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## Expert review results

10 Most Wanted evaluation

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# 1. Background

The 10 Most Wanted project develops a game-based approach to crowd-sourcing aspects of curatorial research concerned with the discovery and verification of previously undocumented facts about collection items. The technical platform for the project is a custom-built website at [10most.org.uk](http://10most.org.uk) (the website). It is used to promote the 10 Most Wanted project, to recruit players, to set challenges and to document the results of the game. As such, it plays a key role, both in terms of publicising the project and in terms of providing an operational platform for it.

This document reports on a formative evaluation of the website. It is based on a **heuristic evaluation of the website by HCI experts**. The aims of the evaluation are to inform the on-going iterative design and development of the game and website and help towards answering research questions in the project relating to engagement, IPR and informed consent.

# 2. Instrument

The expert evaluation is based on Travis' (2009) standard instrument for the heuristic evaluation of web sites, which in its original version includes 247 web usability guidelines covering a wide range of design aspects:

- Home page usability
- Task orientation
- Navigation and Information Architecture
- Forms and data entry
- Trust and credibility
- Writing and content quality
- Page layout and visual design
- Search usability
- Help, feedback and error tolerance

Source: Travis (2009)

As Travis' (ibid) instrument was developed primarily for the evaluation of e-commerce websites and before smartphones and tablet computers became ubiquitous, it was adapted to better suit the evaluation of the 10 Most Wanted website. This included removing design guidelines not relevant for the use context of the website and adding design guidelines relating specifically to the requirement of multi-platform support. The resulting evaluation instrument includes a total of 154 design guidelines covering nine design aspects (see Appendix A1).

The instrument is implemented as a spreadsheet document in order to provide automatic scoring functionality across different design aspects. It uses an industry standard format (*Microsoft Excel*) in order to ensure that evaluators can use the instrument without encountering compatibility problems.

The spreadsheet document contains eleven pages (sheets) in total:

- *Sheet 1*  
Instructions on how to fill in the evaluation instrument
- *Sheet 2*  
Summary and results, automatically generated from answers in sheets 3-11
- *Sheets 3-11*  
List of heuristics grouped by design aspects. Next to each heuristic is a form field for participants to enter a numeric value indicating the website's compliance with the heuristic (-1 = does not comply; 1 = complies; 0 = kind of complies) and a text field for open comments. Participants were instructed to leave the fields blank if they felt a guideline was not relevant.

The spreadsheet document was emailed to participants and after completion sent back to the investigator for aggregation and analysis.

## 3 Sampling

Heuristic evaluation (Nielsen, 1989; Nielsen and Molich, 1990) is a discount usability evaluation method involving evaluators inspecting a system against a set of design heuristics. Heuristic evaluations can involve lay people (e.g. users of the system) or experts (e.g. developers and HCI experts), in which case it is commonly called an *expert evaluation*.

Based on the experience that individual evaluators find on average between 20 and 51% of usability problems, Nielsen and Molich (ibid) hypothesised, and empirically proved, that aggregated evaluations from three to five evaluators find on average 85% of usability problems (ibid). These numbers have since been confirmed repeatedly (e.g. Nielsen, 2000; 2012).

In line with this widely accepted recommendation, the present evaluation aggregates findings from five experts, including three HCI experts and two web developers. The evaluations were carried out between 3 March and 14 May 2014.

## 4. Results

### 4.1 Combined scores

Table 1 shows combined scores from five expert evaluators for each design aspect. Columns are explained below:

- *Raw score*  
Sum of scores for each design aspect. Note that a raw score can be negative if there are more heuristics the website fails to comply with than heuristics it complies with.
- *#Questions*  
Total number of heuristics for each design aspect.
- *#Answers*  
Number of scored heuristics for each design aspect. This is the total number of heuristics minus the number deemed not relevant by the evaluator.

- Score**  
 Percentage score for each design aspect calculated as  $(\text{Raw score} + \# \text{Answers}) / (2 * \# \text{Answers})$  in order to get a range from 0-100% with 0% meaning the website complies with none of the (relevant) heuristics and 100% meaning the website complies with all (relevant) heuristics.

