

User and Functional Testing

Final report

Europeana v1.0

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Executive summary

Europeana's priority as it moves towards a fully operational service is to provide access to Europe's heritage in ways that engage and satisfy users.

A principal objective of Europeana.eu is to engage young people, both in the course of their learning experience and for personal enrichment. In the swift current of online innovation, theirs are the needs and expectations that change most rapidly. Consequently, in order to define the user requirements for the fully operational service, Europeana focused on detailed qualitative analyses of user behaviour, paying particular attention to students.

Six focus groups were convened, comprising a total of 77 participants in four European countries. Two of the focus groups took place in an international school in Amsterdam, the Netherlands; in Sofia, Bulgaria they were held in a secondary school and a school of applied arts. There was also one for university students in Fermo, Italy and one for university library and teaching staff with representatives of the general public in Glasgow, Scotland.

Studies were also run in Media Labs. These tests used eye-tracking and close observation of 12 subjects to derive empirical evidence of their response to Europeana's navigation and usability. This is one of the first studies published in the digital library context in which *eye tracking* combined with *analysis of user behaviour* and *feedback* have been used to refine the vision of what users want.

The results of the studies inform the design and functionality of the operational Europeana. In addition, and of value to the marketing and communications initiatives, the studies have helped define the benefits sought by primary target segments, what promotional messages they would respond to, and how these should be delivered to them.

What the studies showed

Europeana was new to almost everyone; their first impression was that the site was attractive; they anticipated it would be well organised, easy to use and interesting. Having completed their set tasks and discussed the site in considerable detail, the participants had many suggestions for improvement and were critical of some aspects. 75% of the adult members of the focus groups, comprising students, teachers, librarians and the general public, said they would use the site again. Among younger students, Google and Wikipedia were heavily used for schoolwork, but significant numbers of them said that Europeana would be of definite help in their studies.

It is more important for Europeana to focus on the issues raised by users and the improvements they suggest than to confirm the status quo. Deliberately, then, this summary does not highlight the areas of satisfaction; rather it provides a checklist of problems to be addressed. The outcomes of the study that are of particular value to Europeana are those related to:

- Content
- Functionality, Usability and Navigation

The ten key **Content** issues are:

- Users expected more digitised books and manuscripts, and wanted to be able to annotate and manipulate them
- Audiovisual content is not as well represented as other material, and users wanted more of it
- The lack of contemporary books, pictures, films and music disappointed users

- School students expected content to be downloadable; they also wanted to be able to add their own content
- Users assumed that all content would be free and there was frustration that some content providers charged for access to material
- Users recommended improvements to the quality of the information about the objects, i.e. the metadata records.
- People wanted more translation assistance in order to understand their results better.
- Users expected better classification of content, e.g. by art galleries, council records, newspapers etc. The top level classifications caused concern – for example, maps listed as either ‘texts’ and ‘images’
- While they liked the Timeline, participants thought it didn't give enough description of the items displayed, and the date cloud sometimes caused confusion.
- Broken links, however infrequent, are always an irritant for users.

The ten primary **Functionality and Usability** issues:

- Reactions were very mixed: many participants found Europeana easy to use; others didn't, and a small number found it very difficult
- Better ranking or prioritising of results was the most frequent demand
- Users wanted to refine their search within a results set
- Participants expected greater precision in search results. They didn't understand how some of the results related to their search and became confused and dissatisfied
- Language was perceived as a significant barrier. Users were willing to use materials either in their native language or in English but were not prepared to try to use another language. This was most marked among the younger students
- More help menus, FAQs and ‘ask the expert’ services were wanted
- People wanted more ways of browsing the content, including map-based visualisations
- Students wanted to customise the interface
- There was a call for more linking between items to show relationships
- People wanted a clearer and easier route back to their original search

The main **Navigation** issues

- The primary importance of the Home Page Search was confirmed; it was the most significant hotspot, but only the first line of the welcome text above it was read
- The top and bottom navigation bars received very little attention.
- On the results pages the images, search and refining of search received most attention indicating it is well balanced, but again the navigation bars fail to grab attention

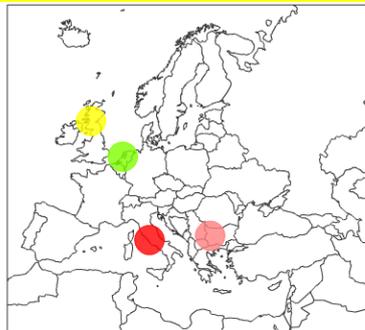
Outcomes

Based on the results of the study, a series of suggestions for the future development of Europeana are made within this report. These range from the design of the interface - to set clear expectations when users first encounter Europeana and appeal more strongly to a younger generation of users – through to improving metadata and providing narrative and contextualisation. The behaviour, expectations and requirements revealed by this research will inform the shape of Europeana and its priorities over the next 12 months. The Europeana Users Workgroup will publish recommendations resulting from their assessment of this study.

How to read this report?

I want to know:

- Which countries were targeted in this study?



- What user groups were addressed?

- *School students*
- *University students*
- *General public with interests in art/culture.*

- What is Europeana?

Go to <http://www.europeana.eu>

I want to:

Read

- | | |
|---|----------------------------------|
| – Quickly check recommendations | <i>1.1. – 1.3 and Section 3.</i> |
| – Understand the methodology of the study | <i>Appendix 1.</i> |
| – Find out more about user expectations | <i>2.1.</i> |
| – Learn what the eye tracking data showed | <i>2.2.2.</i> |
| – Discover how participants searched | <i>2.2.3.</i> |
| – See typical scenarios for use of Europeana | <i>2.2.1.</i> |
| – Check the demographic data on the participants. | <i>Appendix 2.</i> |
| – Study the local reports on the focus groups in | |
| o Bulgaria | <i>Appendix 3.</i> |
| o The Netherlands | <i>Appendix 4.</i> |
| o Italy | <i>Appendix 5.</i> |
| o UK (including media labs) | <i>Appendices 6-7.</i> |

What happened where?

Study method Type of users	Focus groups	Media labs
Young users		
- <i>School students</i>	<i>Sofia (Bulgaria) 2 groups, 22 participants</i>	
	<i>Amsterdam (the Netherlands) 2 groups, 23 participants</i>	
- <i>University students</i>	<i>Fermo (Italy) 1 group, 20 participants</i>	
General public	Glasgow (UK) 1 group, 12 participants	Glasgow (UK) 12 individual sessions

Caveats

- *This study is qualitative. The numbers and percentages in the tables, graphs and figures can not be used as representative data but rather as illustrations of the local findings.*
- *The study targeted two types of participants – young users and general public across four countries (Bulgaria, Italy, the Netherlands and the UK) and involved two methods of study – focus groups and media labs. The number of participants does not allow making statistically significant comparisons between the various countries and types of participants.*
- *The participating school in the Netherlands was an international school and the participants there could not be considered as a typical Dutch but multicultural user group.*
- *The aim of the study was to gather, present and synthesize as many diverse opinions as possible. The report mentions the sources of various suggestions for completeness but these should not be interpreted as general conclusion on the respective user group.*
- *The unit of analysis in the study are opinions of users and not differences by country or by user group.*
- *The school and university groups were recruited as whole classes; the participants in these groups knew each other. The participants in the media labs and the focus group in Glasgow were recruited through announcements put in various public places in Glasgow. They have not met before the study.*

1. Introduction to the study



“If you manage to put most of the European Museums on this space it will be one of the most successful in the world – it will be a DREAM place.”

(Participant in the Glasgow focus group, 11 December 2009)

1.1. Background

The alignment of user needs with the technical and political capabilities of the institutions providing the content for Europeana is identified as a priority within Workpackage 1 of Europeana v1.0 project. Such alignment is even more crucial when the “digital natives’ generation” is being studied because this group not only has current expectations, but also constitutes future users (general as well as professional) of Web content. The current users of Europeana are mostly in their late 30s and early 40s; one of the key questions of this study was to find out what works for the younger generation and what needs to change.

The study was organised in four countries with different levels of involvement in Europeana: Bulgaria, Italy, the Netherlands, and the UK. This facilitates an examination of contrasting differences in the user communities across various members of the EC.

1.2. Aims

The study aimed to investigate user groups across four countries, through a series of focus groups and media labs, and to address user expectations more specifically, as well as the difficulties faced when using the Europeana prototype. Young users were of specific interest within this study.

1.3. Methodology

The nature of user needs should be studied in relation to specific areas of focus, including (1) ease of use and intuitiveness of the prototype; (2) identification of ‘future’ user needs as the young generation grows up; (3) styles of use of the prototype for knowledge discovery amongst young users; (4) expectations and trustworthiness; (5) similarities and differences in the groups from different countries; (6) possible recommendations for prototype development for users. As a matter of priority, the needs of different yet specific user groups are of interest. The “digital natives’ generation” is of key interest because it has current expectations and also typifies the nature of a wide range of future users (general as well as professional) of Web content. It is known that current users of Europeana tend to be in their late 30s and early 40s; one of the key questions of this study is how to make Europeana more attractive and popular amongst younger users. In addition this study assesses the needs of representatives of the general public based on their expectations of Europeana and their level of competence in searching digital libraries.

The Europeana User and Functional Testing was therefore initiated to investigate the needs of the user groups identified as relatively low use consumers of Europeana and its content. A combination of focus groups and media labs targeting young users and members of the general public were scheduled, each with the basic aim of establishing which features of Europeana are well-liked, which features are deemed ineffective or are

not well-used, and to provide recommendations for the future development of Europeana and subsequent user studies.

A protocol was established for the study, ensuring that a uniform methodology was applied throughout. The protocol included three questionnaires (first impressions, deeper impressions, lasting impressions), a series of key discussion points and an assignment requesting that participants put together a PowerPoint presentation in line with a predefined set of slides designed to provide a virtual portrait of their local city¹.

The assignment was designed to incorporate eight different usage scenarios: finding texts on a predefined topic; finding images on a predefined topic; finding audio and/or video materials on a predefined topic; finding materials presenting the same, predefined, object in different times; finding materials on a very specific predefined subject (like a landmark or an event or a person), finding materials on a specific historical event, and a topic of the participants' own choice within the context of the general theme, and finally; identifying the providers of digital objects who contributed the highest number of objects on a particular topic, identifying what was found to be most useful about Europeana and suggesting areas in which material may be lacking, which encouraged consideration of the provenance of objects and reflective practice. This range of scenarios requires users to formulate searches that target a range of metadata fields to retrieve various types of materials. This approach made it possible to assess which usage scenarios are easy to satisfy and the stumbling blocks that users of the Europeana prototype may encounter.

A distinguishing feature of this study is that it combines feedback gathered from users with evidence for their behaviour. Contributions to discussions were supplemented by responses to questionnaires and further consolidated by users' search strategies and their subsequent selection of materials held within Europeana (which were able to be assessed by accessing participants' MyEuropeana results) and by examining the content transferred to their PowerPoint presentations. The protocol was designed so that feedback gathered from the users at various stages of the study effectively reflected their first impressions and expectations (following a brief presentation providing an overview of Europeana and its key features) before the actual assignment; deeper impressions (after the users worked on the assignment) which help to ascertain whether or not the nature of the service and its delivery met the expectations expressed earlier, and lasting impressions, showing the intentions to use Europeana in the future, following completion of the assignment and participation in a subsequent group discussion (or individual discussion, as in the case of the media labs). The series of media labs run in Glasgow provided an additional means of feedback, due to the collection of physiological data. Facilities enabled eye tracking software to be used, pinpointing the gaze of participants throughout the assignment, as well as the duration of their focus on any one area of the screen/interface.

Data collected included completed questionnaires, a recording of discussion sessions, the populated presentation slides, a record of search strategies saved in MyEuropeana by each participant and eye tracking data. This enabled researchers to analyse users' performance in relation to the specific scenarios (based on the presentations made by the users), the most extensively and frequently used (and unused) components of the interface (based on the eye tracking data), and the user searches which show the term(s) entered by the users while gathering data for their tasks.

Initial contact with the focus group and media lab participants showed that Europeana was unfamiliar to the majority, and to the entirety of some, groups. This early finding

¹ One exception was the group in Fermo which prepared a presentation on Rome, due to the low number of materials available about Fermo in Europeana.

confirmed that the user groups being targeted in the study were undoubtedly amongst those to which Europeana requires to direct its communication strategy and marketing effort.

The study followed a uniform methodology for all the focus groups and media labs. This is presented in detail in Appendix 1. All groups followed the same protocol:

1. Introduction to the study by the group moderator.
2. Completion of a pre-questionnaire (providing basic demographic information, indication on familiarity with Europeana, online search experience and cultural attitudes).
3. A concise introduction to Europeana, provided by the group moderator.
4. Discussion 1 (to gather first impressions of Europeana following a brief look at the site and its key features).
5. Completion of questionnaire 2 (to provide written feedback of first impressions).
6. Assignment (compiling a PowerPoint presentation about the local city). The choice of the task – the virtual portrait of the local city – put the participants in similar situation task-wise but the range of resources available on the different cities was not identical. This allowed to observe situation with a small number of resources and big number of resources ranging from c. 500 in the case of Sofia to c. 70 000 in the case of Amsterdam.
7. Discussion 2 (to gather deeper impressions of Europeana following approximately 30 minutes' interaction with the resource).
8. Completion of questionnaire 3 (to provide written feedback on deeper impressions of Europeana).
9. Conclusion of study, by moderators.

In the case of media labs, the discussions took the form of a conversation between the moderator and the individual participants. In the case of the focus groups, these were common discussions with all group members, facilitated by the moderator.

1.4. General information on the focus group and media lab participants

In this section we provide summarised demographic information on the participants, their familiarity with Europeana, experience in online search and attitudes towards cultural heritage.

Detailed reports on the focus groups/media labs are presented in Appendices 3-7, and the summarised overall demographic information is presented in Appendix 2.

1.4.1. Demographic information

The difference in the composition of this study, compared to previous studies, is that it had almost identical numbers of participants in each of the four participating countries.

Geographic coverage

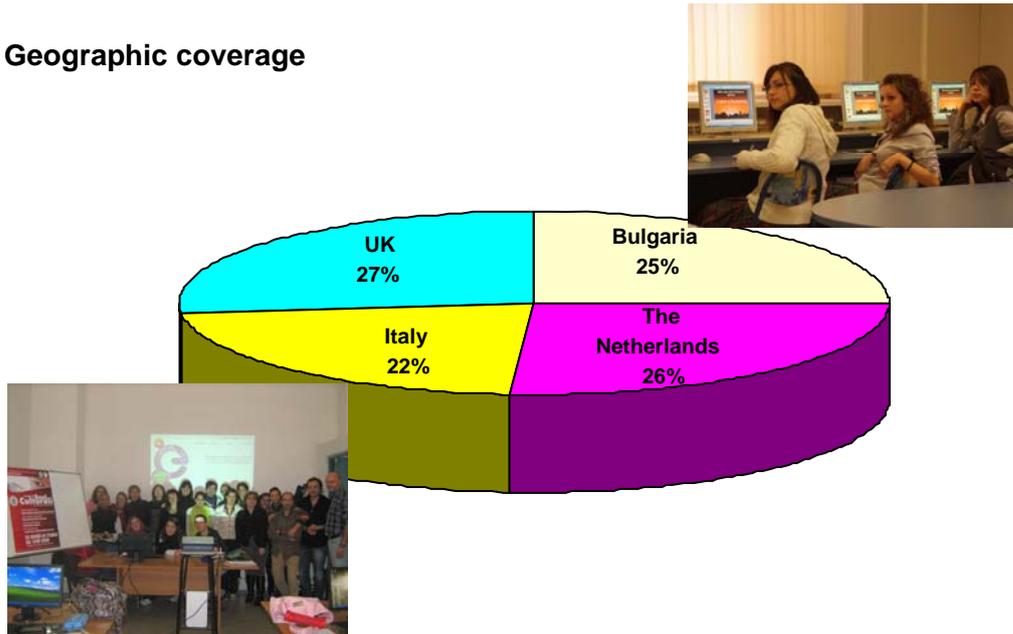


Figure 1. Geographic distribution of participants

The participating countries were selected to include countries with different levels of response to the web survey conducted earlier in 2009.

Country of origin

Although the participants were residents of four countries, their countries of origin were quite diverse mainly due to the involvement in the study of students from the International school in Amsterdam (see Table 1), including some participants from the Americas, Africa and Asia.

Table 1. Distribution of participants by country of origin

Country	N	%
Bulgaria	23	25.8
UK	23	25.8
Italy	20	22.5
The Netherlands	6	6.7
USA	6	6.7
Israel	2	2.2
Belgium	1	1.1
Denmark	1	1.1
France	1	1.1
Ireland	1	1.1
Nigeria	1	1.1
Pakistan	1	1.1
Romania	1	1.1
Switzerland	1	1.1
Venezuela	1	1.1
Total	89	100.0

Age of participants

This study was designed with an emphasis on young users and the composition of participants per age group compared to the distribution of participants in the Europeana online user study (see Fig. 2) clearly shows a higher number of young participants across this study.

