



Project Acronym: Europeana v2
Grant Agreement number: 270902
Project Title: Europeana Version 2

D1.1: Usability Report, version 2.0

Revision	2.0
Date of submission	2012-12-31
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Dissemination Level	Public

REVISION HISTORY AND STATEMENT OF ORIGINALITY

Revision History

Revision No.	Date	Author	Organisation	Description
Draft	2012-10-03	David Haskiya	Europeana Foundation	Draft for review by the Work Package Leader Anne Marie van Gerwen
1	2012-10-05	David Haskiya	Europeana Foundation	
2	2012-12-31	David Haskiya	Europeana Foundation	

Statement of originality:

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

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Background

At Europeana we're continuously working with improving the quality of our products. During 2012 the focus of the portal development has been to improve both the user-friendliness and search-engine friendliness of the portal.

In the first half of 2012 there were no fundamental changes made to the design and interaction established in the earlier October 2011 update of the portal. However a number of features were [added](#): Improved relevancy ranking of results, Display of images in a lightbox, Cite on Wikipedia, Map search and display, and Display and filtering of 3D-content and user-generated content.

In the second half of 2012 the focus of the portal development has been to make it possible to display metadata modeled according to our new Europeana Data Model (EDM) and to improve the user-friendliness for users accessing the portal via a smart-phone or tablet. By analyzing the results of the October 2011 release we also wanted to further reinforce the many successful aspects of that re-design effort.

Our goal with this re-design effort was not only to *improve the user experience of the portal* but also *improve our product development process* concerning user experience and usability.

Usability as part of User Experience Design (UX)

While this report uses the word Usability in its title Europeana acknowledges and sees usability as one discipline within the larger field of User Experience Design. Many other specialist disciplines are involved and needed in order to shape a web product to meet user needs.

The Six Core Disciplines of User Experience



Fig 1. Graphic by Thomas Yung showing the Six Core Disciplines of User Experience.

Our UX-strategy

The Europeana office lacks employees with formal training in all the disciplines involved in UX. Even so our strategy is to always try to cover the full spectrum of UX when developing major new features or products. This leaves the Europeana office dependent on external consultants in its UX-design efforts.

To mitigate this dependency the strategy we've adopted is to:

1. Train Europeana staff in UX

The aim is to improve Europeana's institutional UX-capacity and make UX-design and integral design of our work processes.

2. Augment Europeana's UX resources as early as possible in the design process

The aim is to ensure that mistakes and weaknesses in UX-design are identified as early as possible in the design process. Doing this will avoid expensive feature changes of the portal late in the development process.

Procuring external interaction design and usability consultants

Interaction design consultant

The Europeana Foundation had already contracted an interaction designer consultant for the re-design of the European Library portal and we extended his contract to include also the interaction design of Europeana 1914-1918 and the Europeana Portal.

Low-fidelity wireframes were produced for all portal pages (landing page, result page grid, result page timeline, result page map, item display page, and portal static pages) and these in both typical desktop and mobile screen resolutions. These wireframes were finalized in June.

The interaction design work is already encompassing features that won't be released until after the 2.0 release.

Contracting usability and user research consultants

In Europeana 2.0's Work Package 1 45 000 euros has been set aside to contract an external usability consultancy company (see Description of Work p. 41).

Request for proposals for usability consultancy

Based on our strategic goals for UX a request for proposals was created. The request put the emphasis on the consultants augmenting our small internal UX-resources and to train Europeana staff in UX-design.

Specifically the tender asked for the usability consultants to provide the following:

- Provision of in-depth UX training over four days of workshops
- Production of material to help conduct testing more efficiently, including:
 - Best practice methodologies for recruitment and panel maintenance
 - Guidelines on how to create scenarios

- Creation of user testing templates
 - Creation of reporting templates
- Conduct surveys with the following stakeholders:
 - Survey with Europeana end users
 - Survey with API developers
- Conducting expert reviews on various Europeana applications, wireframes, prototypes and functions

The invitation to tender was published April 19. Maximum budget was set to 30 000 euros and contract length from *July 2012 – June 2013* with the possibility to extend the contract to February 2014.