Aspect	Raw score	# Questions	# Answers	Score
Home Page	5.6	17	16.8	67%
Task Orientation	11.8	20	20	80%
Navigation & IA	12.2	22	21.2	79%
Forms & Data Entry	5.2	12	11.6	72%
Trust & Credibility	3.6	12	11.6	66%
Writing & Content Quality	10	15	15	83%
Page Layout & Visual Design	18.2	28	28	83%
Multi-Platform Support	-4.4	16	10.6	29%
Help, Feedback & Error Tolerance	1.6	12	6.8	62%
<b>Overall score</b>		<b>154</b>	<b>141.6</b>	<b>69%</b>

Table 1: Combined scores from five evaluators

Figure 1 provides a visualisation of these results in the form of a star diagram mapping design aspects to compliance dimensions.

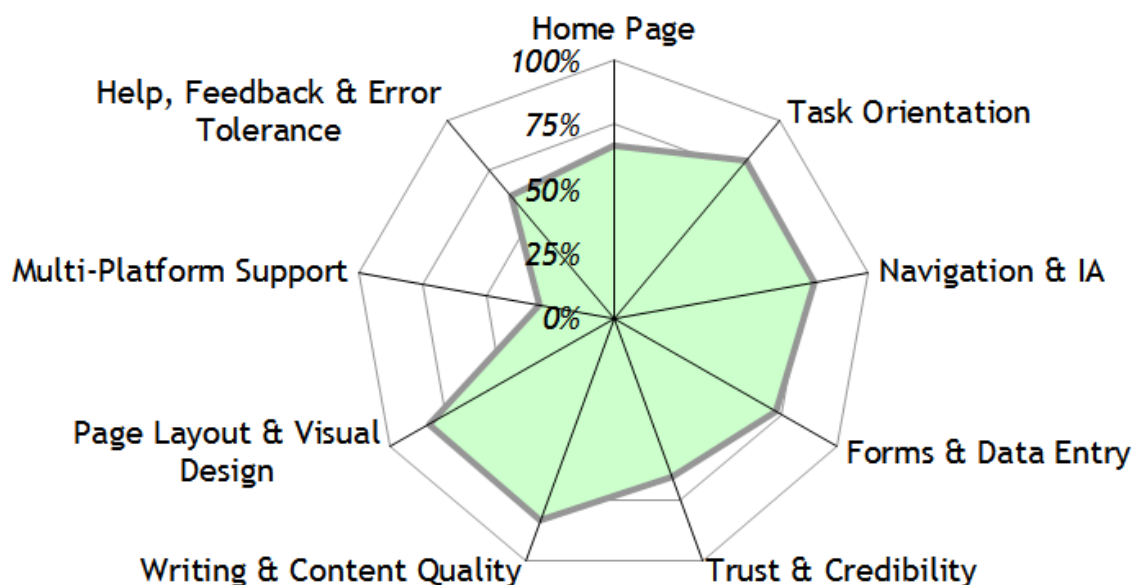


Figure 1: Star diagram based on combined scores from five evaluators

## 4.2 Scores per heuristic

This section provides detailed scores on a per-heuristic basis. Raw scores from each evaluator were combined resulting in possible values ranging from -5 (all evaluators agree that the website does not comply with the heuristic) to +5 (all evaluators agree that the website complies with the heuristic). Scores were matched to percentages by adding 5 to the raw score and dividing by 10.

The following sections are colour coded to increase readability and support interpretation and prioritisation by the development team. Colour codes indicate the website's compliance level with specific heuristics:

Score of 3 or higher	80-100% compliant
Score of 1 or 2	60-70% compliant
Score of 0	50% compliant
Negative score	0-40% compliant

### 4.2.1 Homepage

The items on the home page are clearly focused on users' key tasks ("featuritis" has been avoided)	2	70%
The home page contains a search input box	-4	10%
Categories for open/closed/cold cases are provided and clearly visible on the homepage	3	80%
Useful content is presented on the home page or within one click of the home page	5	100%
Links on the home page begin with the most important keyword	3	80%
The value proposition is clearly stated on the home page (e.g. with a tagline or welcome blurb)	2	70%
The home page contains meaningful graphics, not clip art or pictures of models	4	90%
Navigation choices are ordered in the most logical or task-oriented manner (less important information last)	2	70%
The title of the home page will provide good visibility in search engines like Google	0	50%
All partner information is grouped in one distinct area (e.g. "About Us")	0	50%
Users will understand the value proposition	0	50%
By just looking at the home page, the first time user will understand where to start	0	50%
The home page shows all the major options	4	90%
The home page of the site has a memorable URL	2	70%
The home page is professionally designed and will create a positive first impression	1	60%
The design of the home page will encourage people to explore the site	0	50%
The home page looks like a home page; pages lower in the site will not be confused with it	3	80%