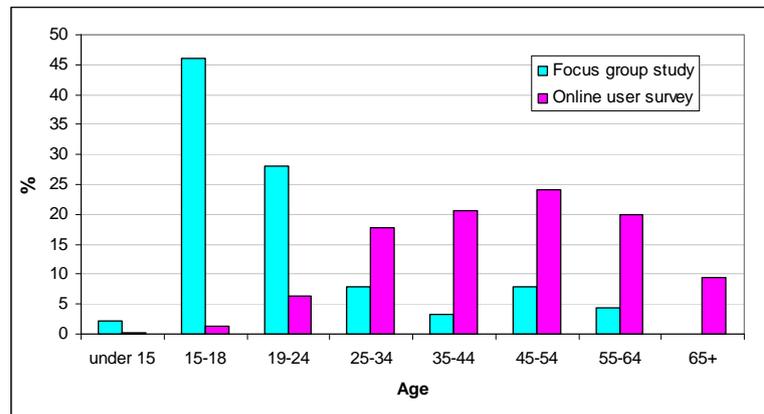


Figure 2. Distribution of participants by age range in comparison with Europeana online user study

Profession

More than ¾ of the participants in this study were students (see Fig. 3).

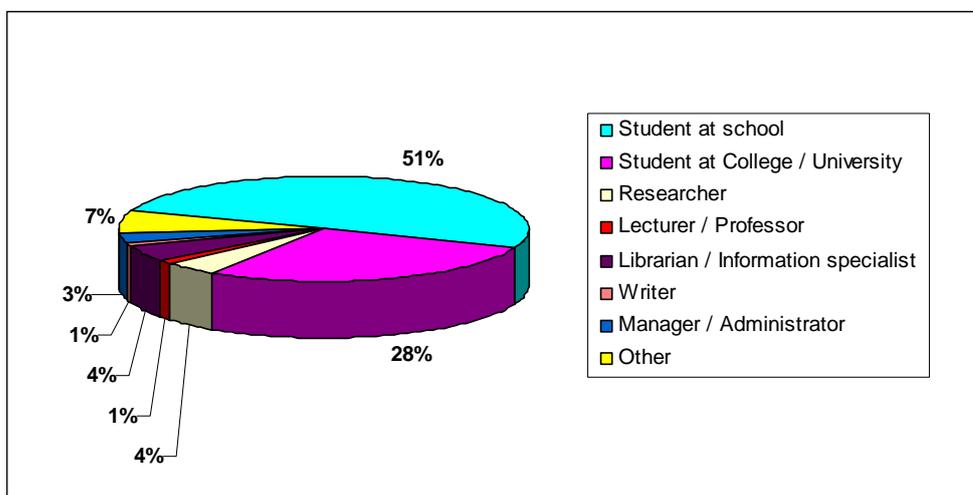


Figure 3. Distribution of participants by profession

1.4.2. Familiarity with Europeana

Most participants were not familiar with Europeana and had not seen the Europeana logo before (see Figure 4).

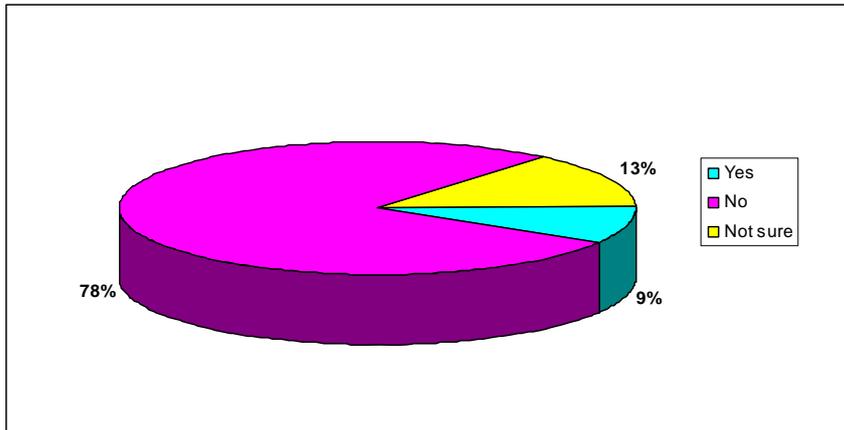


Figure 4. Familiarity of participants with Europeana logo

More details on the familiarity with Europeana are presented in Appendix 2, Tables 8-13 and Figs. 8-10; in general the majority of participants had neither seen it nor used it before.

1.4.3. Experience in online search

Levels of experience in online searching were checked (self-assessed) at the beginning of the focus groups, providing a basis for comparison between this self-estimation and the evidence taken directly from user actions.

Most participants reported very frequent use of online search (see Figure 5).

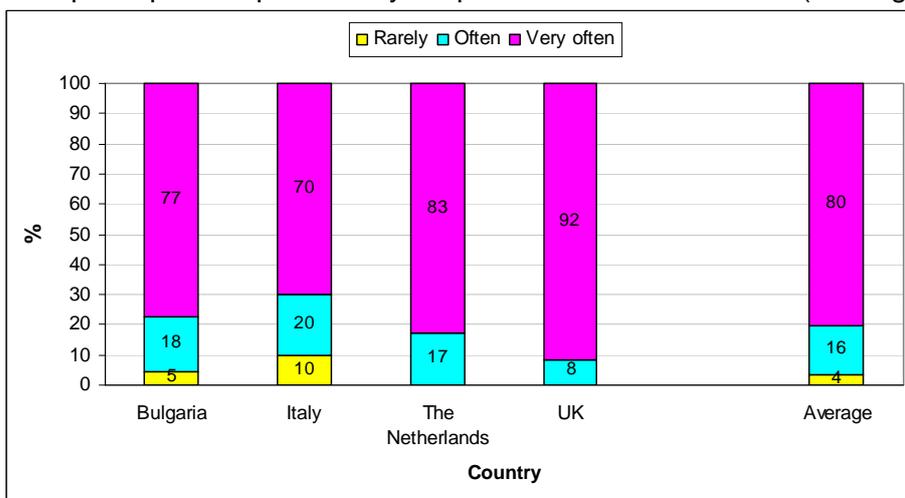


Figure 5. Frequency of online searching by participants

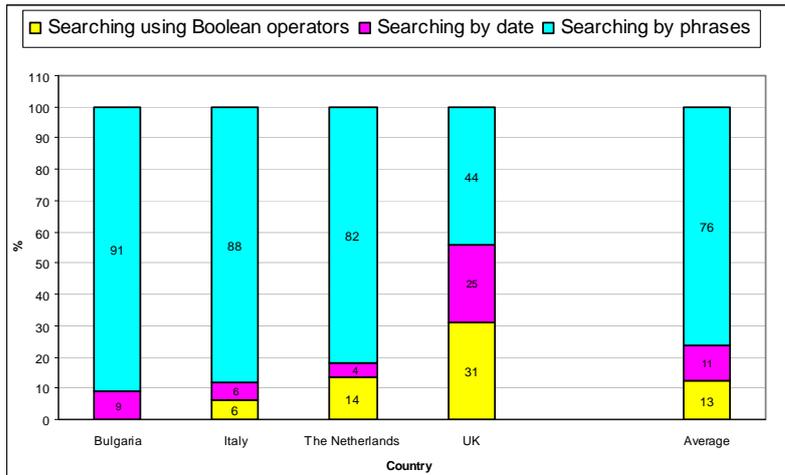


Figure 6. Level of user confidence with advanced search features (eg. Boolean operators)

Search by phrase was used most frequently within the groups of young users (see Figure 6), while search by date and using Boolean operators were more popular amongst the general public users from the UK.

The general disposition of young people, even when they have to search for a specific type of resource, is to use a search engine (see Figure 7).

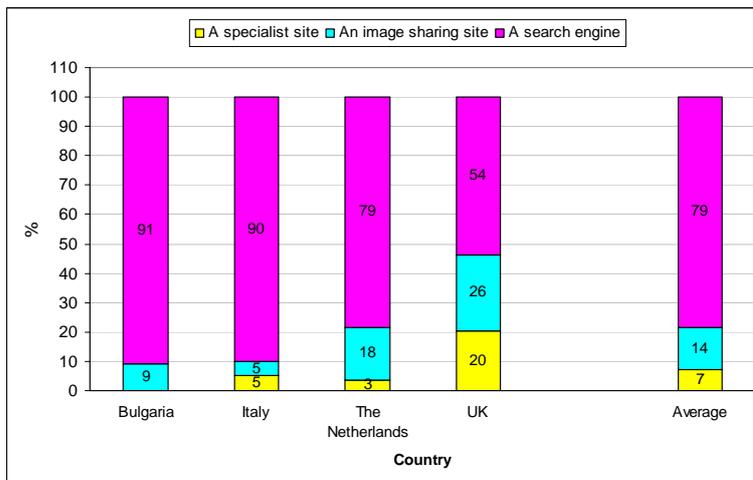


Figure 7. Online sites preferred by participants for image searching

It is also helpful to see what types of objects are being searched for most frequently (see Figure 8).

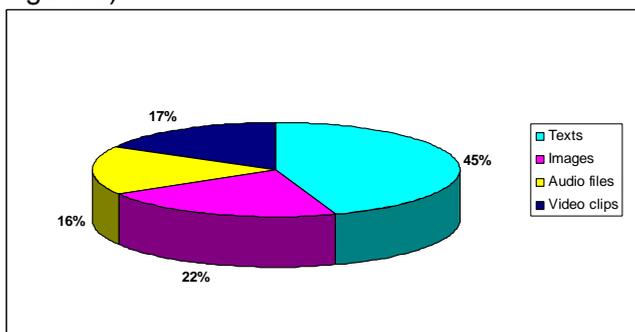


Figure 8. Objects/file-types searched for on a weekly basis by participants

1.4.4. Cultural attitudes

The participants in the study were also asked a series of questions which aimed to provide an understanding of, in very general terms, the level of participants' interest in cultural heritage and values.

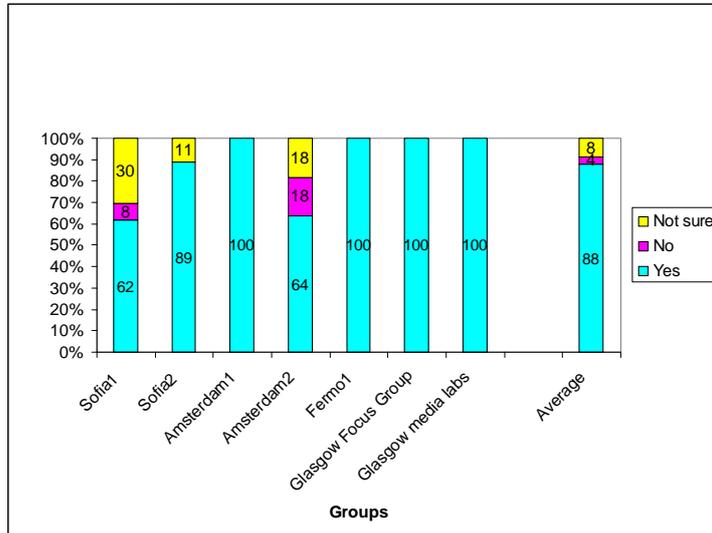


Figure 9. Percentage of participants interested in the links between different cultures
 The reason for including these questions was to check the extent to which “cultural” arguments can be used as an attraction factor for younger user groups. As a general observation, younger people (especially those who are not enrolled in art/culture schools) appear less interested in the links between different cultures (see Fig. 9).

At the same time, younger people seem more confident than general public participants in stating that they have studied a foreign culture in depth (see Fig. 10).

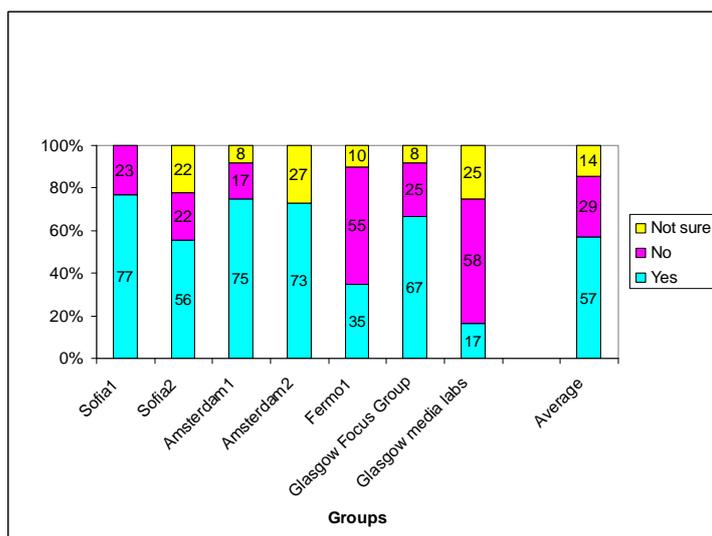


Figure 10. Percentage of participants who have studied a foreign culture in depth (by country)

There was a clear difference in the two groups of participants: younger people (possibly still seeking their identity) have a stronger feeling that cultural identity is being dissolved in the modern world (see Fig. 11).

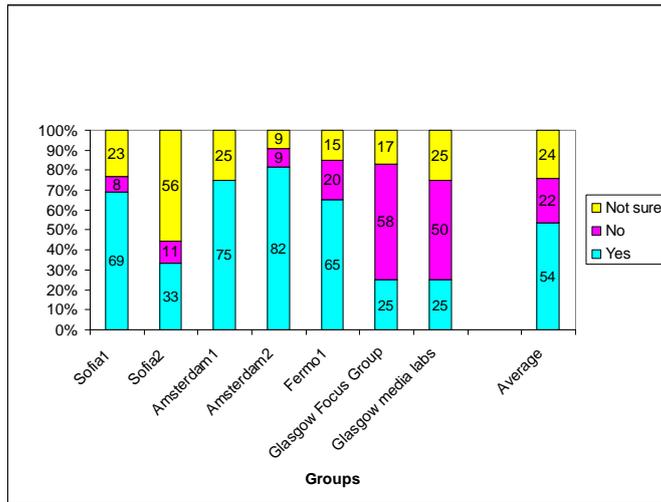


Figure 11. Percentage of participants who feel cultural identity is being dissolved in the modern world

Generally the participants in the study were not actively involved in cultural projects prior to this study (see Figure 24 from Appendix 2).

1.4.4. Summarised characteristics of users in the study

This study addressed young users and general public users with cultural interests. Table 2 presents a summary of the characteristics of both user groups.

Table 2. Characteristics of young users and general public synthesized from the study

Feature	Young users	General public with cultural interest
Age	15-18 for school students. 19-24 for the majority of University students.	Range: 22 – 54.
Occupation	Students at secondary school or University. <i>Note: The Functional Specification for Europeana Rhine Release² mentions the profile of a school child but we would not consider school children of different ages as belonging to the same profile because the information needs and skills in different school levels are considerably different.</i>	Wide range of professional occupations (managers, waitresses, museum assistants, self employed, unemployed); the participants were selected on the basis of their interest to art/culture in general.
Familiarity with Europeana	Most of them still not familiar with Europeana.	Most of them still not familiar with Europeana.
Online search experience	Confident in the use of online search tools.	Mostly confident users of online search but with a range of information literacy skills.
Advanced search confidence	Strong preference to search <i>by phrase</i> was shown. However, the <i>evidence</i> on the use of searches shows that advanced search was <i>not used at all</i> in this group of participants.	Preferred to search <i>by phrase</i> but also displayed confidence in searching by date and in the use of Boolean operators. The evidence confirms that this group used advanced search options.
Types of digital objects of interest	Differences emerged between participants from various countries. In Italy texts were the most popular objects searched for; in Bulgaria texts, images, audio and video were almost equally popular with image searches proving slightly more popular. In The Netherlands the most popular searches were for texts, video and images with surprisingly lower audio popularity.	Members of the general public displayed a clear preference for searching for textual materials. The expectations of this group of users for direct access to a range of textual resources was not met.
Preferred search environment	Strong preference for general search engines. Specialised digital libraries need strong advocacy.	Showed a preference for general search engines but also demonstrated an informed use of specialised search engines and digital libraries.
Cultural attitudes	Again, in this area the differences between the groups from various countries make the young users non-homogeneous. Although the participants from Italy were from a cultural heritage studies programme, a high number reported a lack of familiarity with foreign cultures. Young users tend to feel that the modern cultures are dissolving – this might be explained by their youthful search for an identity.	Communicated a general interest in foreign cultures. The older user group did not express strong feelings regarding the dissipation of modern cultures.

² Bloomberg R., Dekkers M., Gradmann S., Lindquist M., Lupovici C., Meghini C., Verleyen J. Functional Specification for Europeana Rhine Release, D3.1 of Europeana v1.0 project (public deliverable, September 2009).

2. Findings



"It doesn't always give me the results that I want."

(Participant in the Amsterdam focus group, 19 November 2009)

"There are some useful images /clips but if you know you can't get full access then you'll just search elsewhere."

(Participant in the Glasgow focus group, 11 December 2009)

Data collected included completed questionnaires, a recording of discussion sessions, the populated presentation slides, a record of search strategies saved in MyEuropeana by each participant and eye tracking data. Section 2.1 presents user impressions and section 2.2 – the quantitative data on user performance.

2.1. User impressions

2.1.1. First impressions (expectations)

To gather the first impressions of participants on Europeana, a questionnaire was used which offered dichotomic pairs and bubbles to be filled in. The dichotomic pairs provide a quick indication of the degree to which the participants liked/disliked Europeana, while filling in the bubbles elicited fuller, freely-written comments on how participants perceived the website.

Fig. 12 summarises the evaluation of the dichotomic pairs which included characteristics such as *attractive*, *fun*, *well organised*, *exciting*, *easy to use*, *interesting* and *unique* and their opposites, positioned on a scale from 1 to 10, which aimed to establish how participants would rate such characteristics.

Generally, the feedback of the participants at this stage was rather positive and since Europeana was new to almost everyone it could be said that the website creates the expectation of being mostly *attractive*, *well organised*, *easy to use* and *interesting*.