Received proposals, evaluation and selection

The deadline for submitting proposals was set to May 18. We received eight proposals. The proposals were evaluated according to the following criteria:

- Experience in user-oriented evaluation of interactive information retrieval systems
- Experience of light-weight usability testing early in the development cycle
- Experience of usability evaluation of mobile and tablet adapted sites
- Experience of online surveys
- Experience of multi-lingual retrieval
- Experience in usability training
- Understanding of the issues relating to web access of cultural heritage and to online search
- Best value for money
- Realistic budget and realistic roadmap

The evaluation resulted in our selection of [User Vision](#) as the usability consultant in Europeana 2.0.

Design, development and testing process for the portal 2.0 release during 2012

Here follows an overview of the various stages in the process leading up to the release (dubbed 2.0) of a new Europeana portal in January 2013. The multiple stages of the process serve to refine the requirements and designs, continually evaluate and test them and in parallel with the testing implement the designs into a new working portal.

Portal Product Requirements Document and Mock-ups

Based on benchmarking, analyses of previous user testing and analyses of usage logs David Haskiya (Product Developer) drafted a Product Requirements Document for the portal. Based on this draft requirements were prioritised and refined together with Anne Marie van Gerwen (Marketing and Communications Manager).

Simple mock-ups visualizing the requirements were created by David Haskiya and Dean Birkett (Webmaster).

Wireframes and HTML-mockups

Based on the requirements and mock-ups lo-fidelity wireframes were produced by our contracted Interaction Designer Dan Barker. The wireframes were focused around a new, improved portal layout that will also function well on mobile devices.

Participating from Europeana was David Haskiya, Dean Birkett, Dan Entous (Front-end Developer) and Andrew Maclean (Front-end Developer).

In parallel to the creation of wireframes simple HTML-mockups of the portal were created by Dean Birkett.

Annotated medium fidelity screens

Based on the prior work annotated medium fidelity screens suitable for heuristic review and online user testing were produced. The screens represent desktop and mobile versions of all the main portal pages: the landing page, the search result page, and the item display page.

First heuristic review

In late July and early August 2012 User Vision performed expert reviews testing the screens against [best-practice usability heuristics](#) and their considerable experience in designing and evaluating web products. The review reports show both the identified strong aspects of the designs and the weaknesses. Weaknesses are classified according to Low, Medium or High negative impact and suggestion included on how to eliminate those weaknesses.

The results of the first heuristic reviews showed that the new design was fundamentally strong, but identified a number of weaknesses. This resulted in updated designs mitigating the identified weaknesses.

Online user testing

The updated designs (of the same three screens as in the first heuristic review) were used as the basis for online testing by users. The purpose of the online user testing was to gain *quantitative data* to base design decisions on. Using the online testing service [Verify](#) each test typically resulted in about 50-100 responses.

Further weaknesses in the new designs were identified. Rather than update the design screens these weakness have been handled directly in the development of the first fully working prototype portal (see below)

A general weakness concerning language settings and translation of results was also identified. Fixing this was judged as out of scope for the 2.0 release and is planned to be tackled in a later update of the portal (and in cooperation with the multi-lingual services experts of Europeana 2.0 WP7).

Internal prototype portal

User testing

User testing of the portal commenced on October 10 (i.e. before the preview portal became publically available). In contrast to the online user testing, this testing aims to gather

qualitative data on the usability and general attractiveness of the updated portal UX to base design decisions on.

Five test users, representing non-professional and professional end-users both, were invited to attempt to accomplish realistic tasks as part of a test scenario. During the test a test facilitator (David Haskiya) was by the user's side through-out as well as a test observer (Dean Birkett) who noted down the reactions and responses of the users. All tests were carried out using the same test scenarios (see Appendix V).

Again the testing worked as intended: identifying further weaknesses. Most of these have been fixed as part of the iterative development of the portal. Others will have to be dealt with in smaller follow-up releases as they require user research, design efforts and time beyond what is available for the 2.0 release.