#### 4.2.2 Task Orientation

The site is free from irrelevant, unnecessary and distracting information	4	90%
Excessive use of scripts, applets, movies, audio files, graphics and images has been avoided	5	100%
The site avoids unnecessary registration	4	90%
Information is presented in a simple, natural and logical order	3	80%
The site requires minimal scrolling and clicking	4	90%
Users can complete common tasks quickly	3	80%
Items can be compared easily when this is necessary for the task (e.g. object / case comparisons)	1	60%
Important, frequently needed topics and tasks are close to the top/centre of the page	5	100%
The path for any given task is a reasonable length (1-3 clicks)	5	100%
The site's terms and conditions are is easy to find, especially on pages that ask for personal information	2	70%
The site's terms and conditions are simple and clear	3	80%
Users of the site do not need to remember information from place to place	2	70%
The use of metaphors is easily understandable by the typical user	1	60%
Details of the site's internal workings are not exposed to the user	4	90%
The site caters for users with little prior experience of the web	3	80%
A typical first-time visitor can do the most common tasks without assistance	2	70%
Important calls to action, like 'Take part in the search', are highly visible	2	70%
Command and action items are presented as buttons (not, for example, as hypertext links)	4	90%
The site is robust and all the key features work (i.e. no javascript exceptions, server errors or broken links)	4	90%
The site supports novice and expert users by providing different levels of help	-1	40%

#### 4.2.3 Navigation and Information Architecture

There is a convenient and obvious way to move between related pages	5	100%
It is easy to return to the home page from other pages	3	80%
The information that users are most likely to need is easy to navigate to from most pages	4	90%

Navigation choices are ordered in the most logical or task-oriented manner	2	70%
The navigation system is broad and shallow (many items on a menu) rather than deep (many menu levels)	5	100%
The site structure is simple, with a clear conceptual model and no unnecessary levels	4	90%
The major sections of the site are available from every page (persistent navigation), there are no dead ends	5	100%
There is a site map that provides an overview of the site's content	-3	20%
The site map is linked to from every page	1	60%
The site map provides a concise overview of the site, not a rehash of the main navigation	-1	40%
Good navigational feedback is provided (e.g. showing where you are in the site)	1	60%
Category labels accurately describe the information in the category	1	60%
Links and navigation labels contain the "trigger words" that users will look for to achieve their goal	3	80%
Terminology and conventions (such as link colours) are (approximately) consistent with general web usage	5	100%
Links look the same in the different sections of the site	4	90%
The terms used for navigation items and hypertext links are unambiguous and jargon-free	3	80%
There is a visible change when the mouse points at something clickable (excluding cursor changes)	2	70%
Important content can be accessed from more than one link (different users may require different link labels)	2	70%
Hypertext links that invoke actions (e.g downloads, new windows) are clearly distinguished from hypertext links that load another page	3	80%
The site does not disable the browser's "Back" button and the "Back" button appears on the browser toolbar on every page	5	100%
Clicking the back button always takes the user back to the page the user came from	4	90%
Menu instructions, prompts and messages appear on the same place on each screen	5	100%

#### 4.2.4 Forms and Data Entry

Field labels on forms clearly explain what entries are desired	1	60%
Text boxes on forms are the right length for the expected answer	4	90%
There is a clear distinction between "required" and "optional" fields on forms	3	80%
Questions on forms are grouped logically, and each group has a heading	3	80%
Fields on forms contain hints, examples or model answers to demonstrate the expected input	0	50%



Pull-down menus, radio buttons and check boxes are used in preference to text entry fields on forms (i.e. text entry fields are not overused)	3	80%
With data entry screens, the cursor is placed where the input is needed	1	60%
Forms allow users to stay with a single interaction method for as long as possible (i.e. users do not need to make numerous shifts from keyboard to mouse to keyboard).	4	90%
Text entry fields indicate the amount and the format of data that needs to be entered	0	50%
Forms are validated before the form is submitted	4	90%
The site makes it easy to correct errors (e.g. positioning the cursor in the field where correction is required)	0	50%
Labels are close to the data entry fields (e.g. labels are right justified)	3	80%