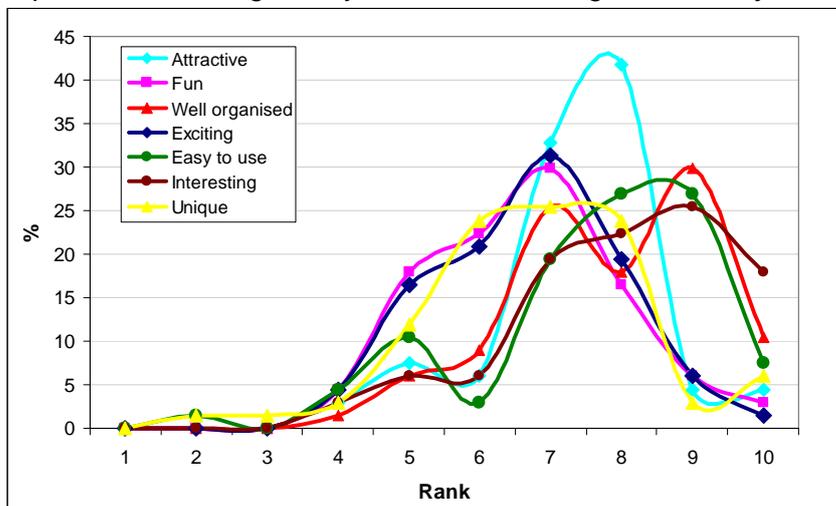


Figure 12. First feedback on Europeana using dichotomic pairs (summarised)

In Bulgaria this task was completed by selecting the most relevant description of Europeana. The most popular choice of both groups in the dichotomic word choice assignment was “easy to use” (19 of 22 participants), and ¼ of the participants also chose the terms “unique”, “attractive”, and “exciting”. Each of the following descriptions was chosen once: “similar to other sites”, “fun”, “badly organised”.

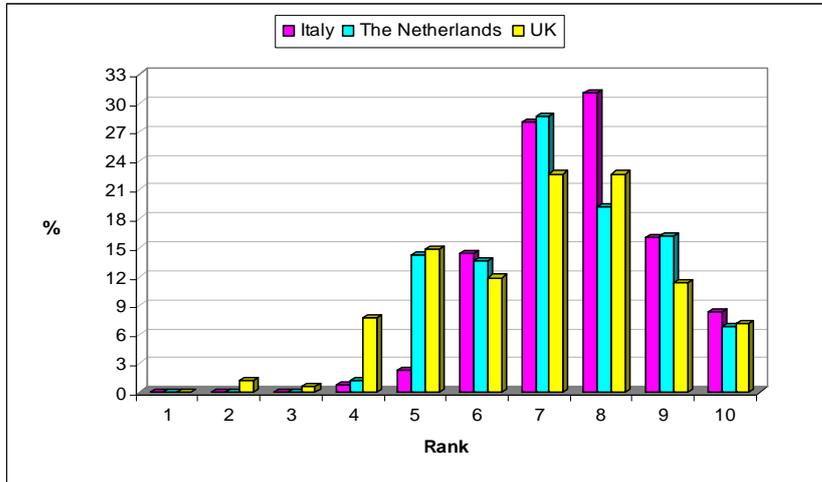


Figure 13. First feedback on Europeana using dichotomic pairs: summarised responses per country

Fig. 13 summarises the overall estimates given by participants for all dichotomic pairs by country. This figure shows some differences in the perception of Europeana: generally the UK participants were more critical in their initial reaction, while Italian participants seemed to be more excited about Europeana.

Feedback gathered from participants filling in the “Europeana is...” bubbles could be grouped into four categories (see Fig. 14 and Table 3). The most popular type of response mentioned subject-specific domains with Culture and Art being most popular; a second group of responses defined the aim of the website – e.g. accessing/providing/finding. The aims mentioned could be mapped to the vision of Europeana (Think culture). Another group of responses mentioned the type of content Europeana offers; and finally there is a set of descriptive statements about Europeana. It should be noted that only three statements were about reliable/good resources – this is something which Europeana might want to address stronger in its communication strategy.

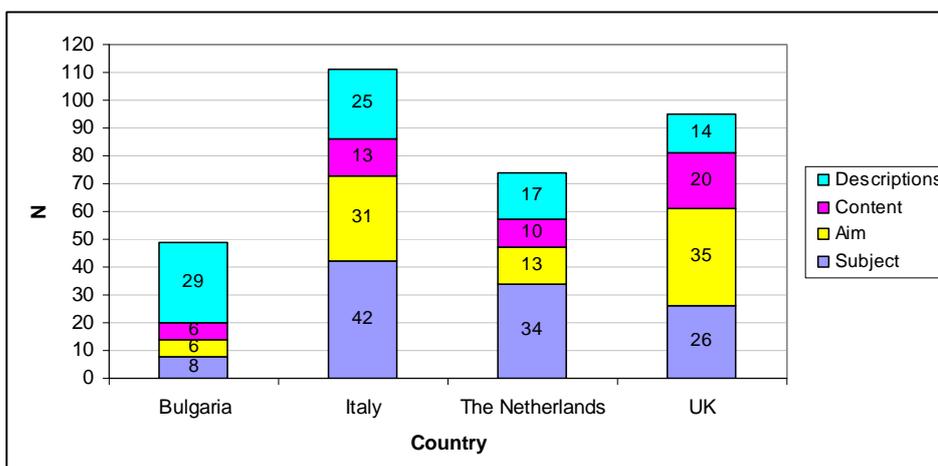


Figure 14. Classification of the short descriptions of Europeana



Focal point. Consider strengthening the messages which convey trustworthiness and reliability of resources for the novice users of Europeana.

Table 3. Impressions of Europeana from the bubbles

Area	Key words/phrases	Bulgaria	Italy	The Netherlands	UK	
Subjects	Anthropology / Ethnic			3	1	
	Art	1	11	1	3	
	Culture	7	19	13	17	
	Europe			4	3	
	Development			1		
	Geography / Regulations / Languages			3	2	
	History			5	7	2
	Social life / Studies / Cinema / News / Actors			4	3	
Aims	Accessing / Providing / Finding	2	19	3	8	
	Cultural artefacts/files					
	Library resources					
	Research materials					
	Visual resources					
	Information/knowledge					
	Search / Research / Discovery / Browse			12	8	7
	Sharing			2	4	
	Linking				2	
	Create online resources/central repository				2	
	Learning				2	
	Accepting				1	
	Centralising				2	
	Coordinating				1	
	Increasing people's knowledge				1	
	Making information available				1	
	Re-positioning heritage material				1	
	Sparking interest in shared heritage				1	
	Facilitating easy access				1	
	To get acquainted / familiar with cultures	3				
Entertainment and to be of help about art	1					
Understanding				1		
Content	Images, pictures, text, film, thumbnails of artefacts, visual resources, video, sound, cinema			2	2	5
	Online / Digitised resources					3
	Archives					2
	Libraries					2
	Museums					2
	Galleries / Art Works / Traditions	1	3			2
	Cultural / historical (re)sources	1	5	1		2

	National collections				1
	Research materials				1
	Information	2		3	
	Facts	1		1	
	Reliable / good resources	1		2	
	Not recent affairs or modern topics			1	
	Famous persons		1		
	A huge quantity of objects		1		
	European Union regulations		1		
	Easy to use	4	1	2	2
	Comprehensive search archive				1
	Random images and popular research links encourage to browse				1
	Interesting and fun	8	1	2	2
	Global				1
	Need to go source sites for 2nd level information				1
	No "refine search tool"				1
	Organising/saving files				1
	Search choices need to be persistent				1
	Similar in look and usability to several academic/library sites				1
	How do I actually get the content?				1
	Try to fit everything on page so no scrolling down needed				1
	Database			1	
	Sources are more reliable than Google			1	
	Search engine / An alternative to other search engines / international/specific/efficient	2	8	1	
	Unique looking site			1	
	Direct answers			1	
	Being clear and culture friendly	2		1	
	An easy and structural search engine			1	
	Smooth and quick interface			1	
	Needs gain more popularity			1	
	Helpful, useful, fast, efficient	6	3	3	
	More about images rather than information			1	
	Rich about cultural, useful and all sorts of information	3			
	An attractive / interesting / unique for getting familiar with culture	2			
	Overloaded	1			
	Well designed	1			
	Catalogue of cultural heritage /art		11		
	Good to search by the timeline		1		

Descriptive statements

2.1.2. Deeper impressions (delivery vs expectations)

Deeper impressions were gathered after the participants performed the task of building a virtual portrait of their city. After their brief introduction to Europeana, from which participants drew their first impressions, they undertook this task which put them in a situation where they had to perform a number of different searches and select materials for inclusion in a presentation. This provided the users with first-hand experience of the use of Europeana.

It should be noted at this point that user impressions are influenced by two factors:

- Expectations created by Europeana (the impression of what it is about and how easy it is to use);
- Expectations that the users have themselves due to them being users of other online resources (such impressions are often reflected as comparisons with other search engines or digital libraries).

While Europeana can successfully create accurate expectations of the service it provides, it is more difficult to influence the second type of expectations where users will always tend to expect features and facilities they like elsewhere.

Expectations of end users of Europeana were high and these led to a raft of recommendations for improvements emerging from the focus groups. In Glasgow, for example, participants had high expectations that Europeana would be an efficient and easy resource for searching, with 9 of the 12 participants making comments of this nature. Such expectations were matched in those groups with a younger demographic of end users, such as in the Amsterdam focus group, where 8 of the 12 participants also held this view regarding its expected level of access and ease of use.

Such high expectations led participants to articulate a number of suggested improvements to the site within a range of identifiable categories from the general to the more specific, including recommendations for query support, the customisation of the user interface, and the ability to add their own content and download resources. A range of 5 top level criteria emerged from analysis of the content collected from feedback in discussion and questionnaire response. The 5 broad categories within which recommendations were made are:

- Access
- Usability
- Content strategy
- Collection development
- Language

Table 4 illustrates each of these criteria more deeply, by subdividing them into 22 more granular criteria. The expanded range of 22 criteria reflects the detail of more specific recommendations. For example the first criteria to emerge was that of Access under which a number of comments related to difficulties experienced by participants in either accessing resources held within subscription based services, the size and quality of the resources that could be accessed or where problems of accessing the site itself were gathered. For example, 3 issues relating to the Access criteria are:

- Resolve access (audio/video files) and subscription issues
- Improve quality of images / audio accessed; facilitate saving
- Improve MyEuropeana registration procedure / email / services

The number of times a recommendation was made was recorded in order to obtain a quantifiable value for each of these criteria. The same method was applied to each of the issues of Usability, Branding, Content strategy, Collection development and

Language to reflect the experience of participants and their subsequent recommendations which in places contrasted strongly with their initial expectations.

The following discussion offers a representative sample of the comments made by end users in support of each the criteria listed.

In relation to **Access** a number of UK participants recommended that Europeana could be improved by *“Allowing access to [the] other/sources that require subscription (this is very important).”* Access was also at the forefront of the discussion about user choice and decision making: *“I think Europeana can be improved by... allowing full access to pictures, sound files etc. There are some useful images /clips but if you know you can’t get full access then you’ll just search elsewhere.”*

Users also commented that existing services provide greater access to resources: *“Search engines such as Google/Scholar [are] more productive in terms of returning actual documents – requiring no subscriptions.”*

Some participants were disappointed as their “main interest are audio files” and the prohibition on full access would lead them to use a resource other than Europeana in the future. Therefore the recommendation that Europeana must enable users to find *“a way to access materials without the requirement for subscription”* and to *“deal with authentication issues related to subscription services more clearly”* was a view widely shared by trial users as a prerequisite for further use.

In addition, in Bulgaria, there were complaints that “links to the original object were broken” and that the maintenance of links was a point of frustration to users seeking to follow narratives to access related content.

General public users with cultural heritage interests in the UK and students from art school in Bulgaria expressed concern about image quality and the use of thumbnails, indicating that these were insufficient in themselves for the purposes of teaching and research: *“improving image quality, especially of material which could be used in teaching or to allow photographs of posters etc to be interrogated”*.

Some students in Bulgaria and The Netherlands were put off from further use due to experiencing log in difficulties: *“I think I will not use Europeana because... ”There are problems e.g. with the registration.”*

In relation to issues of the Usability of the resource, participants among the school children in The Netherlands experienced a number of difficulties in using the site:

- *I will not use Europeana because...the navigation through the site is very frustrating*
- *I found it rather hard to navigate*

Some participants described it as “not the most user friendly” and the “most difficult engine I have ever used”.

Suggestions were forthcoming as to how to improve the usability of the interface from all groups. One school child in The Netherlands suggested that *“going back to your original search needs to be more obvious”* and participants in the UK recommended improvements to how both search terms and search results are displayed on screen: *“should have persistence in search limiters (e.g. date), not start from scratch each time a new search is entered.”*

There was a consensus among these first time users that “more HELP menus” and FAQs would be useful. This could be resolved providing customisable interfaces for users visiting Europeana for the first time and for regular users; as well as versions of the interface for users with a very specific profile (e.g. literary scholars, teachers in history, etc.). One participant from Glasgow suggested that “*splitting up the two audiences it is targeting –rather than presenting one interface for researchers and public users*”. Another suggestion along this line came from a participant of the media labs, who proposed “*making it easier to use for people with few computer skills*”.

This view was shared by a number of participants across all groups who requested greater assistance with both query creation and navigation, e.g. “*I will not use Europeana because...the search engine results are not what I look for*” or “*It doesn’t always give me the results that I want*”.

Whilst participants in other groups made more general comments, users in Glasgow made some specific recommendations relating to the presentation of search results and their potential enhancement:

- *I think Europeana can be improved by...Prioritising search results. Allowing saved searches to be refined*
- *displaying search string [that’s] in [the] search box when results [are] returned*
- *I think Europeana can improved by...enhancing the research tools and including more research keywords*

Some comments were made regarding improvement to the timeline and search filters:

- *Europeana can be improved by...having more description under the picture in the timeline.*
- *Improving the timeline layout with your filters more prominent, also [by] add [ing] advanced search and filters to the timeline.*

The provision of links to related content alongside search results was again raised:

- *I would like Europeana to include more...links between images and relevant texts* (participant from Glasgow).
- *stacking of similar search result* (participant from Glasgow).
- *It is better to have more narratives* (participant from Sofia).
- *Maybe show related sites or sources with linked articles* (participant from Amsterdam).

One participant in The Netherlands made a recommendation for providing reference support, an **Ask a Librarian** style service to be made available to end users: “*I think Europeana can be improved by... [providing] a box for users to ask questions into the community*”, whilst another from the same group suggested replacing the home page simple search box with an interactive interface modelled on a map of Europe “*my ideas for it [is] to put a map for Europe and to be able to click on every country and then information of the country would pop out*”.

General comment was also drawn in relation to the overall presentation of search results, the size and style of the logo and the range and type of information found on the site. Some argued for the site to be simpler in general: “*Europeana can be improved by making everything more clear. It was really hard to find good information*” and “*Europeana can be improved by having the different results classified in a more clear way*”. Another participant argued for there to be more detail available on the provision of information on content providers: “*Partners just produces a long list. Would be beneficial to group these by type e.g. art galleries, council records, newspapers/ magazines etc.*”

Enhanced metadata was deemed to be necessary to improve the search experience and to enrich the content retrieved from Europeana. Comment ranged from the frustration of user expectation of search results:

- *More specific, clear and precise information about the specific objects;*
- *The results need to correlate more accurately to the search terms;*
- *The search terms don't yield applicable results.*

There were also specific comments on the quality of records and recommendations for specific fields (*"A very limited metadata record was returned, not enough room to display a full description and other potentially useful fields"*; *"include more in-depth categorising e.g. removing maps from the "text" field"*; *"include subject metadata fields"*).

In addition a strong recommendation was to supply access to more text based materials.

General public users who had interests in art/culture requested access to manuscripts, articles, files in PDF and digitised books that could be used for research and teaching: *"I would like Europeana to include more... texts! PDF articles, scans of books, newspapers etc."*, *"there is little in the way of text-based resources, I would have expected access to manuscripts"*, whilst more general users made requests for newspapers, broadcast and print media, Government publications and literature collections. *"Newspaper and magazine archives are completely absent"*, *"textual content – i.e. Guide me towards literature collections"*.

Such views on including more texts were shared by the school children in both Bulgaria and The Netherlands. Recommendations were also made for increased audio and visual content on the site, particularly from the younger user groups, in Sofia and Amsterdam:

- *I would like Europeana to include...Information, images and video about the modern world;*
- *I think Europeana can be improved by...More contemporary photographs;*
- *I would like Europeana to include more...Articles, art, videos.*

School children also made recommendations that they be able to add their own content:

- *I think Europeana can be improved by...adding my resources;*
- *I would add my own works.*

It was also this younger user group who had the highest expectation of being able to download content from the site

- *It was not easy to copy an object and use it (for example I used the PrintScreen option to capture an image I wanted to use);*
- *I'd probably use it for humanities assignments but I can't download anything really annoying;*
- *can't download anything.*

Recommendations on content strategy are, of course, closely related to the issue of collection development. Participants across all groups were disappointed not to find more contemporary materials and collections on the site.

