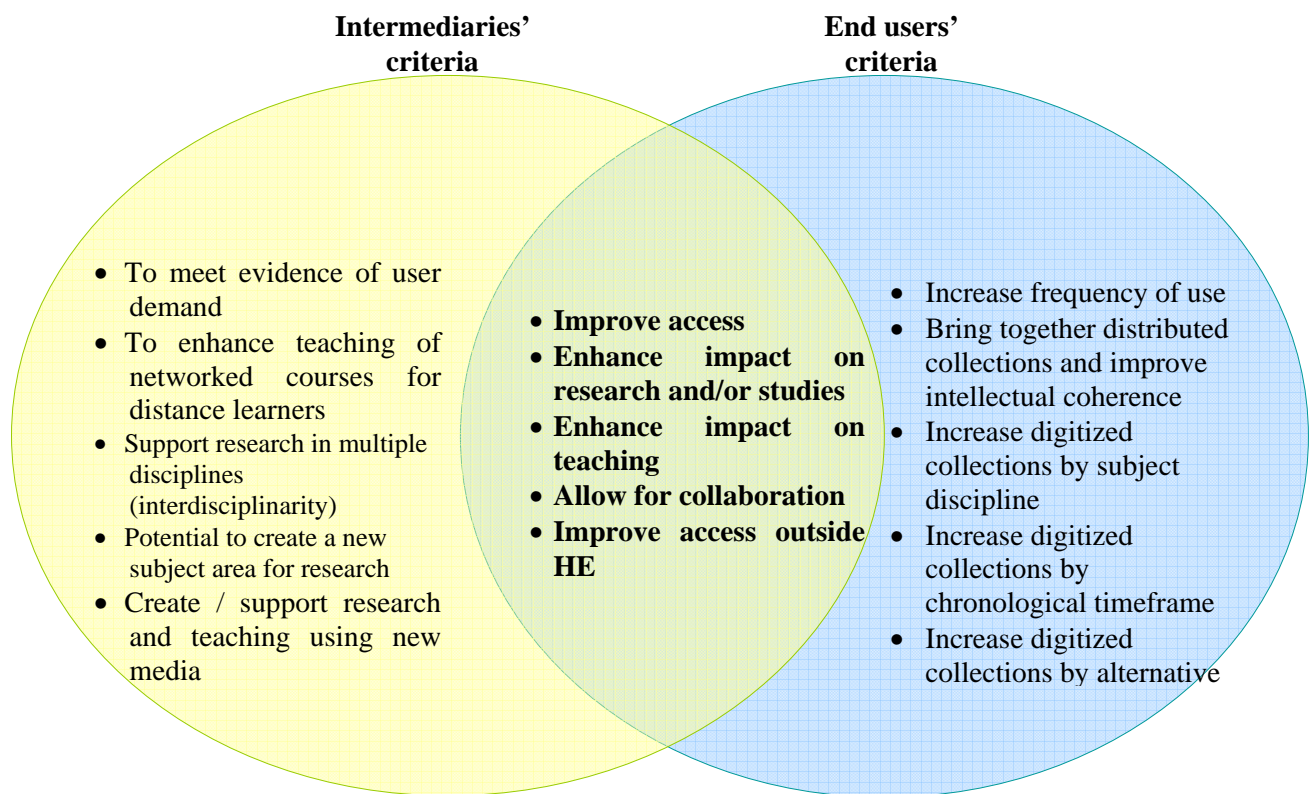- Allow collaboration – 6%

Intermediaries' criteria

- To meet evidence of user demand
- To enhance teaching of networked courses for distance learners
- Support research in multiple disciplines (interdisciplinarity)
- Potential to create a new subject area for research
- Create / support research and teaching using new media

(Overlap)
- **Improve access**
- **Enhance impact on research and/or studies**
- **Enhance impact on teaching**
- **Allow for collaboration**
- **Improve access outside HE**

End users' criteria

- Increase frequency of use
- Bring together distributed collections and improve intellectual coherence
- Increase digitized collections by subject discipline
- Increase digitized collections by chronological timeframe
- Increase digitized collections by alternative

Figure 8. Summary of user-driven criteria

The following list of eleven separate digitization criteria is derived from analysis of the DiSCmap end user survey and focus group and interview data:

- To improve access
- To enhance impact on research and/or studies
- To increase frequency of use
- To enhance impact on teaching
- To bring together distributed collections and improve intellectual coherence
- To allow for collaboration
- To increase digitized collections by subject discipline
- To increase digitized collections by chronological timeframe
- To increase digitized collections by alternative formats
- To improve access outside HE
- To improve navigation and searchability within a collection

Synthesising and analysing the findings from intermediary and user surveys, we developed a formal framework of criteria for the assessment of the "prioritisation status" of a potential collection, taking into account the criteria indicated by the intermediaries and end users (see Fig. 8).