Unlike the more quantitative testing these tests also helped clarify user's subjective expectations and impressions of the portal. The testing confirmed that the updated m

It also helped us to get insight into what features that the portal currently does not have that the users miss. One very clear example of a missing feature is that the test users all wished for an easier and clearer way to download content directly from the portal. This confirms the results of previously carried out user surveys indicating that such a download feature is the "most wanted".

Public 2.0 preview portal

The [prototype portal](#) was released on October 23 for a period of public testing that will continue to mid January. During the preview a second round of heuristic testing was performed and users were asked to provide structured feedback via online surveys.

Second heuristic review

Based on the prototype portal a second expert heuristic reviews were performed by User Vision. No high impact issues were identified but lower impact issues were. Some lower impact issues have been fixed prior to release whereas others will be planned in to follow-up development and releases.

User surveys

During the preview period three user surveys have been published where we ask our users to provide us structured feedback on different aspects of the portal. Each survey comprised about 8-12 questions. For each survey we received about 20 responses.

The three surveys were focused on the following aspects:

1. Performance and functionality on mobiles and tablets

The results of this survey indicated that our users considered the new portal to be good or excellent and very clearly superior (especially for tablets) to the current portal. Performance (speed) was rated as average only which has resulted in a strong focus from on optimising performance prior to the release in January.

Direct download of content and the ability to directly play audio and video content on your mobile device was clearly rated as the top most wanted missing feature.

2. **The layout, design and content on the landing page**

A majority of users rated the new layout and navigation overall as either good or excellent and as an improvement compared to the current portal. More worryingly however the survey results indicated that the new navigation may be seen as a step back from the current portal. Of note is also that a vocal minority of users clearly indicated that they would prefer a much simpler landing page and that Europeana's social media presences were overly emphasized in the interface.

The results concerning navigation will necessitate further user research and usability testing of the site during 2013 in order to direct any changes to the navigation.

3. **The search functionality and display of search results and items**

A very clear majority of the users rated the search functionality of the new portal as an improvement compared to the current and 80% of the users rated the ease of use and performance (speed) as good or excellent. The one small note of caution relates to the new auto-completion feature where a small minority of users rated its performance and relevance of suggestions as bad.

Example user survey questions are added to Appendix IV.

Portal 2.0 release

The production release is now scheduled for mid-January. The main reason for delaying the launch of the new portal to January is because the timing is better from a marketing perspective.

Usability training and user testing materials

As part of the strategy to improve our institutional UX capacity Europeana staff has been receiving and will continue to receive training in UX.

During 2012 the following training activities have taken place:

- David Haskiya attended a four-day [UX Intensive workshop](#). The workshop was organised by one of the world's leading design agencies Adaptive Path.
- As part of the usability consultancy European staff has received training from User Vision in usability best practices in the form of a two day workshop. A second two day workshop will be held January 22-23.
- Dean Birkett (Webmaster) attended the [Inspire conference on web design](#) and an [Accessibility workshop](#) held as part of the conference.

User Vision has also delivered user testing materials in the form of templates and examples test materials to improve our internal capacity. The materials and training have been and will continue to be put in use in the development and testing of the portal and other Europeana websites.