The recommendation for more contemporary materials was also made by younger users, but was a view shared by participants across all 4 countries:

- *I think Europeana can be improved by...More contemporary information;*
- *When foreigners see images of Sofia they should have an idea how it looks now and not 50 years ago;*
- *There are not enough recent resources and items of information - was difficult to find anything younger than 50 years old;*
- *there seems to be too little archival material relating to contemporary issues;*
- *I would like Europeana to include more...objects on present times.*

Recommendations were also made for Europeana to supply more varied collections in general:

- *I think Europeana can be improved by...A wider range of source types;*
- *I would like Europeana to include more...varied materials;*
- *In my personal opinion, Europeana...could turn out to be a useful resource if [more] content is added from participating countries.*

More collections of local and national significance to be made available by contributing countries:

- *I would like Europeana to include...More information about Bulgaria and its history;*
- *I think Europeana can be improved by...having /posting more sources related to the search topic [the search topic here being Amsterdam];*
- *I would like Europeana to include more... indexes by subject to better enable retrieval of documents relating to specific areas i.e. local correspondence on issues.*

A general comment for an increased amount of collections to be made available was also received "*I think Europeana can be improved by "...[adding] more collections"*."

All groups made recommendations in relation to either the language of the interface or the language of the objects. Arguing for

- *Increased amount of materials translated into English;*
- *Increased content to be available in native language of end users;*
- *Increased information available to end users in different languages;*
- *More translations of objects.*

Participants in both Bulgaria and Amsterdam made a range of recommendations for offering translations of objects as they had expected to find more materials available both in their national languages and in English. A commonly expressed view was that "*There were many text results but there need to be more in English*", with one participant in Bulgaria remarking that Europeana "*could perform better than Google but needs to translate the results into a commonly used language, e.g. English.*"

A request for more material to be made available to end users in their own national language was most strongly made in Bulgaria. This result, however, seems proportionate to the relative amount of collections and objects supplied to Europeana by participating EU member states. Other users, including the school students in Bulgaria, suggested an increase in the available languages for translation. "*I think the most important aspect is to translate texts into a variety of languages.*"

One participant of Romanian origin in the Glasgow focus group queried the interface in Romanian saying "*This is not the version of Romanian which I speak*".

In terms of the language-related criteria, participants in Italy, The Netherlands and the UK recommended the inclusion of "*a translator for objects in different languages*" requesting that the resources themselves (and the metadata associated with them) should be translatable into different languages for the benefit of end users and not just the interface, as is the case at present.

Table 4. Recommendations on Europeana synthesized from the feedback provided after the task completion

N	Top level Criteria	Problem	Possible approach to resolve the issue	Sofia	Amsterdam	Glasgow	Fermo	Totals
1	Access - 1	Access & Subscription issues (inc. maintenance of links)	Resolve access (audio/video files) and subscription issues	1	1	17	0	19
2	Access - 2	Quality of accessed audio/visual materials	Improve quality of images / audio accessed; facilitate saving	1	0	11	0	12
3	Access - 3	MyEuropeana/ Registration/ services	Improve MyEuropeana registration procedure/email/services	2	1	3	0	6
4	Usability - 1	Customisable Interface & Navigation	Improve navigation / Provide a customisable interface for different users	0	17	26	0	43
5	Usability - 2	Search Filters & Query support	Provide support for query creation/ refinement (esp. date filters, timeline, popular searches, keywords)	0	13	23	19	55
6	Usability - 3	Reference Support	An "Ask Europeana" service - Query box for users to ask questions directly to the Europeana community[ies]	0	1	0	0	1
7	Usability - 4	Hyperlinks	Provide links to related content	1	1	2	0	4
8	Usability - 5	Innovative visual interface	Map of Europe with countries linked to top level data	0	1	0	0	1
9	Branding	Logo & Information quality	Improve information quality & presentation; clearer logo	13	17	2	14	46
10	Content strategy – 1	Relevance	Enhance metadata	2	7	11	0	20
11	Content strategy – 2	Textual content	Increase its access to textual resources	6	8	26	0	40
12	Content strategy – 3	Visual Content	Provide more audio/visual content	11	8	0	11	30
13	Content strategy – 4	User generated Content	Accommodate user generated content	2	1	0	0	3
14	Content strategy – 5	Downloadable / exportable resources	Ability to download / copy/ export content	1	2	1	0	4
15	Collection development – 1	Contemporary materials	Add more contemporary materials / archives/ collections	8	7	9	7	31
16	Collection development – 2	Variety of collections	Add more / more varied collections	4	2	5	0	11
17	Collection development – 3	Cultural relevance of collections	Add more local/national collections/ resources	9	4	2	0	15
18	Collection development – 4	Overall quantity of resources/ collections	More collections/ content generally	3	8	2	11	24
19	Language – 1	English Language	Increase amount of materials translated into English	5	6	0	0	11
20	Language – 2	National Languages	Increase content available in native language of end users	10	0	1	0	11
21	Language – 3	Multilingual interface	Increase information available to end users in different languages	2	5	0	0	7
22	Language – 4	Translations of objects	More translations of objects	0	3	1	2	6

2.1.3. Lasting impressions (intention to use Europeana)

The lasting impressions of participants were checked with a series of questions asking whether they intended to use Europeana in their future work or not, and what aspects of Europeana they would find most helpful for their current study/work.

In response to the question of whether the participants would or would not use Europeana in the future, the focus groups showed both a surprising level of similarity and some significant differences.

For those who chose to address this question, the groups showed a relatively even split with 50 comments indicating that participants intended to use Europeana again in the future and 52 indicating that they had no strong intentions to do so.

The most positive responses were received in equal measure in the UK and in Italy where 75% of participants in both these groups (18 out of 24 participants in the UK; 15 out of 20 in Italy) indicated that they *would* use Europeana again in the future. In Bulgaria 50% of the school children who participated said that they *would be happy to use the site again in the future*. The intentions of one of the groups in The Netherlands was also 50% (6 participants out of 12).

This means that a very high percentage (75%) of the adult members of the focus groups (students/professionals/members of the public) expressed an intention towards future use, whilst amongst younger users (schoolchildren and teenagers of school age) the figure stands at approximately 50%.

Of the combined response relating to lasting impressions across all focus groups, the UK accounts for 36% of those who reported that they would use the resource again in the future, Italy accounts for 30%, Bulgaria 22% and The Netherlands 12%. Whilst older students and professional users may well be more predisposed to using a domain-specific resource in comparison to children and teenagers of school age, these discrepancies could also be accounted for by the increased number of participants in the UK study.

Responses to the question on intentions for future use across each of the focus group countries were categorised into 5 distinct areas, with data on the specific countries presented in Table 5:

- Content related
- Functionality and Usability
- Website look and feel
- Personal interest
- General

Older participants in both Italy and the UK showed more positive responses to the functionality and usability of the current iteration of the interface, whilst younger participants suggested that difficulties in query creation, navigation and downloading would put them off further use. It is interesting to contrast the initial high level of confidence in online searching, expressed in particular by younger users, with many of the statements that were subsequently made in relation to the difficulties this group experienced with searching and navigating Europeana for the set task. Samples of the responses by theme and country are provided below.

Table 5. Typology of reasons why participants would/would not use Europeana in the future

WILL use Europeana because...	Content related	Functionality & Usability	Website look and feel	Personal Interest	General	Total
Bulgaria	5	2	1	3		11
Netherlands	5			1		6
Italy	7	6		0	2	15
UK	8	5	2	1	2	18
Total	25	13	3	5	4	50
WILL NOT use Europeana because...	Content related	Functionality & Usability	Website look and feel	Personal Interest	General	Total
Bulgaria	4	1	2			7
Netherlands	17	11	2			30
Italy	4	1				5
UK	6	2	1	0	1	10
Total	31	15	5	0	1	52

In some locations positive feedback on intended future use was more limited in its range with no positive comment being made, for example, on the *website look and feel* by participants in either The Netherlands or Italy.

Those who cited their intention to use Europeana in the future due to **content related** reasons include 5 school students from Bulgaria who indicated that:

- *The website is useful with abundant information, photographs and facts (2);*
- *There is information about other cultures in Europe (2);*
- *There are images which could be helpful.*

Responses from The Netherlands, 5 in total in the questionnaires, mentioned:

- *It would be very helpful to find specific information and you can easily find things in different time periods;*
- *It contains a lot of images;*
- *It has a lot of historical information;*
- *It gives direct information and sources it well;*
- *It is a helpful information site.*

Users in the younger age group, therefore, showed an adequate understanding of the types of information that could be retrieved from Europeana and the uses to which these resources could be put.

In Italy, 7 expressed an opinion that Europeana is “a good repository for cultural domain”. And in the UK, postgraduate students, professionals and members of the public responded that:

- *It offers access to lots of images I may not otherwise be able to access so easily;*
- *Would use again for images [and would] recommend for images;*
- *The content, once retrieved is useful;*
- *It aims to have a large collection spanning multiple countries and cultures;*
- *It has a lot of material I would like to search further;*
- *It could be a useful addition to my research with video, sound etc;*
- *Would use ...but it is currently of little use in terms of literary material/texts;*

- *Would use...but [it's] lacking only in content.*

The potential for access to large collections of content was the primary motivating factor within this range of response, with **content related** issues accounting for 50% of the *positive* comments relating to intentions for future use. The emphasis is on the quantity of image collections that Europeana aggregates (perhaps due to how the retrieved sets of results are displayed as thumbnails). Not all the comments relating to further use were without qualification, the 2 last comments from the UK group clearly introduce the issues of improved access and collection development as stimulants towards further use; if Europeana were to address these issues when evaluating its content strategy it would provide a continual incentive to end users to re-use the resource.

13 out of 50 positive comments (26%) indicated that the **functionality and usability** of the current iteration Europeana v1.0 *would* attract participants to use the resource again, e.g. from Bulgaria:

- It is easy and pleasant to search in the website;
- The way one searches is very easy.

The comments from Bulgaria indicate that the difficulties in search and navigation experienced by many in this age group were by no means universal, with 2 pupils indicating that the current iteration of the interface invited further exploration and use. Positive comment, however, was not recorded in the Netherlands for this category.

In Italy 6 similar comments were recorded under this theme, consolidated around the opinion that this is “a good searching engine of cultural domain” and the UK recorded 5 positive comments in this category:

- *I would use it as part of a search into specific subjects;*
- *Need to understand it better;*
- *It gives easy access to material from European archives and galleries;*
- *It is quite easy to find out information on a subject;*
- *It seems like an effective, easy way to use search facility/database.*

Users from these last two older age groups complemented Europeana’s ease of use and effectiveness as a cultural domain resource and indicated intentions towards further use for both general and specific areas of interest. The comment that the resource required further acquaintance to be of proper use – or that it was not immediately intuitive – was not however an isolated one.

Of those who indicated that the related but more general category of the **website look and feel** of Europeana v1.0 would attract them to use the resource again, one such comment of this nature came from Bulgaria: “*The website is interesting and fun.*” Two participants in the UK especially liked the website look and feel:

- *Will use it...The idea is exciting, expectation is great. The changes in colour, content & design are terrific;*
- *It provides a wide starting–off point to consider going in different directions with research.*

For those who indicated that **personal interest** would attract them to use the resource again. Three students in Bulgaria commented:

- *There is information of interest to me;*
- *It will be interesting to see how the website will develop;*
- *It could be helpful for school work.*

One participant in The Netherlands detailed Europeana's benefits for personal use: "I think it would help to structure my essays, assignments, projects and give me a wide overview of a research area from just one site". A further participant in the UK rated personal interest as the main reason they would return to the resource: "*It is interesting to look at images, learn about history, get images for presentations, research holiday destinations*".

It is perhaps unsurprising, having been introduced to Europeana within the context of their schooling, that students in Bulgaria and The Netherlands should envision future use of Europeana principally for an educational purpose. Primarily a heritage and educational tool, nevertheless, one participant in the UK was attracted to its potential for more popular use with regards to leisure and travel.

A total of 4 more **general reasons** were offered for future use of Europeana. In Italy, 2 participants stated that they would use the site again because it was "interesting", and 2 extremely positive but general comments came from participants in the UK who indicated that they would definitely use the resource in the future:

- *It is interesting and brings things together (ie. not having to go through multiple sites);*
- *If most of European museum resources get access it will be - DREAM place.*

31 out of 52 (59.6%) **negative content related** comments were recorded indicating that the current range, quality, presentation and provision of access to Europeana content contributed to approximately 60% of the reasons why participants said they would not use the resource again in the future. Of these comments approximately 55% (17 of 31) originated from the focus groups in The Netherlands who complained most of not being able to find materials specific to their searches on Amsterdam and the lack of precision of results - where much of what was retrieved was considered irrelevant.

The Bulgarian focus group recorded 4 **content related** reasons, discouraging them from using Europeana again:

- There is an insufficient amount of information in it;
- There is not enough information in English;
- There is nothing which could be of help to me e.g. music, video clips (2).

Groups in The Netherlands recorded a total of 17 negative comments made of this nature:

- There are not enough resources; doesn't have enough relating to topics searched (2);
- There are not enough recent resources - was difficult to find anything younger than 50 years old;
- There are not enough resources in English;
- Because the search terms don't yield applicable results, too widely focussed, would rather use Google or go to the library (8);
- I can't get the information I need;
- It is specifically about culture, I'd probably use it for humanities assignments but I cant download/access anything;
- There is nothing which could be of help to me e.g. music, video clips (2);
- Google offers more understandable and rich information.

In Italy 4 negative responses were related to the content as a reason for not returning, with these specifically referring to a lack of contemporary materials and the better access offered by existing search engines:

- Google presently offers more (2);
- The search results are few and all old stuff (2).

Participants in the UK expressed 6 content related comments which elaborated on these criticisms:

- *The barriers to accessing material is too high;*
- *I find search engines such as Google/Scholar more productive in terms of returning actual documents which can be opened – requiring no subscriptions;*
- *My main interest are audio files;*
- *There is little in the way of text-based resources, I would have expected access to manuscripts;*
- *It is too image focused. I would need it to include article searches etc;*
- *There seems to be too little archival material relating to contemporary.*

The **functionality and usability** of the current iteration was advanced in 15 out of 52 comments (28.8%), as the principal reason why they had been discouraged from future use of Europeana. Therefore, just over a quarter of participants found the experience of search and retrieval, navigation, use of tabs and filters in Europeana to be less than user friendly and a further disincentive to re-use.

One comment from Bulgaria stated that there were problems with staying logged on the site during the focus group work.

An extremely high percentage of the comments (73%), 11 out of the 15, were made by the focus group in Amsterdam, indicating that participants in these age groups in particular did not find the interface user friendly for search, navigation or like the display of its search results – problems of registration were also experienced by this group

- *Not the most user-friendly site, needs getting used to, easier and more efficient websites can be found, confusing and hard to find information (6);*
- *I do not like the way it presents the results you are looking for;*
- *Many things about the site are not refined;*
- *It is disorganised;*
- *There are problems e.g. the registration;*
- *I do not like it and I do not like to use websites in general.*

One participant in Italy was put off from further use by difficulties experienced in advanced searching within a specific task: *“It’s not easy to search starting from the single analytic objects”*. 2 comments of a similar nature were derived from the UK focus groups: *“I feel that it is not a coherent enough resource for academic use”*., *“What I would do is use the site for less focussed tasks or browsing or serendipitous discovery, then switch to Google (or Scran³) to find the actual content.”*

The current **website look and feel** was deemed responsible for 2 participants in Bulgaria stating that they would not be attracted to use the resource:

- *I do not like it and I do not like to use websites in general;*
- *I am not sure I am going to use it because Google offers more understandable and rich information.*

Europeana’s presentation was criticised in Amsterdam also, with one participant describing *“the amateurish feeling to it”* and *“(at the moment) I don’t think it is well*

³ Scran is part of the Royal Commission on the Ancient and Historical Monuments of Scotland providing educational access to digital materials. Available on <http://www.Scran.ac.uk>

presented, it still has a lot of work to improve on". In the UK the look and feel of the site did not instil one user with confidence in its use: "Will NOT use it – I am more confident of success using other / familiar websites".

A total of 52 negative comments relating to future intentions were recorded across all groups, however, participants were fully aware that the site was still under development and most of their criticisms were of a provisional nature.



Focal point. *Despite feeling assured of their skills in online searching, younger users felt that the difficulties they experienced in navigation, query creation and using filters to refine searches would put them off using Europeana again in the future.*

Table 6 indicates why participants thought that Europeana *would or would not* be of help to them in their future studies or work.

Table 6. Reasons why Europeana would/would not be of help for future studies/work

Positive comments	Content related	Functionality & Usability	Personal Interest	General	Positive
Bulgaria	7	4		1	12
Netherlands	10	2	2	2	16
Italy	2	8	1	10	21
UK	9	3	4	7	23
Totals	28	17	7	20	72
Negative comments	Content related	Functionality & Usability	Personal Interest	General	Negative
Bulgaria	3			2	5
Netherlands	0	1		2	3
Italy	3			2	5
UK	1	1			2
Totals	7	2	0	6	15

Despite accounting for approximately 55% of the **negative content related** comments received – of those who said they would not be tempted to use the resource again due to the quality and coverage of its content – participants from the Amsterdam focus group account for over a third (35.7%) of those who reported that Europeana *would* be of use in their studies or work for **content related** reasons. The UK accounts with 9 opinions for just less than a third (32%) of those participants who viewed the quality and quantity of the content that Europeana provides access to as most valuable for their study or work. School children in Bulgaria with 7 opinions accounted for 25% of this **content related** view.