#### 4.2.5 Trust and Credibility

The content is up-to-date, authoritative and trustworthy	2	70%
The site contains third-party support (e.g. citations, testimonials) to verify the accuracy of information.	1	60%
It is clear that there is a real organisation behind the site (e.g. there is a physical address or a photo of the museum)	-3	20%
The project comprises acknowledged experts (look for credentials)	-2	30%
The site avoids advertisements, especially pop-ups.	5	100%
The site avoids marketing waffle	2	70%
Each page is clearly branded so that the user knows he is still in the same site	5	100%
It is easy to contact someone for assistance and a reply is received quickly	-1	40%
The content is fresh: it is updated frequently and the site includes recent content	4	90%
The site is free of typographic errors and spelling mistakes	5	100%
The visual design complements the brand and any offline marketing messages	0	50%
There are real people behind the project and they are honest and trustworthy (look for bios)	0	50%

#### 4.2.6 Writing and Content Quality

The site has compelling and unique content	4	90%
Text is concise, with no needless instructions or welcome notes	5	100%
Information is organised hierarchically, from the general to the specific, and the organisation is clear and logical	4	90%

Object pages contain the detail necessary to take part in the investigation	3	80%
Sentences are written in the active voice	2	70%
Pages are quick to scan, with ample headings and sub-headings and short paragraphs	3	80%
Each page is clearly labelled with a descriptive and useful title that makes sense as a bookmark	2	70%
Links and link titles are descriptive and predictive, and there are no "Click here!" links	4	90%
The site avoids cute, clever, or cryptic headings	3	80%
Link names match the title of destination pages, so users will know when they have reached the intended page	4	90%
Button labels and link labels start with action words	3	80%
Headings and sub-headings are short, straightforward and descriptive	4	90%
The words, phrases and concepts used will be familiar to the typical user	2	70%
Numbered lists start at "1" not at "0"	4	90%
Acronyms and abbreviations are defined when first used	3	80%

#### 4.2.7 Page Layout and Visual Design

The screen layout is appropriate for the target users and their tasks	2	70%
The screen layout helps focus attention on what to do next	2	70%
On all pages, the most important information is presented on the first screen ("above the fold")	3	80%
The site can be used without scrolling horizontally	3	80%
Items that aren't clickable do not have characteristics that suggest that they are	4	90%
The functionality of buttons and controls is obvious from their labels or from their design	3	80%
Hypertext links are easy to identify without needing to 'minesweep' (e.g. underlined)	4	90%
Fonts are used consistently	5	100%
The relationship between controls and their actions is obvious	4	90%
Icons and graphics are standard and/or intuitive (concrete and familiar)	2	70%
There is a clear visual "starting point" to every page	3	80%
Buttons and links show that they have been clicked	0	50%
GUI components (like radio buttons and check boxes) are used appropriately	4	90%
Fonts are readable	5	100%

The site avoids italicised text and uses underlining only for hypertext links	5	100%
There is a good balance between information density and use of white space	2	70%
The site is pleasant to look at	0	50%
The site avoids extensive use of upper case text	5	100%
The site has a consistent, clearly recognisable look and feel that will engage users	1	60%
Colour is used to structure and group items on the page	2	70%
Graphics will not be confused with banner ads	4	90%
Pages use an underlying grid, with items and widgets aligned both horizontally and vertically	2	70%
The colours work well together and complicated backgrounds are avoided	3	80%
Individual pages are free of clutter and irrelevant information	3	80%
Standard elements (site navigation, contact section, terms and conditions etc.) are easy to locate	5	100%
The organisation's logo is placed in the same location on every page	5	100%
The site logo is placed in the same location on every page and clicking it returns the user to the home page	5	100%
Attention-attracting features (such as animation, bold colours) are used sparingly and only where relevant	5	100%
Icons are visually and conceptually distinct yet still harmonious (clearly part of the same family)	3	80%

#### 4.2.8 Multi-Platform Support

The screen layout adjusts to different screen sizes and densities	-1	40%
Font sizes used on the site adjust to different screen sizes and densities	-3	20%
The site serves images and videos at different resolutions to optimise the user experience on different screen sizes and densities	-2	30%
Pages prioritise important content and hide less important content on smaller screens	-3	20%
Pages take advantage of the whole screen on mobile devices	-2	30%
Important controls and links (e.g. navigation) are at the bottom of the screen on mobile devices and can be easily reached in one-handed operation	-3	20%
Pages use plenty of empty space around important information and touch targets	-1	40%
Touch targets are at least 48dp in size (7-10 mm effectively)	-1	40%
Pages react appropriately to orientation changes on mobile devices	-1	40%
Active page elements are responsive to touches and provide subtle visual feedback	-2	30%