We sought to define provisional framework assessment criteria for analysis of the *responsiveness to need* and *potential impact* that digitisation of a given collection might have, and the extent to which it might *support key research and teaching*.

The framework is not just a mechanical combination of the 10 criteria which emerged from the analysis of the intermediaries' responses to the DiSCmap survey and the 11 criteria nominated by end users – it takes all these criteria but presents them with relationships which can be identified analysing the context of the nominated criteria.

The relationships between these criteria are presented in a concept map (see Fig. 9). Please note that this concept map is based on the data gathered. In different places this concept map can be expanded, but our task was not to create yet another prioritisation framework, but to accommodate the data received in the user surveys.
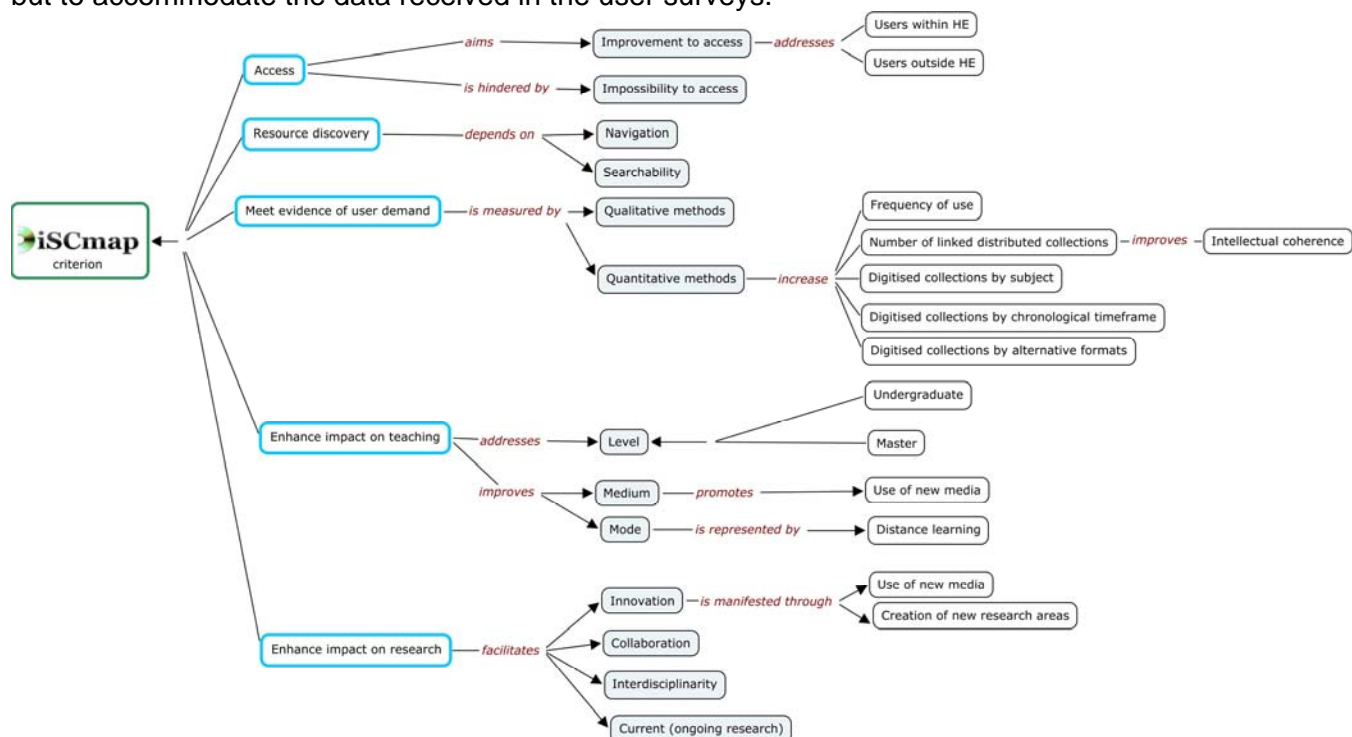

Figure 9. A concept map of DiSCmap user-driven prioritisation framework

3.3. The short lists of collections

The richness of the aspects related to user-driven criteria for prioritising digitisation can be addressed better by a flexible approach to the construction of short lists. There are multiple factors which drive digitisation and instead of providing one "snapshot" in the form of one short list, we decided to illustrate the concept of a short list for digitisation by four examples.