The focus group in Italy accounted for 8 of the 17 comments which indicated that the **functionality and usability** of Europeana would be an incentive to participants wishing to use the site for their study or work; a figure double of that recorded for Bulgaria and four times that of The Netherlands. It should be remembered that the group held in Fermo, Italy consisted of students from an Information and Cultural Heritage course and that this may help to account for the discrepancy among the positive responses. However, this figure is also more than double that of the UK figure which consisted of students, graduate students, professionals and members of the general public – all of

whom either had a personal or professional interest in cultural heritage and the arts - suggesting that further advocacy work still needs to be undertaken amongst this key group of stakeholders in order to inform them of the merits of Europeana as a resource for research and teaching and to thereby encourage its sustained future use amongst this audience.

Italy and Bulgaria accounted for 6 out of the 7 *negative* comments received related to Europeana **not** being considered useful for future study or work for specifically **content related** reasons with the UK accounting for 1 of these. One *negative* comment from The Netherlands and 1 from the UK were recorded in relation to the **functionality and usability** of the site rendering it unusable for study or work. Very few participants offered other specific answers to this question.

2.1.4. Dynamics of impressions

Figure 15 summarises the overall estimates given by participants in the beginning of the study and at the end of the study. For the numbers of initial positive/negative comments on Europeana, the dichotomic pairs were used with all ratings under 5 considered negative and with those between 5 and 10 considered positive. The bubbles on Fig. 15 should be considered as a relative representation of positive vs negative initial comments. The bubbles for the final opinions on Europeana are generated in proportion to the negative and positive comments discussed in section 2.1.3. It should be noted here again that these data are qualitative and are based on the opinions of groups with a limited number of participants; they should not be used for any generalised conclusions about Europeana but present the dynamics in the studied groups.

Generally, the feedback of the participants in the beginning was rather positive and since Europeana was new to almost everyone it could be said that the website creates the expectation of being mostly *attractive, well organised, easy to use and interesting*.

Lasting impressions of participants show an increased number of critical opinions. This means that the experience of performing the tasks was not entirely positive and a crucial question of the study is what can be done to improve future user experiences from the point of view of the participants – what was difficult, what stumbling blocks they experienced. The study gathered and presented opinions on the areas which could be addressed in sections 2.1.2. and 2.1.3.; these opinions also inform the recommendations presented in Section 3.

It should be noted that these opinions report what users expressed during the study. They document opinions and do not analyse what issues had already been addressed by the Europeana projects. Evaluation of the feasibility of suggestions was also not a task of this study.

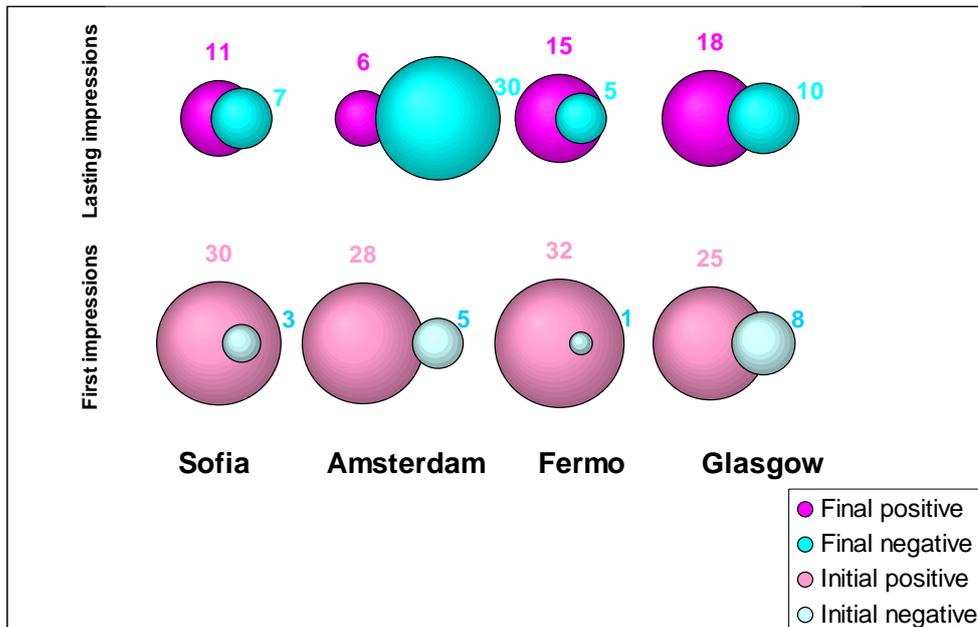


Figure 15. Initial and final opinions on Europeana

2.2. Evidence on user behaviour

2.2.1. User scenarios

The assignment given to all focus groups and media lab participants was designed to incorporate eight different usage scenarios which are presented in detail in this section.

This range of scenarios requires users to formulate searches that target a range of metadata fields to retrieve various types of materials. This approach made it possible to assess which usage scenarios are easy to satisfy and the stumbling blocks that users of the Europeana prototype may encounter.

This approach to the study is coherent with the TIME framework for evaluating digital libraries developed by Andrew Dillon⁴. This framework focuses on four elements: Task – what users want to do; Information model – what structures aid use; Manipulation of materials – how users access the components of the document; and Ergonomics of visual displays – how they affect human perception of information. The assignment bringing together 8 scenarios constitutes the Task; Europeana provides an environment in which the users can try various searches (this would map the Information model in TIME).

The basic challenge for the study was to learn as much as possible about the Manipulation of materials – how users access the components of the document; and Ergonomics. The findings on Ergonomics are presented in section 2.2.2. and they are extensively based on evidence of use actions gathered through eye tracking. The evidence on Manipulation of objects is addressed through the evaluation of the performance on the scenarios in this section and through the analysis of search strategies of the participants presented in section 2.2.3. These data provide additional insight within the context of this study because they allow to draw comparisons between the statements of the participants (presented in Section 2.1.) and their actual actions.

The total number of presentations prepared in the various groups is 15 in Sofia, 19 in Amsterdam, 10 in Fermo and 24 in Glasgow. The numbers in some groups are lower than the numbers of participants involved since in some groups two participants worked jointly on one presentation. In the scenarios below we explain the search scenarios applied and the performance in the various groups.

Scenario 1	Finding texts on a predefined topic
What is the resource in question?	Text objects
General description of the use case scenario	<i>Students working on assignments need to identify reliable text sources.</i> They were expected to be able to use the text objects being able to copy part of them and supply an automated reference to the source.
How many participants succeeded in populating the slide?	Sofia – 8 Amsterdam – 6 Fermo – 5 Glasgow – 10
Sofia	No one in the Sofia focus groups included excerpts from documents; all responses were descriptive. Some participants included domains (“ <i>about the history</i> ”, “ <i>about the economics</i> ”,

⁴ Dillon, A.: Evaluating on TIME: a framework for the expert evaluation of digital interface usability:. International Journal on Digital Libraries. 2, 2/3, (1999)

	<p><i>“about the nature”</i>), some were about the most popular content <i>“about the life in Sofia in the end of the last century”</i>), some were about the languages <i>“most information is in Spanish and German”</i>, <i>“there is no information in Bulgarian and English”</i>.</p>
Amsterdam	<p>Six participants in Amsterdam populated this slide. One made comments ‘Amsterdam is a cultural place. Amsterdam is easy going’. Another listed ‘Culture, Art, Music, History’. Both of these slides could have been completed without consulting Europeana at all. A third slide contained: ‘The coat of arms of the City of Amsterdam, identified by three silver crosses known as the ‘triple-X’ motif and two golden lions on either side of the shield.’ It is unclear whether this text has been derived from Europeana content or whether it was drawn from the participants own local knowledge. Two presentations noted the general content of Europeana relating to the slide: ‘Mainly political documents (French) and a lot of cultural information (in Dutch)’ and ‘No English texts on Amsterdam’. Only one participant transferred Europeana content to this slide – they copied a catalogue record.</p>
Fermo	<p>Participants had a general difficulty to find and understand text objects (especially non-Italian ones). Two participants chose images instead of texts; two observed that most results were about ancient Rome; the choices made fall on Gallica’s digitised books.</p>
Glasgow focus group and media labs	<p>Ten participants in Glasgow populated this slide. Four of these ten slides were descriptive: eg. describing the range of materials discoverable « people write : maps, Philosophy, Poetry and ballads, Scots gaelic and letters sent to and from Glasgow » which did not include illustrative resources; 3 illustrated slides with documents of cataloguing reference to retrieved documents; one participant used the slide to complain “I cannot find any writing about the city of Glasgow”; another to point to a limitation in subject coverage “ People don’t write about housing?”. A further 3 added feedback: “I tried to search under various key words surrounding Glasgow including Second City of the Empire, Clyde ship yards, Kelvingrove Museum and of course simply Glasgow but there were no texts only thumbnails of images. This was very frustrating some pdf articles on the city or newspaper reports etc would have been helpful or even a link to other cultural websites for example when I typed Kelvingrove museum a link to their website would have been helpful”; “Researching for general subjects about Glasgow city I did not retrieve text”; another complaining that they retrieved maps in this search. The two slides pictured left include text which has been drawn from the catalogue record of Europeana partners – the first has included a thumbnail for a video clip from the Scottish Media Group but the comment relates to a lack of textual resources highlighted by this group “There are a number of useful images and videos relating to Glasgow writers, but next to no primary or secondary texts, which would be of most use to a literature student.”; however the second succeeded in discovering a range of scanned newspaper articles.</p>
What problems were experienced?	<ul style="list-style-type: none"> • It was impossible to understand materials in foreign languages (experienced in Sofia, Fermo). • Maps were received as text objects (Glasgow). • It was a common difficulty to copy fragments from text sources; in many cases texts come as digitised images and can not be used easily to copy a fragment. • No participants added references which would indicate where the text objects come from.

Scenario 2	Finding images on a predefined topic
What is the resource in question?	Images
General description of the use case scenario	<p><i>Students working on assignments are asked to identify and use relevant images.</i></p> <p>Participants were expect to be able to copy the images image files into their presentation and be able to supply a reference to the source.</p>
How many participants succeeded in finding and using images?	Sofia – 13 Amsterdam - 10 Fermo - 8 Glasgow - 15
Sofia	<p>The most popular images included pictures of the St. Nedelya church (used 6 times), the mosque in Sofia (used 3 times) and a fountain (2 times). These images appear in the first 3 pages of the search results if one searches for “Sofia”. Two of the participants also used folk costumes - even though this question was about how the city is seen. One participant wrote “<i>Others cannot have an opinion about how Sofia looks, because of the lack of both historical sources and contemporary information</i>”. No video materials were included – but the available 13 results when searching for Sofia are not relevant to the city.</p>
Amsterdam	<p>Ten presentations had this slide populated. Three slides included comments only: ‘As a place for art and nature’; ‘Cultural’; ‘As a shipping and political centre, focusing on small scale revolution, art and the local industry’. One catalogue record was transferred (for Title: Amsterdam, Hafen), along with a small image. The final version of this slide populated simply stated ‘Could not find any personal views of people on Amsterdam’.</p>
Fermo	<p>6 of the participants chose old maps of Rome or Roman Empire (sometimes extracted from books)</p> <p>6 chose digitised postcards (most from the Italian National Phototeque)</p> <p>2 participants chose the 1972 photograph of people (from Deutsche phototek) associated with an image of Roman coins</p> <p>2 participants chose the 1826 printed archaeological map of roman ancient ruins</p> <p>4 made no choices – they could find easily anything relevant</p> <p>They generally complain that the visions of ancient Rome seem more representative (and abundant) than newer ones</p>
Glasgow focus group and media labs	<p>Fifteen presentations had this slide populated, of these five provided only images with no accompanying text with ten presentations including a range of image files with explanatory text. Of these image+text slides, text was often drawn from generic information about the city and not specifically related to resources on Europeana e.g. “Glasgow is seen as having social problems”; two supplied cataloguing data provided by Europeana partners; and one added a personal catalogue of the images they had browsed.</p>
What problems were experienced?	<ul style="list-style-type: none"> • Images were most easy to find. • Quality concerns were expressed on the size and resolution.

Scenario 3	Finding audio and/or video materials on a predefined topic
What is the resource in question	Audio and/or video
General description of the use case scenario	<p><i>Students working on assignments require access to audio/visual materials</i></p> <p>Participants working on the assignments were asked to identify sounds which might be either typical of or unique to their city. They were expected to be able to access audio/video files and insert the resource within their presentations whilst supplying a reference to the source.</p>
How many participants succeeded in finding and using audio / visual materials?	Sofia – 3 Amsterdam – 7 Fermo – 5 Glasgow – 0
Sofia	<p>Here the participants were inventive and instead of including images, they provided descriptions and included images of folk instruments, concert posters and a photograph of the mosque with a comment that one can hear the prayers from the mosque. Although audio files on the topic are available in Europeana participants were not able to find them.</p>
Amsterdam	<p>The majority of participants failed to transfer material depicting the sounds of Amsterdam, with only 7 such slides being populated. Three presentations contained text only: 'Busy streets, people, Vondel park'; 'Music from the concert hall'; 'As a musical point'. One presentation showed inventive thinking by including an image of a sound wave. Unsuccessful attempts were made to transfer audio files. This resulted in two slides showing , with one including an accompanying catalogue record. The most fully populated slide described an event that would have resulted in significant noise and an unrelated image.</p>
Fermo	<p>Half of the participants could find and associate sounds to the city of Rome (10 of 20). 8 of them chose the two concerts recorded in 2007 in Paris, Cité de la Musique. 2 added to this concert the description of "Sont abordés les films suivants : -"Fellini Roma" de Federico FELLINI"</p> <p>Another one write down just the title of the song "Arrivederci Roma" - not present in Europeana (thus, no result!).</p>
Glasgow focus group and media labs	<p>Twelve participants populated this slide but none succeeded in fully accessing an audio or video resource. Many participants complained of unsuccessful attempts to transfer audio files. This resulted in a number of slides showing the "Audio clip" thumbnail. The feedback from one participant was extremely positive in relation to the audio search "The sound collection is rich, easy to access and seems to have adequate response related to the search terms used. The less frustrating part of the search" – however their slide consists of a single "audio clip" thumbnail.</p>
What problems were experienced?	<ul style="list-style-type: none"> • Big challenge to access video materials. • Audio materials easier to find and use • Generally difficult to copy such objects into presentations. • It would be helpful to have previews of material available through subscription.

Scenario 4	Finding materials presenting the same object in different times
What is the resource in question	Any type of material presenting a particular physical object with different date of creation
General description of the use case scenario	<p><i>Students working on assignments are asked to find materials relating to the same object/place over time</i></p> <p>Participants in the task were asked to identify materials, pictures of landmarks etc. which could be said to represent their city in different historical periods. They were expected to be able to access and insert the resource within their presentations whilst supplying a reference to the source.</p>
How many participants populated the slide?	Sofia – 5 Amsterdam – 10 Fermo – 6 Glasgow – 15
Sofia Specific landmark: How did the Royal Palace in Sofia change over time?	<p>Most of the participants ignored this slide completely. Images of the palace can be discovered in Europeana, but the participants did not try to search using additional terms.</p> <p>The information about the art gallery which is in the former Royal Palace is correct but reflects the personal knowledge of this particular participant and is not based on materials retrieved from Europeana.</p>
Amsterdam Resident city: How has Amsterdam changed over time?	<p>10 presentations showed content on this slide. One showed an old and a more recent map of a geographical area; one presentation included two images (a building and a street scene) used by other participants for the 'how do people see Amsterdam' slide; another contained a map also used by another participant for the 'how do people see Amsterdam' slide also noting 'No information about Amsterdam in English at all'; this same image was used alongside another old map on another presentation; one catalogue record for 'L'humanité avant le déluge' was added alongside two image files; one participant noted that there was 'No map of amsterdam' and included an image that they felt depicted a futuristic scene (although not specifically of Amsterdam); three slides contained text only. A final slide noted that the participant 'can not add images!'</p>
Fermo Capital city: How has Roma changed over time?	<p>8 participants could not find (= had not enough time to find, copy and paste) images or objects to represent the change of Rome. Some complained about the difficulty in finding present images 12 participants could find good images, for example old/modern images of Coliseum (taken mostly from postcards) or others (via Condotti, S. Peter...).</p>
Glasgow focus group and media labs Resident city: How has Glasgow changed over time?	<p>The 15 presentations selected a total of 35 images for this slide to illustrate how Glasgow had changed over time. The most common approach adopted in the time available was to select 2 or 3 contrasting images of Glasgow buildings retrieved from different historical periods such as the first slide shown which contrast a late 19th photograph of The Old College from College Street, from 1870 with a more contemporary one of Tower Blocks at Camlachie, from 2002. The participant used the timeline function to select these images but was unable to adequately refine their searches. Many accompanying statements were made from local knowledge rather than from sources discovered on Europeana, however catalogue records were retrieved from SCRAN, Newsquest (Herald & Times).</p>
What problems were experienced?	<ul style="list-style-type: none"> • Difficulty to "guess" what objects are available on images from different times – this would be easier if resources presenting the same object were linked.