Usability and the Product Development Process

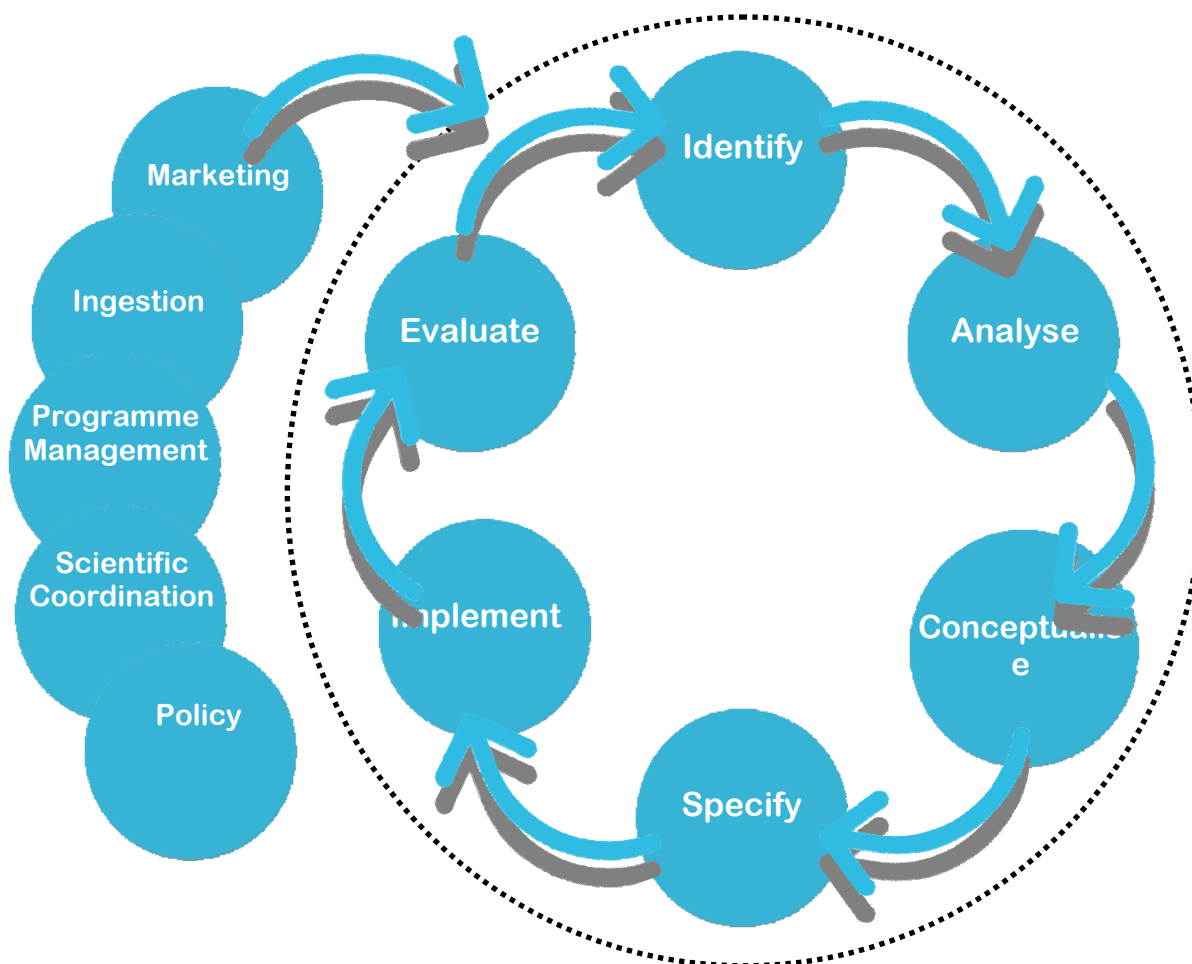
As we move forward from the Europeana 2.0 release we can do so not only from the position of an improved technical platform, but also as an organisation better able to integrate UX practices into our continuous development cycle. As an institution and as professionals in the field we're also better equipped to meet the goal of improving the user experience for all the users of our products and websites.

In all future development of end-user products expert reviews, online user testing and "live" user testing will be integrated into nearly all phases of the process. See Appendix I.

APPENDIX I: The Product Development Process

The phases of the process

The product development process involves nearly all internal Europeana teams and via some of the teams also the wider Europeana network.



As with all diagrams this one is a simplification of reality. Progression is not always from one phase to another, there are many oscillations back and forth between phases, and the phases are not entirely discrete from each other.

Short description of each phase

Identify: This is the phase where new or changed functions and features are identified. These can be based on *feedback from users*, *testing by users*, or desktop research and best practices benchmarking. As with all idea generation the process is fuzzy.