Shortlist 1. Collections nominated by various groups of users. This short list includes collections nominated by different groups of users, in the context of DiSCmap project these were intermediaries through DiSCmap and RLUK surveys and end users. In the context of the project this corresponds to the criteria *Access, Meet evidence of user demand, Enhance impact on teaching* and *Enhance impact on research.*

Shortlist 2. Collections related to policy framework. This shortlist consists of collections under specific subject areas identified by HEFCE[6] in the "Strategically important and vulnerable subjects" (Final report of the 2008 advisory group). This correspond to the criterion of better offering of digitized resources by subject. In this particular case we do not use a specific evidence of user demand, but a policy-driven need.

Shortlist 3. Collections on specific thematic clusters. This shortlist consists of collections which titles identify them as a part of a thematic cluster.

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[6] The Higher Education Funding Council for England (HEFCE)

Shortlist 4. Collections with highest number of reasons for digitisation. This shortlist includes all collections nominated to DiSCmap by intermediary users for which the intermediary users stated that the collections should be digitised because the meet the priority criteria *Collaboration, Preservation, Increase usage, Facilitate access* and *Other*. The diagram does not include Other. It should be noted that this is the opinion of intermediaries and actual quantitative evidence was not provided. The actual shortlist is based only on collections nominated by intermediaries to DiSCmap by intermediaries (for collections nominated by RLUK and end users a consultation with intermediaries would be necessary).

4. Outcomes

In its widest sense the project contributes towards preliminary evidence on user-driven priorities which could help in the process of allocation of funding for digitisation projects. It also can help to define the purpose, value and impact of digitisation not on institutional basis but on UK HE scale. By development of a framework of user-driven prioritisation criteria, DiSCmap contributes towards the longer-term goal of developing a quantifiable and adjustable system of metrics in the digitisation life cycle especially addressing the selection phase.

The amount of collections nominated to the long list reached beyond the expectations of the project team. This list itself is a valuable outcome which should be enriched further in order to provide a broad and trustworthy basis for the future digitisation decisions.

DiSCmap surveyed over 1000 intermediaries and end users; this report presents in a very condensed form only a small proportion of the total evidence on user demand gathered by the project team. Yet in analysing and representing fully the range of end user priorities, DiSCmap has made a considerable advance in identifying the actual digitisation needs of end users. It has done so with the aim of removing the element of guesswork and assumption hitherto inherent in our understanding of user requirements in this area. The combination of intermediary' and end user' studies provides a richness of view points which highlight the many important different aspects related to the user dimension in digitisation.

5. Conclusions

5.1. How the long list can be used in future and what can be improved

– *The long list as a source of evidence on user demand*

The long list can be used as a source to supply evidence in support of different hypotheses related to user-demand. The descriptive statistics provided in Section 3.1. help to understand what kinds of specific detail on collections can be retrieved from the long list.

– *The need to harvest further details on collections whose records are incomplete*

The long list would profit from its content being better harmonised and the quality of data unified. This would require further contact with intermediaries in charge of collections, especially in the case of collections nominated by the end users.

– *The need to extend the institutional coverage*

Currently the long list includes collections nominated from 57% of the post-1992 HEIs, 47% of the pre-1960 HEIs and 35% of those "Post-Robbins".

Another dimension of the long list extension would be to seek more collections nominated from beyond the HE sector. Currently the long list includes collections nominated by The National Archives, The British Library, the National Library of Wales and multiple other institutions.