Scenario 5	Finding materials on a very specific subject (like a building or a square or a person)
What is the resource in question	Any type of material relevant to the specific subject
General description of the use case scenario	<p><i>Students need to retrieve materials relating to a specific place or person</i></p> <p>Participants were asked to identify materials related to a building or landmark of popular/ iconic status within their respective cities. They could focus on its appearance or use in an historical period alongside the contemporary one. They were expected to be able to access and insert the materials within their presentations whilst supplying a reference to the sources.</p>
How many participants succeeded in finding and using materials relevant to a specific subject?	Sofia – 2 Amsterdam – 12 Fermo – 5 Glasgow – 15
Sofia Place and Person: Sofia – saint, princess, city...	Only two participants answered that there is no information about St Sofia whilst there is some information about princess Sofia.
Amsterdam Building: The Royal Palace on Dam Square.	Twelve (63%) participants populated this slide, 8 of whom added images. Four of the twelve included one image, while 4 included two images. A total of six unique images were used. Seven presentations showed dated images of the Palace, while one showed a guard. Of the four presentations not containing images, one contained a catalogue record while the other three contained text, not derived from Europeana. One was a comment about the resident of the Palace, the other two were comments relating to the search process – ‘Can only find sources if searched in Dutch’; ‘Many images, not much written information. Sloppy excessive amount of information, not relevant to my search’.
Fermo Place: The Fontana dei Quattro Fiumi in Piazza Navona	Half (10/20) of the participants could not find (or did not have enough time to find, copy and paste) images or objects to represent the chosen monument. Among those who found objects (i.e. images), 6 chose modern postcards and 4 chose a drawing.
Glasgow focus group and media labs Building: Fifteen participants populated this slide on the Glasgow School of Art.	In total 11 black and white photographs were incorporated, some of which showed an image of its architect Charles Rennie Mackintosh; this figure can be contrasted with the 19 colour images, principally contemporary photographs of the school, and one colour video that was selected for inclusion. All the slides on the School of Art reflected the most contemporary materials; however none of the participants picked up on the fact that 2009 was the centenary year of the Glasgow School of Art with many exhibitions and events running throughout the year. This factor raised the question of how up to date materials in Europeana actually are. Cataloguing data from Scran was also included by way of illustrative text. The text on the slide derives from an unspecified catalogue record and reads “Charles Rennie Mackintosh was born in Glasgow on 7 June 1868”.
What problems were experienced?	<ul style="list-style-type: none"> • Student in Bulgaria experienced problems with polysemy of the word “Sofia”. • Although this seemed an easy task with such specific objects to search for, it seems participants had difficulty finding objects that match their knowledge and expectation about the objects.

Scenario 6	Finding materials on a significant historical event
What is the resource in question	Any type of material
General description of the use case scenario	<i>Students require a range of materials on an historical event</i> Participants were asked to retrieve materials relevant to a specific historic date or event. They were not restricted to what material they selected to represent the event and were encouraged seeking primary materials as well as secondary sources. They were expected to be able to access and insert the materials within their presentations whilst supplying a reference to the sources.
How many participants succeeded in finding and using materials on a particular historical event?	Sofia – no such slide included in the presentation (due to the small number of objects on Sofia connection to events in specific time was difficult to make) Amsterdam – 10 Fermo – 4 Glasgow – 16
Sofia	Not applicable
Amsterdam 1853 (Vincent Van Gogh' s date of birth)	9 presentations did not have this slide populated. 3 contained text only, with the text being wrong on one of these occasions. 6 presentations included images only on this slide. 4 of these included one image, usually a portrait of Van Gogh, and one of these had no connection to the artist. 2 presentations used 2 images on this slide. The final presentation only included a comment on this slide, to say 'All that was found was images, of Van Gogh and Dutch information, of which I can not read'. One slide indicates that this participant did not retrieve the correct information relating to Van Gogh from Europeana. Only two presentations included the correct information relating to Van Gogh – that he was born in 1853.
Fermo Rome during the Ventennio (1924-1945)	The moderator asked to find and present objects useful to represent Rome during the Fascist period: Just 8 participants could find (= had time to find, copy and paste) images, among them: 6 chose images (old postcards) of the buildings erected in the 30s 2 chose a video of Marcello Mastroianni and Ettore Scola, a press conference on the 1977 film "Una giornata particolare" (A Special Day), which tells the story of a housewife and her neighbour who stay at home in Rome on the day that Adolf Hitler visits Benito Mussolini.
Glasgow focus group and media labs Glasgow 1919 (40 Hours strike)	Sixteen presentations populated this slide with content. The historical task was selected in order for participants to seek primary historical resources both image based and textual. Surprisingly few materials of a textual nature were retrieved on the "40 Hours strike" in Glasgow on the 31 st January 1919 when troops and tanks were sent into Glasgow's George Square to quell the strike. Participants used 20 images (including 1 colour poster) but only 6 related texts to reconstruct the context of this historical event from resources they found in Europeana. A lack of textual resources (both primary and secondary) was complained about by many participants in feedback.
What problems were experienced?	<ul style="list-style-type: none"> A general observation is that participants did not use the timeline to search for answers of these questions but rather performed general searches combining the name of their city and the year in question.

Scenario 7	Finding materials on a topic of the participants' choice within the context of the general theme
What is the resource in question	Any type of material
General description of the use case scenario	<i>Individuals using the resource to retrieve information on their own personal interest or concerns</i> Participants were invited to present materials on a subject of their own choosing. They were not restricted to what materials they would select as long as the subject was in keeping with the thematic context of the overall task. As with the set task, they were expected to supply a reference to the sources they opted to use.
How many participants succeeded in finding and using materials of their own choice within the overall thematic context?	Sofia – 9 Amsterdam – 4 Fermo – 0 Glasgow – 1
Sofia	Not applicable
Amsterdam	Four presentations included content in the 'free' slide. Three were entitled 'Make Love Not War', 'Sport' and 'Zwarte Piet' and the third included comments stating 'It keeps logging me out from the account. Finding sources was extremely hard. After trying for 1 minute I started thinking about using Google...'
Fermo	Not applicable
Glasgow focus group and media labs	Only one presentation included content in the 'free' slide. The material is on the familiar Glasgow theme of urban regeneration and most likely drawn from prior knowledge than from fresh information discovered on Europeanana. One thumbnail representing a link to video footage of tenements being demolished has been inserted, also an image of children with space helmets carrying spacehoppers, and a photograph of old tenements. These were retrieved from a brief search of the image galleries – but it does not make clear if the participant means they made use of the timeline here or only the image/video tabs on the results page. The accompanying text reads: "(In the brief time searching) general image galleries have a lot showing urban regeneration/need for regeneration."
What problems were experienced?	<ul style="list-style-type: none"> This task could redirect the participants in browse mode; a low number populated the slides.

Scenario 8	Identifying the providers of digital objects who contributed the highest number of objects on a particular topic
What is the resource in question	The summary of providers; reflection on identified resources which were not discovered in Europeanana
General description of the use case scenario	<i>Students being required to provide information on the provenance of objects; and an exercise in reflective practice.</i> Participants were requested to provide feedback on the institutions and partners who had supplied the most materials on their city in Europeanana. Alongside this feedback was gathered on what they considered to be the most useful aspects of the site and their recommendations for its further development.
How many participants succeeded in identifying the providers who had contributed the highest number of digital objects?	Sofia – Amsterdam – 5 Fermo – 4 Glasgow – 11
Sofia	No one checked the 'providers of information' in the left advanced search pane which is displayed jointly with the search

	<p>results; all answers on this slide were based on the impressions of the participants - including guesses (such as the British Museum, the Saxon State Library, Bibliotheka Virtual Miguel de Cervantes). Some participants generalised that most materials are German and Spanish, or “foreign”.</p> <p>Most participants suggested they would like to see more about the history of the city (3). Some suggested that in Europeana, it would be helpful to have: more information about Sofia’s name, the development of the city, more photographs, the opinion of others about the city; and more about the country’s art, more Bulgarian masterpieces, more about Bulgaria in general, more photographs, more texts in Bulgarian, more video objects.</p>
Amsterdam	<p>Five out of 19 included comments on the final slide, providing feedback on what they think of the sources in Europeana and what they would like to see more of. Participants thought most objects about Amsterdam in Europeana are provided by French people, bibliotheque and Dresden State and University Library. Additional comments included that more work was needed and additional resources are required but that the ability to refine searches in many and diverse ways was beneficial.</p>
Fermo	<p><i>Most objects about Amsterdam in Europeana are provided by (MiBAC – IT, Fondation Federico Zeri, Biblioteque Nationale de France, Stadtgeschichtliches Museum Leipzig) in general they say that they are mostly from Italy</i></p> <p><i>Most useful for this presentation was (images, images, images)</i></p> <p><i>I want to find in Europeana more about Rome: (present times, everyday life, more clear information on music and video objects, more text objects, better search options – because of language barriers.</i></p>
Glasgow focus group and media labs	<p>11 participants offered feedback on this slide with 10 having checked the information on providers, 8 perceived that Scran had supplied most materials on Glasgow but one participant complained that “you need a subscription to offload their material”; alongside Scran, the Mitchell Library and The University of Glasgow were identified as institutions providing resources to Europeana; one participant offered a general list of “universities, archives, newspaper archives, screen archives”; and one viewed “the bibliotheque nationale de france” as a key provider for information on the city. Most useful for users was the simple search and the “wide range of images available for browsing”, with 5 participants praising “the abundance of images available; particularly historical items documenting the city’s architectural and political past”. Particularly useful for one was the tabbed browsing and one was pleased by the overall “clarity of presentation of results”. However, another participant complained that they did not want to be “overwhelmed by results!” or “to be confused by ‘odd’ images or items that don’t match my perception of a search for the city”. Nevertheless, 2 participants benefited from the “advanced search options and refinement opportunities” and “search on specific date or place”. 4 participants wished to find “more textual resources”, in particular “textual documents which can be opened and read” (slide bottom left) and collections of “archived newspapers / publications / essays”. Another request came for “more up-to-date content on the city”.</p>
What problems were experienced?	<ul style="list-style-type: none"> • Generally it seems participants have not looked at the drill-down options of search to provide the information but responses were based on their impressions what type of materials they have seen during the work on the assignment.

2.2.2. Eye tracking

Here we report on the use of eye-tracking to supplement the findings of our previous focus groups and usability evaluation of Europeana. Eye-tracking is a technique used by the media lab to record eye movement as the user is views a given stimulus – in this case the Europeana website. The eyes do not rest in a single position for long, and will move several times within a second. Mico-movements might only span a few pixels of the screen. Throughout this section we will refer to eye fixation and saccades. As the user fixates on a particular screen item, eye-movement will become still. This behaviour is defined as a fixation. Between fixation points the eyes will move quickly until the user rests their gaze on a further item on the screen. Movement between fixation points is referred to as saccades.

To record fixations and saccades while users view the Europeana website we employed the Tobii X50 eye tracker. A photograph showing experimental apparatus *in situ* is presented in Figure 15. The eye-tracker was situated beneath the computer monitor, at an angle of 59 degrees, and the user positioned approximately 60 cm from the eye-tracker. The monitor used was wide-screen, with viewing dimensions of 22"x16". ClearView, the software which reads data Tobii eye-tracking hardware, was configured to record eye movement, video of the user from the webcam (show in Figure 16 above the screen), and any audio feed from the microphone.



Figure 16. Tobii X50 Eye tracker recording eye movement as user navigates Europeana

Here we present a descriptive overview of eye-tracking data gathered as users interact with the three most relevant outputs from the Europeana website – the ‘home screen’, the ‘results screen’, and the ‘time line’.

Home Screen

The home screen is the user’s first point of entry into the Europeana website. As users are prone to judge their experience based upon their initial perceptions, the Home Screen is of great importance.

Figure 17 shows a heat-map visualisation of user’s gaze while navigating the home screen. Heat-maps provide a visual representation of where users look. From this, we can see which areas of the screen were attended to while using Europeana to make a

Power Point presentation. The heat-map presents aggregated data of all fixation points recorded across tasks and across users. They therefore represent a comprehensive and rich overview of eye-movement behaviour when using Europeana. However, heat-maps represent quantitative data sets, and as such require a large number of participants (30+) across a number of different tasks to give definitive output. In our study, we had few participants and so cannot guarantee that all likely gaze behaviour has been captured. Heat maps will therefore be used as general indicators to support further data.

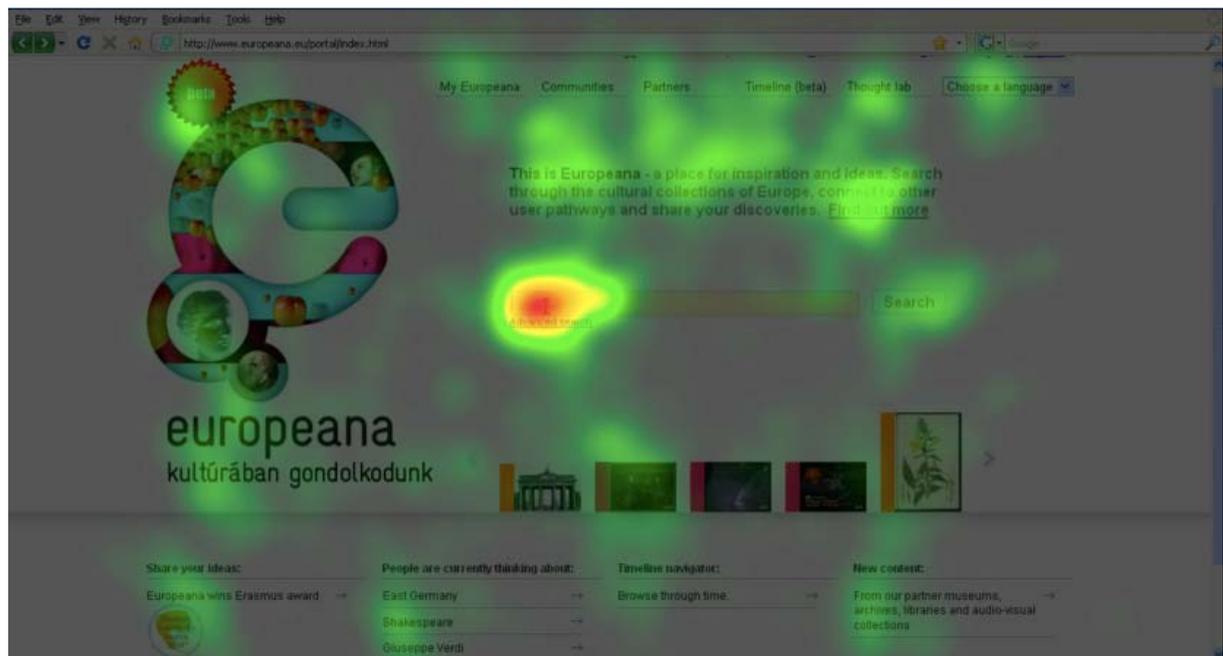


Figure 17. Heat-map visualisation of user fixation data for Europeana ‘Home Screen’

To support the reading of heat map data, we have also supplied a detailed visual comparison for ‘areas of interest’ (AOI), as shown in Figure 18 (parts a and b). Figure 17a augments the home screen with colour-coded areas of interest. Used in conjunction with Figures 16, we can compare the saliency of the many elements that make up the home screen. For example, the red zone covering the Search Box in Figure 16 identifies this as an area containing many fixation points. This is supported by Figure 17, which shows that the area around the Search Box accounted for 66% of all fixation points. Given that navigation through Europeana is accomplished via the Search Box, this is in keeping with expected usage.

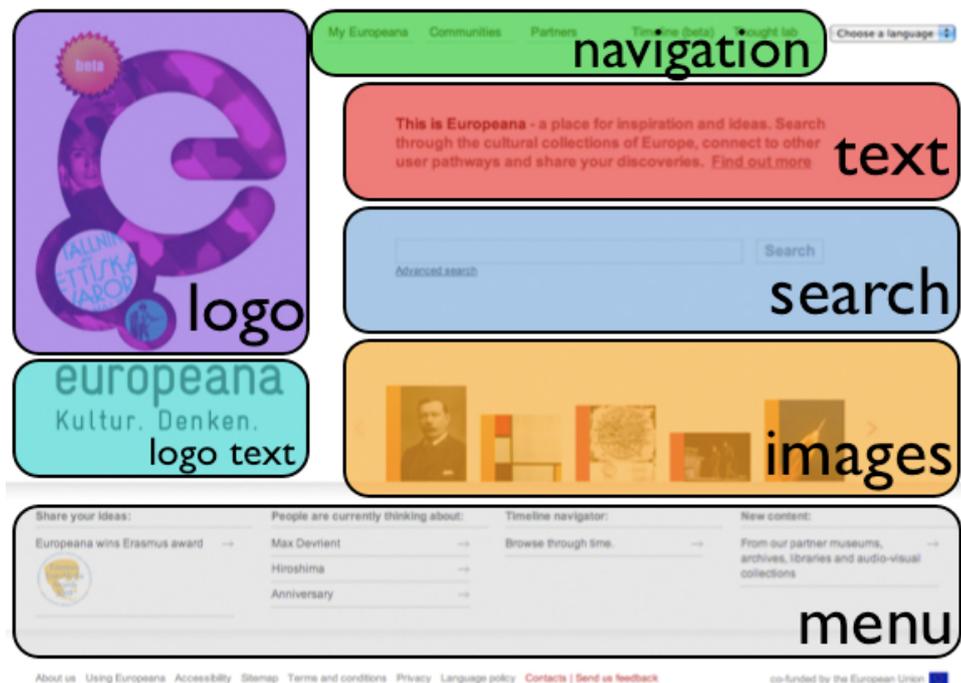


Figure 18(a). Europeana ‘Home Screen’ augmented by ‘areas-of-interest’

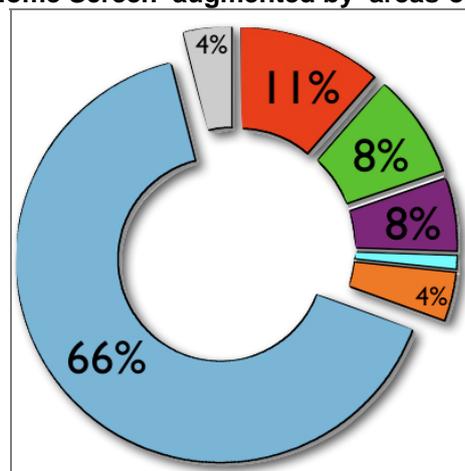


Figure 18(b) Doughnut graph showing percentage of fixation for each Aoi on ‘Home Screen’

Gaze Plots

Along with Heat-Maps, we can also provide further visualisation of eye movement using ‘gaze- plots’. Light blue dots augment the screen image, showing the location and order of eye gaze. The size of the blue dot denotes the length of fixation, which is particularly important as long fixation often indicates user interest or confusion. An example of a Gaze Plot is given in Figure 19. Gaze Plots can be used to identify the order of fixation during the initial exposure of stimuli. This will indicate where the eye is initially drawn as the user attempts to makes sense of the screen. Looking at the first few seconds of gaze when a screen is first displayed can identify legibility issues, as the eye may be drawn to areas of the screen that provide little help with the task.