Analyse: In this phase the identified desired changes are more formally analysed. Depending on the magnitude and nature of the desired change in product different methods of analysis are suitable. Analyses can take many forms e.g. investigating similar solutions made by

others, collecting and analysing market data, performing SWOT-analyses etc. Many ideas are discarded at this stage as unsuitable or undesirable for Europeana.

Conceptualise: In this phase a solution for Europeana is conceptualised by the creation of short user scenarios, user epics/stories and mock-ups. These form the basis for initial discussion on how to best move a product change forward in the process. For major changes this phase may include paper prototyping or *online testing by users* e.g. A/B-tests. Some ideas are discarded at this stage as unsuitable or undesirable for Europeana.

Specify: In this stage of the process detailed user scenarios, user stories and UX-specifications are produced in dialogue between the product owners and the development team in order to initiate technical development. In this phase the evaluation method of the product post-launch should be defined. The phase may include *testing by users* and *online testing by users*.

Implement: This is the technical development phase where products are modified or first developed. The phase may include *testing by users*.

Evaluate: Post-launch of modified or new products their success is evaluated. Methods of evaluation vary with the nature of the product. The phase may include *testing by users* and the results of the evaluation may lead to the identification of changes in the product (thus closing the circle).

APPENDIX II: Examples of heuristic review result and recommendations

Item display page (mobile) - review

Landing page (mobile) – Icon usage



Icons unclear (M)

The use of icons here presents similar potential problems to their presentation on the non-mobile landing page.

However, whereas that page had text labels to remind users of the meaning of some of the less decipherable icons, here the labels have been removed due to screen space and button target area limitations.

Recommendation: Implement the icon changes recommended for the non-mobile version of this page.

Remove the 'Tag item' label and icon, leaving this row in the interface blank.

Re-format the input box so that it uses the full width of the screen.

Re-position the '+ Add' button so that it is much wider and directly underneath the input box.

Change its label to read 'Add tag'.

Portret van Jacob Maris



View



View item at [Rijksmuseum](#)



Tag item

Enter tags

+ Add

Interface targets too small and of limited value (M)

The 'view' and 'download' links are likely to be too small to be selectable by users of small touchscreen devices. Furthermore, they are likely to be of limited, if any, value on these devices. Expanding the view is unlikely to be practical on a small screen device.

The 'download' icon is also unlikely to be of use here. Most touchscreen device users will be aware of system functionality to enable them to download images such as holding one finger on the image or tapping with two fingers to reveal a contextual menu with the option.


Recommendation: Remove both icons.

Item display page (mobile) – recommendations


Object page (mobile) – Mock-up suggestion







Portret van Jacob Maris



○ ● ○ ○ ○ ○ ○ ○ ○ ○

 PUBLIC DOMAIN

[View item on Rijksmuseum site](#)


Enter tags

[Add tag](#)

Simplified carousel layout
The redundant control overlays and the icons originally located beneath the image have been removed. The 'dot' system to help users identify where this image lies in the available series is also employed here.

Revised icons
The icons used here are consistent with the suggested non-mobile Object page revisions. These should be more easily recognised in this context.

Revised 'tag item' layout
The label and icon have been removed and the input box and button expanded to facilitate selection on small touchscreen devices.

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APPENDIX III: Example of online click test

← Back to Linked Test

Share results

Click Test Report

PDF

Summary | Raw Data

Logged in as David Haskys | Saved items 234 | Saved searches 213 | Saved Tags 323 | Log out | Choose language ▼

Search all fields | Matthijs Maris | Search | Help ?

Return to search results < Previous Next >

Portret van Jacob Maris

Creator: [Maris, Matthijs](#)

Date: derde kwart 19e eeuw ; 1857 - 1857

Type: schilderij

Subject: Maris, Jacob

Description: Portret van Jacob Maris op twintigjarige leeftijd, de broer van de schilder. Alleen het hoofd, naar links omhoogkijkend

Data provider: Rijksmuseum

Provider: Rijksmuseum | Netherlands

Identifier: SK-A-4877; RM0001 COLLECT.5

Format: drager: breedte 33 cm ; drager: hoogte 40 cm ; hout ; image/jpeg ; olievert. ; papier

Language: nl

Publisher: Rijksmuseum, Amsterdam

See more details ▾

Translate details

Choose a language ▼

Similar items

53
VIEWS

43
RESPONSES

27
TESTER DATA

Test Instructions

You want to share your search result with a friend - where would you click?