5.2. Conclusions about end users

- ***The view of end users on Special Collections differs from the view of the intermediaries***

The necessity to embrace a user-driven framework for the digitisation of Special Collections must be qualified with one additional caveat. The project uncovered a key area where there exists a difference in perspective relating to the understanding of Special Collections between the two survey groups. Intermediaries (with due professional care) were, for the most part, highly specific in their provision of descriptive detail on the Special Collections which they nominated as priority cases for digitisation. End users (understandably) often had a tendency to be vaguer in description and instead suggested, in places, discrete "sub-collections" for digitisation or alternatively "super-collections" such as manuscripts of the British Library or the BBC Archives. This means that the granularity of collections is viewed in a different way by both intermediaries and end users.

One significant conclusion to be drawn from this distinction is that, when providing a digital resource to end users, intermediaries should seek to accommodate both these understandings of its relevant context; not only should the digitised resource enable end users to identify the context of a given object in the sense of the collection to which it physically belongs, but also it should provide the possibility of identifying its relationship to relevant "sub-collections" or "super-collections" with the capacity to link to key semantic groupings, such as, for example "19th century newspapers" or "incunables".

- ***The needs across domains are different, this needs further study***

DiSCmap did not have the specific task to discover differences between subject domains, but the distribution of subjects across the nominated collections not surprisingly revealed higher interest in arts and humanities material in digitised form. This seems to sound like an echo of the Loughborough study (see JISC 2008), but one possible approach would be to make further subject-specific studies on the user needs.

5.3. User demands in digitised resources for research and teaching

- ***Intermediaries' and end users' views on the impact of digitised resources in research and teaching differ***

Our study showed that end users expect that digitised materials will be of greater benefit to research. The number of collections nominated by end users for research purposes outnumbered almost 3 times the collections nominated for teaching. Intermediaries, on the other hand, tended to evaluate higher the expected impact on teaching of collections nominated for digitisation. It could be recommended in future digitisation calls to request specific information in what teaching courses or in what specific research the collection nominated for digitisation is expected to be used. The established and clear connection with the future community of users of the digitised collection may help to justify proposals for digitisation.

- ***What happens after a collection is being digitised?***

DiSCmap did not prompt, in its surveys, any specific *uses* of digitised collections. End users, however, did suggest a number of criteria which reveals a growing level of expectancy that digitised resources should help to improve collaboration, further interdisciplinarity, connect distributed collections and aim to increase the amount of available digital materials across chronological timelines/subjects. However, VLEs and VREs were not widely mentioned, indicating that the use made of digitised resources through such online environments for teaching and research must be further expanded. We believe that if future digitisation projects include scenarios for typical uses and training of the identified users for the discovery and everyday work with digital resources, this will help not only to increase the amount of digitised materials, but will also influence their quantity of access and quality of use.

5.4. Ideas for the future

Some possible directions of further development of DiSCmap follow:

- ▪ ***Expanded collections:*** here we include the harmonisation of existing collections, the inclusion of collections from institutions from the HE sector which have not responded to DiSCmap, as well as the further addition of collections beyond the HE sector.

- ▪ ***Improved support to users:*** here we include two aspects, actions which will *improve the information literacy* which covers aspects of resource discovery and use, and actions which will help to transform the current "gate keepers" amongst intermediaries into facilitators in resource provision. The first aspect addresses end users, while the second one addresses intermediaries.

- ▪ ***New services:*** the amount of collections nominated to DiSCmap and the view which the project built on the flexible approach towards prioritisation of collections, can be combined in a *decision making tool* which would select collections from the long list which match specific criteria. This could be a valuable tool for decision making in future digitisation programmes.

- ▪ ***More detailed user studies:*** this would seek to deepen the knowledge about user demands in *specific subject domains*, as well as the differences of needs in digital resources for teaching and research.

One unconventional development of the work started with DiSCmap would be to build a ***meta-finding aid for collections***. Currently, there are different portals, repositories and registries of collections, but there is no unified way to search across these collections. This was mentioned by the Loughborough study (JISC 2005) but four years later it has not changed. If the further expansion of the long list can integrate data from these existing resources, besides the use of the long list as evidence in digitisation prioritisation, it could be developed as a meta-finding aid on information on collections. This is not simple to achieve having in mind the granularity and metadata issues which were identified in the comparison of the DiSCmap long list with SCONE but integrating data from existing portals and registries such as Archive Hub, AIM25, SCONE, Michael UK might be a reasonable way to extend significantly the long list of collections. A scoping study on the data models of these facilities might help to identify a reasonable approach of integrating data from them into the long list.

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[7] Please note that the URLs included in the references were all checked on 27.05.2009 and valid then.