Figure 19. Example Gaze Plot

Unlike heat-maps, gaze-plots do not offer an aggregated representation of the data set. To avoid repetition of individual user plots we have instead generated aggregated plots for the home screen, as shown in Figure 20. The aggregated plot shows the typical order in which people direct their gaze as their attention is drawn from one area of interest to another. To calculate the ranking of each Aoi we reviewed the gaze plots showing the first exposure of a given screen. Each Aoi was then scored based upon the order in which a participant directed their gaze. For example, in Figure 18 the participant looked first at the logo text, their gaze was then directed to the bottom menu bar, from there they moved attention to the search bar, the welcome text and then finally to the logo image. The plot ends at this point as the user revisits a previous Aoi. To aid comprehension, we have ranked the mean rankings and colour coded the screen's Aoi in keeping with the heat map – with red being high ranking and blue low ranking.



Figure 19. Aoi ranked by saliency during initial exposure – Home Screen

Home Screen Observations

The following section reviews the Home Screen and considers each area-of-interest in turn. Pertinent legibility issues are highlighted.

Search Bar

The Search Bar is the user's main tool for navigating the Europeana website, and as such must be immediately legible when first viewing the home screen. Figure 19 shows that the Search Bar is highest ranked Aol, drawing immediate attention on first exposure of the screen. This is supported by the heat-map data in Figure 16, here we see that the Search Bar is a significant hot-spot with users fixating primarily to the left, as they enter their search terms. As shown in Figure 17 the Search Bar accounts for 66% of all fixation across all users and all tasks. It is clear from the eye-tracking data that the Search Bar is legible and as-such, meets user requirements.

Logo and Logo Text

The Europeana Logo and the supporting text, which is given in multiple languages, accounts for nearly 25% of screen real estate. As such, we might expect that the logo would draw user attention from competing Aol. In Figure 19 we see that indeed, during initial exposure, the saliency of the logo was particularly high, having been ranked the second most likely area to which people divert their gaze. However, if we look at the heat-map shown in Figure 16 we see that overall, the logo did not receive much attention. In Figure 17 we see that the logo and logo text together account for only 9% of user attention across all users and all tasks. This suggests the logo initially grabs user attention, but interest wanes over time as the user attempts to accomplish the set task.

Despite the extensive screen real-estate given to the Logo Text, it receives little attention throughout the task. Although eye-tracking data cannot confirm this, it is likely that the user is unable to understand the language of the text and quickly comes to ignore it. This should not be considered a negative point. The semiotic message that this is a site for all Europeans will still be noted – and the text does not detract attention from more important Aol.

Welcome Text

The 'welcome text' is the second most salient Aol, accounting for 11% of user attention (see Figures 16 and 17) and being ranked joint 2nd in viewing order (see Figure 19). If we look at Figure 16 in more detail, two points may be noted. First, it is mostly the bold text that receives user attention, with general scanning thereafter. Secondly, it is the first line of text that receives most attention. This suggests that the users fail to read all the text, probably understanding the point being made and shifting attention elsewhere. This behaviour is confirmed when looking at the gaze replay.

Navigation and Menu

The top navigation bar is much less salient than the 'search bar' accounting for only 8% of user fixation. This may be due to the lack of prominence, or that the user does not understand the importance of the navigation bar. When observing gaze replay it was noted that navigation terms received extended fixation – suggesting that the user was having difficulty understanding the terms and where they would likely navigate to. The lack of saliency is observed in Figure 19, where we can see that the navigation is barely noted on first exposure of the Home Screen. Given that this is a powerful navigation tool, it is perhaps too difficult to comprehend with slight legibility issues, with attention being grabbed by less important Aol. The ThoughtLab in the Navigation Bar received slightly stronger attention compared to other elements.

Images

Currently, the images presented on the Home Screen suffer from issues of low saliency. They are rarely noted during initial exposure, being ranked last – as shown in Figure 19. They also account for just 4% of user fixation (see Figure 17). If the images are to serve some design purpose, it seems they are currently failing. This may be due to the size of the images used, the pictorial content, or the lack of significance to the user’s task.

Conclusion

Mostly the gaze and fixation behaviour of users viewing the Home Screen is compatible with likely design objectives. The main navigation tool, the ‘search bar’, is noticed immediately and used extensively. There are however potential issues surrounding the ‘navigation bar’ and the ‘images’ shown on the Home Screen. The navigation bar is largely ignored, despite the user benefits it provides. This may be due to saliency and/or user comprehension issues. The user also fails to notice the images on the Home Screen. If they are a significant design element, their presence may need enhancing.

Result Screen Observations

The following section reviews the Result Screen and considers each area-of-interest in turn. Pertinent legibility issues are highlighted.

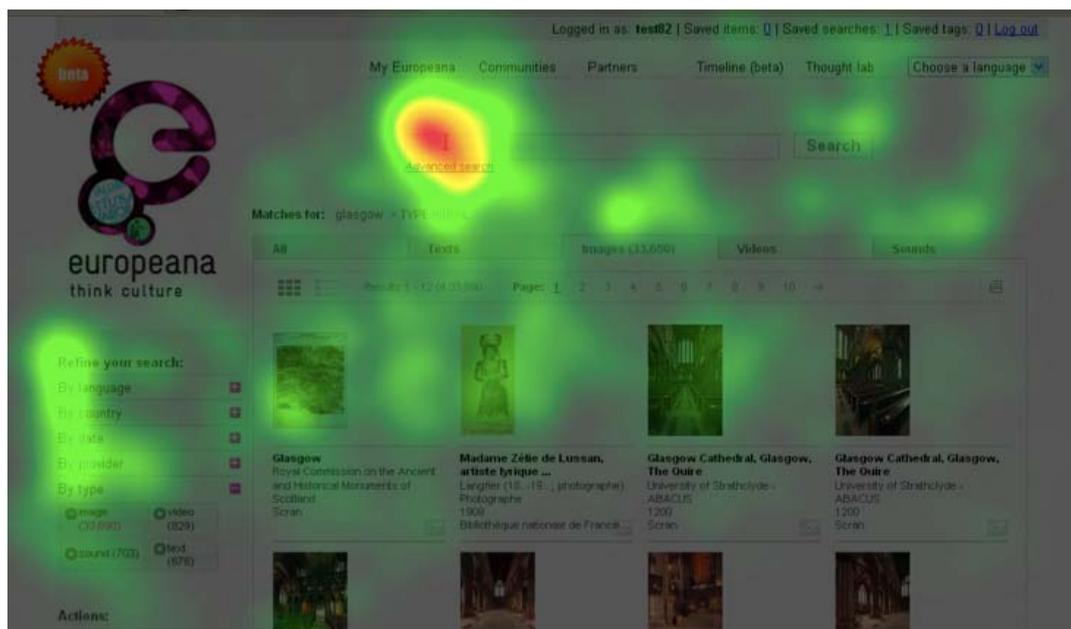


Figure 20. Heat-map visualisation of user fixation data for Europeana ‘Result Screen’

Search Bar

The heat-map shown in Figure 21 is a visualisation of fixation data for *all* Result Screens. Because of this you will notice that fixation data is occasionally off-set from the example image on which we augment heat-map data. Images that are returned are of differing dimensions and this can impact screen lay-out. However, we can see that again, there is significant fixation on the search bar. This is supported by Figure 22, which shows that the search bar accounted for 36% of all fixations.

Refined Search

The Refined Search allows further constraint of items returned. This is a powerful tool, and as we can see in Figures 21 and 22, it is a feature that is commonly employed by the users. 15% of user fixations were recorded for this Aol. In Figure 23 we can see that

this AoI was ranked highly when we consider initial gaze of the screen, suggesting that saliency of this menu is appropriate.

Logo and Logo Text

As shown in Figures 22a&b, the Europeana Logo did not draw user attention away from the more functional AoI. The Logo accounted for just 3% of user fixations when looking at the Result Screen.

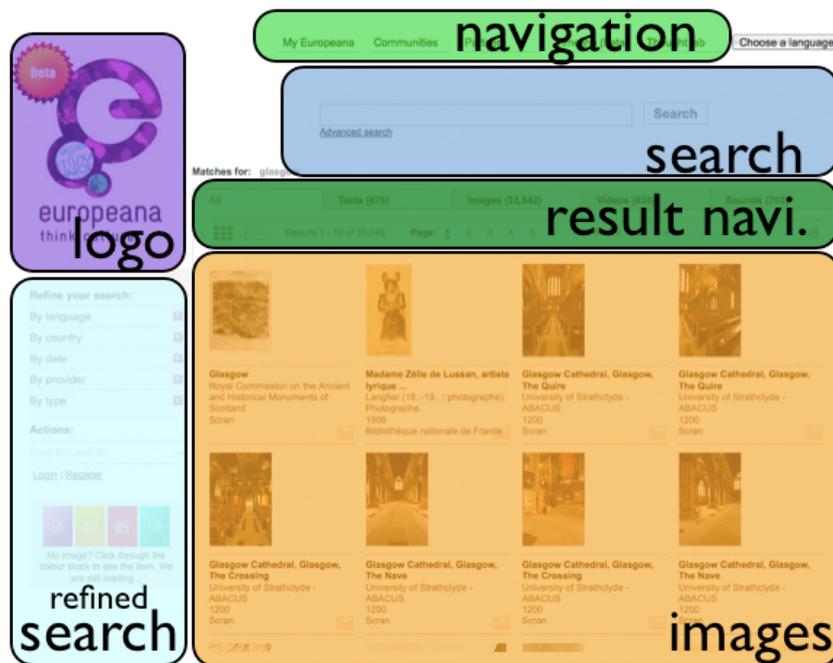


Figure 21(a). Europeana ‘Result Screen’ augmented by ‘areas-of-interest’

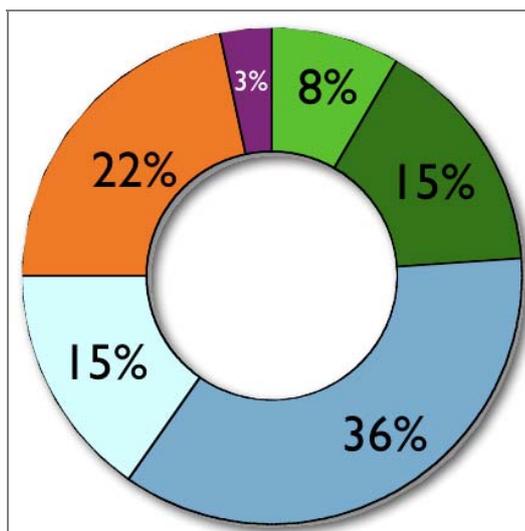


Figure 22(b). Doughnut graph showing percentage of fixation for each AoI on ‘Result Screen’

Navigation

The top navigation bar fails to grab user attention and again accounts for only 8% of user fixation (see Figures 21 and 22).

Images and Image Navigation

Given the purpose of the Result Screen, the most important Aol is where the images are returned by the search, and also the image navigation bar – which allows the user to review the results. As shown in Figure 22, between them the Image and Image Navigation Aol account for 37% of all user fixation – almost equal to the attention given to the ‘search bar’. As shown in Figure 23, it was also the Image Aol that was likely first noticed upon initial exposure.

Conclusion

The purpose of the Result Screen is to review and refine the current search, and to implement further search options. Given the equal weighting between the three results features (images, 22% of fixation; image navigation, 15% of fixations; refined search, 15% of fixations), it would appear the layout of the Result Screen is appropriately balanced. The only issue of note is the limited saliency of the top navigation bar, which again receives limited user attention.

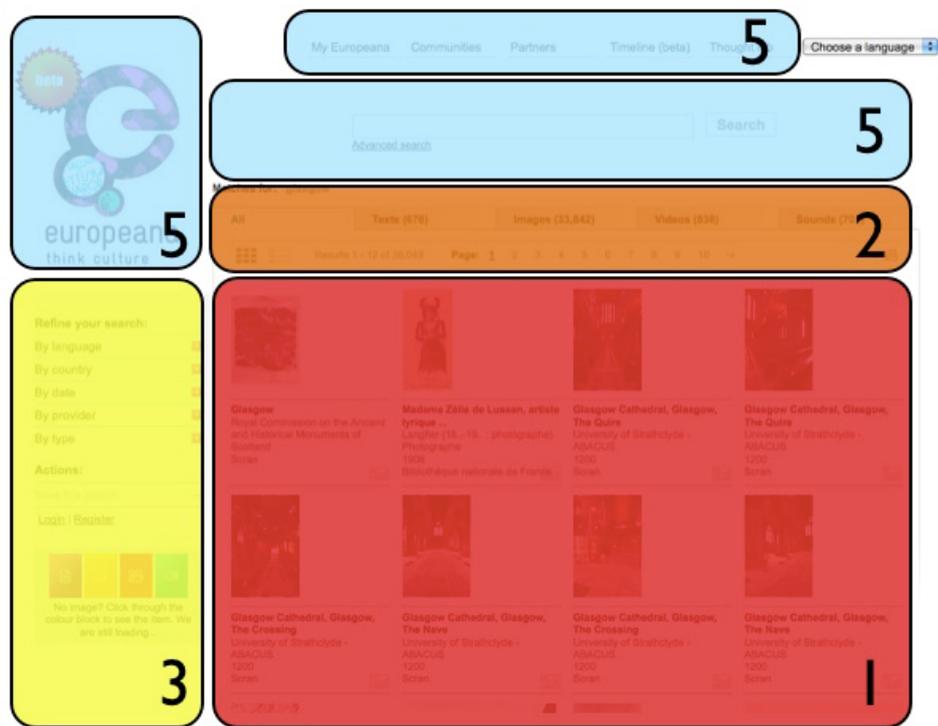


Figure 22. Aol ranked by saliency during initial exposure - Result Screen

Time Line Observations

Few participants made full use of the Time Line functionality, and as such the heat-map is much more limited than previous examples – and thus not offered here. Also, the Time Line screen often contains navigation data off-screen, requiring the user to scroll. Here we only analyse the top of the screen, and did not include data after the user initiated a scroll action. The following section reviews the use of the Time Line and considers each of the important areas-of-interest in turn. Pertinent legibility issues are highlighted.

Images

The images produced by the Time Line are the most significant, and most salient aspects of the TimeLine screen. The ‘Images Aol’ accounts for 87% of fixation data, as shown in Fig.23.

Image Navigation

To navigate through the Time Line, the user drags the navigation point across the line from left to right. They can drag the pointer back again, should they want to review previous images. If you review Figure 24 you will see that the user rarely looked at the navigation pointer – it accounts for only 2% of user fixation. Careful review of the gaze replay confirmed that the user was easily able to navigate images without continual observation of the navigation point. They would initially look to click on the marker, but then gaze only at the images as they scrolled the mouse to the right. This suggests that the image navigation tool is intuitive and easy to use, providing no issues to the user.

Conclusion

The analyses of the Time Line was limited owing to the few people who used it during the media lab session, and technical limitation of eye-tracking which meant that we could only analyse the top portion of the screen. Once the user scrolls, it is impossible for us to align fixation points and provide descriptive review of the data. However, given the limitation, we are able to show that the interaction was both easy and intuitive. The user managed to navigate the Time Line images without continual review of navigation tools.