Filter Test Results

Click Speed	Country	Age
All	All	All
< 5 seconds	Estonia	21-24
< 10 seconds	Germany	25-29
> 10 seconds	Greece	30-39
	Hong Kong	40-54
	Japan	55-64
	Poland	> 65
	Spain	Gender
	The Netherlands	All
	United Kingdom	Male
	USA	Female

Test Details

Test Instructions

You want to share your search result with a friend - where would you click?

Created by Dean Birkett

APPENDIX IV: Examples of user survey questions and results

Survey 1

Question 6

Is the experience for mobile/tablet users better on the preview portal than on the current portal?		
Answer Options	Response Percent	Response Count
Yes	81,3%	13
No	18,8%	3

Question 7

How would you rate the following when browsing the preview of the new Europeana portal from a mobile or tablet device?							
Answer Options	Very Bad	Bad	Average	Good	Excellent	Rating Average	Response Count
Speed	0	1	8	6	1	3,44	16
Ease of use	0	0	7	9	0	3,56	16
Readability of text	0	0	1	10	5	4,25	16
Overall experience	0	0	5	11	0	3,69	16
<i>answered question</i>							16

Survey 2

Question 2

Compared to the current version of the portal, do you think the homepage is an improvement?		
Answer Options	Response Percent	Response Count
Yes	75,0%	21
No	25,0%	7

Question 7

Overall, how would you rate the new design?							
Answer Options	Very bad	Bad	Average	Good	Excellent	Rating Average	Response Count
	0	3	5	17	3	3,71	28
<i>answered question</i>							28

Survey 3

Question 2

Compared to the current version of the portal, do you think the search functionalities have been improved?		
Answer Options	Response Percent	Response Count
Yes	100,0%	19
No	0,0%	0
If no, please specify why		1
<i>answered question</i>		19
<i>skipped question</i>		0

Question 5

How would you rate the following when searching on the new Europeana portal?							
Answer Options	Very Bad	Bad	Average	Good	Excellent	Rating Average	Response Count
Ease of use	0	0	3	14	2	3,95	19
Search filters (titles, creators, etc.)	0	0	4	12	2	3,89	18
Response time of auto suggestions	1	2	3	9	4	3,68	19
Relevance and accuracy of auto suggestions	0	2	4	10	3	3,74	19
Response time to receive your search results	0	0	2	9	7	4,28	18
Other (please specify)							1
<i>answered question</i>							19

APPENDIX V: Scenarios for user testing

Test scenario 1

You're the blog editor of a classical music society and you're planning to write a blog post about Mozart. For this you're looking for:

1. An image of Mozart, to display in full size in your blog
2. Music by Mozart, a sound file that you can download and display in your blog

Use Europeana to search and find an image of Mozart and a sound file of his music. Download them to your computer for re-use on your blog.

Test scenario 2

A friend forwarded you the Europeana newsletter, highlighting the new sports exhibition. You've since then lost the email and the link, but now you want to visit Europeana, the sports exhibition and also sign up to the newsletter to not miss any news in the future.

Test scenario 3

You're a Art History student and you and another student are planning to write a paper on the art and life of Vincent van Gogh. A painting you're especially interested in for your paper is his painting of blooming almond blossoms. You've googled for information about the painting and found it in Europeana,
<http://acceptance.portal2.eanadev.org/portal2/record//92034/ED8ADCF6A82047D627E521AD4B5BEE0DAEB9DB8B.html>

Use Europeana to translate the description of the painting into Dutch (or your preferred language), mail a link of the item to your co-author and then try to find more paintings by van Gogh in Europeana.