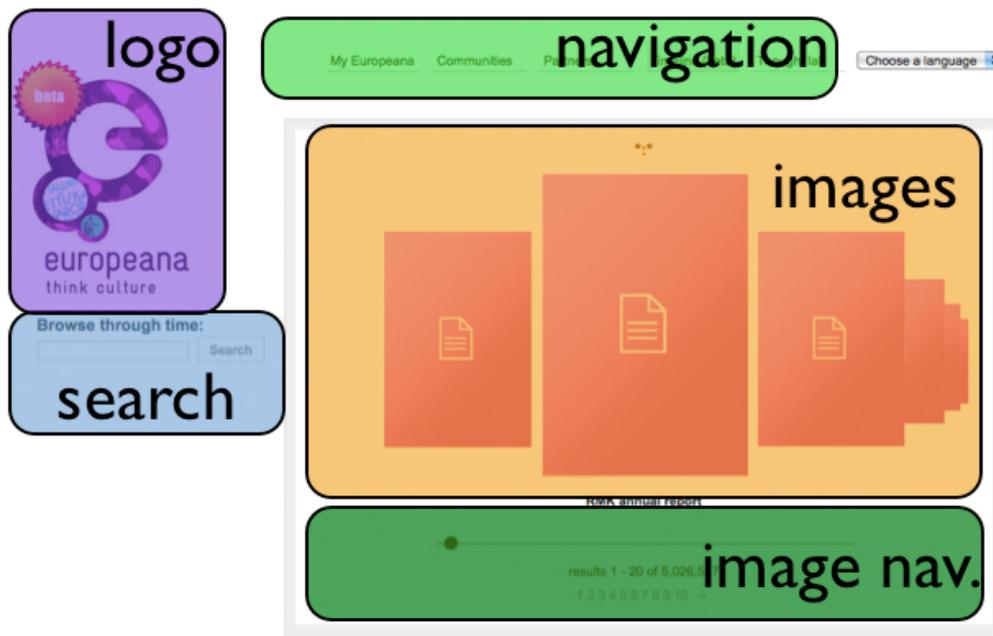


Figure 23(a). Europeana ‘Time Line’ augmented by ‘areas-of-interest’

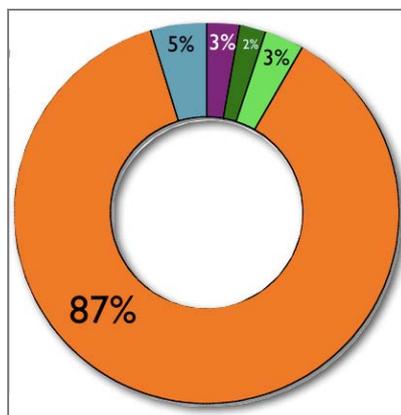


Figure 24(b). Doughnut graph showing percentage of fixation for each Aoi on ‘Time Line’

2.2.3. Analysis of search strategies

Searches used within and across groups⁵ provide an insight into how users search for material within Europeana. It is of interest to find what patterns exist within typical search behaviour (albeit in relation to a specific task in the present context) to inform how metadata related improvements might be made to improve the search functionality being offered.

2.2.3.1 Overall searches

Search terms saved in MyEuropeana for each participant in each of the focus groups and each of the media labs were collated. The total number of searches performed in each session are shown in Table 5.

Table 7. Total number of saved searches

Group	Number of participants who saved searches	Number of saved searches	Average number of searches per participant	Unique searches
Sofia focus group	11	48	4.4	7
Amsterdam focus group	12	60	5.0	28
Glasgow focus group	15	104	6.9	55
Glasgow media labs	12	97	8.1	50
TOTAL	50	310	6.2	140

A high proportion of queries were unique: in the Amsterdam and Glasgow studies approximately 50% of searches were unique, in Sofia only 14% of queries were unique, perhaps as a result of the perceived low level of relevant content. Common queries were typically single, common terms relating to the location outlined in the tasks, e.g. 'Glasgow' or 'Sofia', or compound queries directly using concepts from the provided tasks, e.g. 'Glasgow 1919'. Unique queries were attempts either to refine these broad queries, e.g. 'Glasgow sounds' or 'Amsterdam streets', or attempts to use personal knowledge to locate relevant material, e.g. for Glasgow participants used queries such as 'Black Friday riot', 'gorbals' and 'Mackintosh Charles Rennie'.

Queries were typically short: the average query length in Sofia was 1.3 terms, 1.18 terms for the Glasgow media labs, 2.1 for the Glasgow focus groups and 2.08 terms for the Amsterdam group. For the two focus groups many of the queries included the term Amsterdam or Glasgow indicating the query refinement was often limited to single term substitution.

2.2.3.2 Linguistic categorisation of searches

Searches can be categorised linguistically to develop understanding of the types of words and phrases that users of Europeana typically employ to retrieve resources. All 310 searches conducted comprised proper nouns, two-word compound nouns or phrases. No other forms of searches were used. For example, no participants searched for verbs, adjectives, abbreviations or other linguistic categories. The linguistic breakdown for each group is shown in Table 6

⁵ The participants in Fermo and the group of younger participants in Amsterdam did not save their queries but only objects and this part of the analysis is based on the rest of the groups participating in the study.

Table 8. Linguistic breakdown of saved searches

Linguistic Breakdown	Sofia focus group	Amsterdam focus group	Glasgow focus group	Glasgow media labs	TOTAL	Examples of searches
Proper nouns	41	32	67	63	203	Sofia; Royal Palace; Glasgow School of Art; Buchanan Street
Nouns	2	1	0	0	3	Palace; Marijuana
Two-word compound nouns	2	17	22	18	59	Sofia culture; coffee shop; art nouveau; Glasgow fashion;
Phrases	3	10	15	18	46	Sounds from Sophia; Amsterdam civilian perspective; Glasgow city of culture;
TOTAL	48	60	104	99	311	

Notes:

- 1) Where a search incorporated two or more linguistic types, one was counted for each category e.g. 'Bulgaria mountains' was recorded as one proper noun and one noun.
- 2) Where a search incorporated two or more examples of the same linguistic type, only one was counted for that category e.g. 'Glasgow Europe' was recorded as one proper noun search.
- 3) Where an advanced search was used e.g. subject: Glasgow AND subject: film, the Boolean operator was ignored since it was not actively included by the searcher. In this case, the term was taken as 'Glasgow film' and counted as a 2 word compound noun. Although it contains a proper noun the overall form of the search was recorded.

2.2.3.3 Non-linguistic searches

As well as the four linguistic types of search employed, date was also a frequently used search strategy. A total of 29 searches comprised, or included, dates. Date searching tended to relate to one specific element of the task, which was to find an event which took place in a specific year, although further date searches were used to investigate how a city had changed over time. The distribution of date searches was as follows: Amsterdam focus group - 9; Glasgow focus group - 10; Glasgow media labs - 10.

2.2.3.4 Advanced searches

A total of 17 Boolean searches were conducted across all groups. Examples include: 'Pere Lachaise OR La Chaise'; 'Glasgow AND school AND art'; 'Glasgow AND South Africa'; 'Glasgow AND George Square AND 191*'.

2.2.3.5 Europeana's metadata profile and observations

It is of interest to assess how search terms used within Europeana relate to the metadata scheme in use - Dublin Core (DC) – to gain an understanding of how accurately resources are being retrieved in response to searches. DC elements currently in use within Europeana are: Creator; Date; Description; Format; Identifier; Language; Provider; Publisher; Relation; Rights; Source; Subject; Title; Type..

The fifteen properties in the DC Metadata Element Set are included within Europeana, with the exception of Coverage. Europeana uses the field name `Provider` in place of `Contributor`.

Assessment of results reveals that the above fields are not used consistently for all resources, some only being catalogued using a subset. This is not entirely desirable since a consistent set of fields across all resources would improve cross-searching of materials contributed by different sources. One general observation is that the `Format` field is often used to store the same information as the `Type` field. Distinction should be sought here; otherwise it may not be necessary to include both fields. Another observation is poor quality subject cataloguing for some resources. For example, a resource entitled 'Tables of whale and sperm oil prices, 1888-1945' is catalogued with the term 'statistical tables', yet this reflects the format or type rather than the subject as the resource is not *about* statistical tables.

Proceeding to a semantic model will facilitate the development of relationships between objects and the ability to retrieve closely related materials. The success of this model, however, does depend on the existence of accurate and consistent metadata throughout the collection.

2.2.3.6 Relationship between searches and Europeana's metadata profile

In addition to the linguistic breakdown presented above, search terms can also be categorised according to elements closely relating to commonly used metadata elements. These are: Date, Event, Format, Person/People, Place and Subject.

Table 9. Common metadata elements used in searches

Metadata element	Sofia focus group	Amsterdam focus group	Glasgow focus group	Glasgow media labs	TOTAL
Date	0	9	9	10	28
Event	0	1	0	5	6
Format	1	3	8	8	20
Person/People	0	2	9	6	17
Place	47	54	97	94	292
Subject	8	16	17	19	60
TOTAL	56	85	140	142	423

Notes:

- 1) Where two or more categories were covered by a search, each was counted. For example, 'Glasgow map' was counted as one Place and one Format.
- 2) If more than one instance of the same category was used within a single search, e.g. Springburn Glasgow (i.e. two place names), only one was counted.

The above categories can be mapped to the DC elements they are most closely related to. In doing so, two questions are of interest: 1) are all search terms accommodated within DC elements in use within Europeana? 2) are there fields within Europeana that were never searched by the 310 search terms/phrases, or parts of these search terms/phrases, collated?

Table 8 shows how the searches collated align with the DC elements in use.

Table 10. Direct mapping of searches to DC elements in use in Europeana (all fifteen elements except Coverage)

Metadata element	Sofia focus group	Amsterdam focus group	Glasgow focus group	Glasgow media labs	TOTAL
Contributor/Provider					
Creator					
Date	0	9	9	10	28
Description					
Format	1	3	8	8	20
Identifier					
Language					
Publisher					
Relation					
Rights					
Source					
Subject	8	16	17	19	60
Title					
Type					

108 of 423 (26%) search elements covered the Date, Format and Subject fields.⁶ The remaining 74% of searches could be categorised as Events, Person/People and Places. The types of terms used for such searches (e.g. Bloody Friday; Van Gogh; Bulgaria) would be accommodated within the subject field if using a classification system such as Dewey Decimal. If using a less universal scheme, search terms relating to Events, Person/People and Places are commonly incorporated into a record's Title and Description fields.

It is likely therefore, that users' search success is often dependent on accurate metadata being included within the Date, Description, Format, Subject and Title fields. All search terms collated could be covered by these five fields. The remaining nine DC fields in Europeana were never targeted in these user searches. This is not to say they are not useful but it suggests that they are less relevant in terms of increasing the precision of user searches. It is recommended therefore, that, although a thorough assessment of the quality and consistency of metadata is required, it would be advisable to begin with these five key fields as a matter of priority in the immediate term. The effect will be that precision of results sets will be greatly increased.



Focal point. *The improvement of the overall quality of metadata in Europeana is substantial for the search results. Since this is a huge task dependent on multiple stakeholders, a short-term, more manageable aim would be to focus on the five key fields identified as*

⁶ Again, this study is not constructed to be statistically significant and these data have only indicative value; such analysis could be performed on a greater scale in the future.

most relevant to conducted searches (Date, Description, Format, Subject and Title).

3. Recommendations



“This could be a sort of cultural Google for anyone to look at.”

“The thing about Wikipedia is its ease of use but it’s completely illegitimate to use as a resource because it’s completely inaccurate. So if you could get this to work as easily but to be a legitimate source that takes you to places that are institutions that would be great. A really useful function that would be a great addition to academic resources online”
(Participants in the Glasgow focus group, 11 December 2009)

This section synthesises recommendations which reflect the observing of participants and their feedback. They are not necessarily expressed in the terms which the participants used, which were often more naïve, but the team did its best to capture the concerns of the users taking part in the study.

This section is organised as follows. Recommendations are made in relation to three areas – Content; Functionality/Usability; and Communication strategy. Various suggestions are listed first, clustered into groups for the convenience of the reader. A ranked list presenting the urgency of accepting and adopting recommendations is suggested. This ranking does not reflect how frequently the specific recommendation was expressed during the focus groups (the number of participants in this type of study was too low to consider such data) but is judged on the perceived severity of not acting upon the recommendation, in terms of potentially causing users to feel annoyed or distracted or deterring users from returning to Europeana in the future. Thus “short term priorities” are seen as the ones which would be addressed first; while medium- and long-term ones could be addressed at later stages.

Note, that these recommendations synthesize opinions expressed by users. They are not mapped to work which already had been undertaken by the current Europeana-related projects; also the evaluation of the feasibility of recommendations was not part of the study. These recommendations are meant to inform Workgroup 1 members in their work.

3.1. Content

3.1.1. Improve the perception of Europeana to meet user expectations

Include more information on what Europeana is, what it is intended for, and what users can (and can not) expect to find there.

Revise or present clearly the interface elements which are currently causing confusion (such as Thought Lab).

3.1.2. Thematic coverage

Address ingest of materials for predefined themes, e.g. the cities, the natural heritage, etc.

Increase amount of texts.

3.1.3. Temporal/spatial coverage

Add more contemporary materials.

Balance resource coverage of different geographical areas, in terms of representation from that area and from foreign sources.

Propose targets for more balanced resource coverage in the Content strategy.

3.1.4. Position search results more clearly (deep-shallow search results) in terms of high/low precision/recall

Increase precision and reduce recall by improving the quality and consistency of metadata and improving search algorithms.

3.1.5. Narratives / contextualisation

Create links between related materials (or implement more powerful connections through metadata).

3.1.6. Descriptions' quality and language

Improve the consistency of descriptions by implementing standardised descriptions, irrespective of source of material.

Introduce quality control at ingest (e.g. analysis of values in the metadata fields).

3.1.7. Content related recommendations: ranking

<p style="text-align: center;">Short term priorities</p>	<ul style="list-style-type: none"> • Include more information on what Europeana is, what it is intended for, and what users can (and can not) expect to find there. • Revise or present clearly the interface elements which are causing confusion (such as Thought Lab). • Add more contemporary materials. • Increase precision and reduce recall by improving the quality and consistency of metadata and improving search algorithms. • Create links between related materials (or implement more powerful connections through metadata). • Introduce quality control at ingest (e.g. analysis of values in the metadata fields).
<p style="text-align: center;">Medium term priorities</p>	<ul style="list-style-type: none"> • Balance resource coverage of different geographical areas, in terms of representation from that area and from foreign sources. • Propose targets for more balanced resource coverage in the Content strategy.
<p style="text-align: center;">Long term priorities</p>	<ul style="list-style-type: none"> • Improve the consistency of descriptions by implementing standardised descriptions, by implementing standardised descriptions, irrespective of source of material. • Increase amount of texts. • Address ingest of materials for predefined themes, e.g. the cities, the natural heritage, etc.

3.2. Functionality/Usability

3.2.1. Search

Increase transparency of results ranking. A short-term fix could be effective grouping/explanation in the results' presentation.

Improve the accuracy of metadata. To make this feasible, focus on the five key fields identified as the most frequently targeted through user-search (*Date, Description, Format, Subject and Title*).

Consider the use of specialised multimedia retrieval techniques (e.g. content-based image retrieval and music information retrieval).

3.2.2 Browse functionality

Introduce a browse mechanism to facilitate collocation of related resources and to increase the transparency of the content e.g. tag clouds, faceted browsing.

3.2.3 Filters

Ensure filters remain active on selection of a second filter.

Provide support for refinement of searches.

3.2.4 Multilinguality

Provide translations of key resources.

Translate metadata.

Apply multilingual search.

Review the quality of the translation of the interface.

3.2.5 MyEuropeana

Test what could cause a logged-in participant to be logged out.

Do not duplicate storage of the same search results within a single user profile
Introduce tools which will facilitate the USE of digital objects (e.g. copying, getting a reference to the digital and the physical object).

Introduce a service "Ask Europeana" (a query box to send questions to Europeana communities).

3.2.6 User-generated content

Young users expect this to be possible but we can not recommend it without caveats.

3.2.7 Timeline / date cloud

Integrate the timeline with other filters available for refining search results.

3.2.8 Interface

Consider versioning of the interface for novice and returning users. Returning users can see a version with smaller logo and less explanation on Europeana.

Consider the development of recommendation service.

3.2.9 Functionality recommendations ranking

<p style="text-align: center;">Short term priorities</p>	<ul style="list-style-type: none"> • Increase transparency of results ranking. • Improve the accuracy of metadata. • Ensure filters remain active on selection of a second filter. • Provide support for refinement of searches. • Integrate the timeline with other filters available for refining search results. • Provide translations of key resources. • Review the quality of the translation of the interface. • Test what could cause a logged-in participant to be logged out. • Do not duplicate storage of the same search results within a single user profile. • Introduce tools which will facilitate the USE of digital objects (e.g. copying, getting a reference to the digital and the physical object).
<p style="text-align: center;">Medium term priorities</p>	<ul style="list-style-type: none"> • Consider versioning of the interface for novice and returning users. • Consider the use of specialised multimedia retrieval techniques (e.g. content-based image retrieval and music information retrieval). • Introduce a browse mechanism to facilitate collocation of related resources and to increase the transparency of the content e.g. tag clouds, faceted browsing. • Introduce a service “Ask Europeana” (a query box to send questions to Europeana communities). • Translate metadata. • Apply multilingual search.
<p style="text-align: center;">Long term priorities</p>	<ul style="list-style-type: none"> • Consider the development of recommendation service.

3.3 Communication strategy

3.2.2 Perceptions on branding

Reduce logo size for returning users.

Define what information is required by novice users of Europeana in order to generate interest and encourage future use.

Find better ways to deliver the message that Europeana offers access to *trustworthy* resources.

3.2.3 Possible scenarios for presenting Europeana to students in secondary schools and universities

Develop scenarios which would introduce Europeana as a trustworthy specialised resource and as a unique collection of materials.

Develop scenarios to encourage young users to explore their cultural identity using Europeana.

3.2.4 Findings relevant to the modelling of profiles/personae

Define key user groups and gather data on their behaviour when using Europeana.

Consider possible use of personalisation tools.

3.2.5 Europeana and MINERVA principles on the quality of cultural web sites/sources

Use the MINERVA principles more proactively to address professional communities.

3.2.6 Communication strategy recommendations ranking

<p>Short term priorities</p>	<ul style="list-style-type: none"> • Define what information is required by novice users of Europeana in order to generate interest and encourage future use. • Reduce logo size for returning users. • Find better ways to deliver the message that Europeana offers access to <i>trustworthy</i> resources. • Define key user groups and gather data on their behaviour when using Europeana.
<p>Medium term priorities</p>	<ul style="list-style-type: none"> • Develop scenarios which would introduce Europeana as a trustworthy specialised resource and as a unique collection of materials. • Use the MINERVA principles more proactively to address professional communities.
<p>Long term priorities</p>	<ul style="list-style-type: none"> • Consider possible use of personalisation tools.