Pages do not rely on mouse-over (hover) events to indicate interactivity	0	50%
Scrollable areas provide visual clues when users scroll past the beginning or end	0	50%
Pages strike a good compromise between overall information density and targetability of UI elements	-1	40%
The site caches important elements locally to allow for limited offline operation	-2	30%
The site supports "Add to homescreen" on major mobile platforms	0	50%
The site provides an application icon for installation to the homecreen	0	50%

#### 4.2.9 Help, Feedback, Error Tolerance

It is easy to get help in the right form and at the right time	0	50%
Prompts are brief and unambiguous	0	50%
The user does not need to consult user manuals or other external information to use the site	3	80%
Users are given help in selecting suitable objects to investigate	-2	30%
Confirmation pages are clear	-1	40%
Error messages contain clear instructions on what to do next	0	50%
When the user needs to choose between different options (e.g. login/signup), the options are obvious	2	70%
Error messages are written in a non-derisory tone and do not blame the user for the error	1	60%
Pages load quickly (2 seconds or less)	2	70%
The site provides immediate feedback on user input or actions	1	60%
When giving instructions, pages tell users what to do rather than what to avoid doing	2	70%
Help is clear and direct and simply expressed in plain English, free from jargon and buzzwords	0	50%

## 4.3 Open answers

In addition to numerical scores, evaluators had the option to provide open comments next to each design heuristic. These have been used to further explain or qualify numerical scores, often providing useful feedback and suggestions on how the website could be improved. These comments are not summarised but instead provided "as is" in order to preserve their detail.

The following sections list open comments grouped by design aspect and heuristic. Comments are attributed anonymously to specific evaluators and related to the numerical score in order to further contextualise them and inform their interpretation.

Note that not all heuristics have attracted open comments.

### 4.3.1 Homepage

**The items on the home page are clearly focused on users' key tasks ("feauritis" has been avoided)**

*Eval.1 (kind of complies):* Hierarchy might be useful - links all look identical (make main nav more obvious, secondary less so etc)

*Eval.3 (kind of complies):* Not too sure what the 'task' of the user is at this point. If new to the site then 'find out what this is all about' might be the task.

*Eval.4 (kind of complies):* as long as the user knows how to use the site, it is not a big issue, but if he/she does not, it becomes a major issue

**The home page contains a search input box**

*Eval.4 (does not comply):* at least no visible one that jumps to the eye, should be located at the top right of the page

**Categories for open/closed/cold cases are provided and clearly visible on the homepage**

*Eval.4 (kind of complies):* the top 10 are visible, the closed and cold cases are also visible as items in the menu bar. Biggest problem: as a new user you would not know what these categories mean

**Useful content is presented on the home page or within one click of the home page#**

*Eval.4 (complies):* again, it is visible, but you would not be sure what the pages are for

**Links on the home page begin with the most important keyword**

*Eval.4 (kind of complies):* they do, but same problem as above

**The value proposition is clearly stated on the home page (e.g. with a tagline or welcome blurb)**

*Eval.1 (kind of complies):* I was unsure whether the site is 'gimicky' (quiz) or actually detective-like in nature

*Eval.4 (does not comply):* it is displayed very small and does not really come to a point

**The home page contains meaningful graphics, not clip art or pictures of models**

*Eval.4 (kind of complies):* the images of the top 10 are displayed right away on the first page, but the website is not overloaded and very boring. It is not fun using it

**Navigation choices are ordered in the most logical or task-oriented manner (less important information last)**

*Eval.4 (does not comply):* the order does not make too much sense, i.e. How to start is only important for beginners --> display not at first (btw this guide is not helpful at all!)

**The title of the home page will provide good visibility in search engines like Google**

*Eval.1 (kind of complies):* 10 most wanted - 'what'?!

*Eval.3 (kind of complies):* Out of context I'm not sure how meaningful it is. Also Google may do odd things with numbers?

*Eval.4 (does not comply):* it is not the only thing that guarantees good visibility, a good description and value proposition on the first page would be useful too. And at the moment, even if the site gets displayed in the google search results, the user would not stay on the page too long

**All partner information is grouped in one distinct area (e.g. "About Us")**

*Eval.3 (complies):* The 'Museum of Design in Plastics' link.

*Eval.4 (does not comply):* not at all, is more spreaded over "About", "Contact", "Partner" and apparently the "Hall of Fame"

*Eval.5 (kind of complies):* couldn't find a distinct About us, there is an about, but doesn't highlight partners

**Users will understand the value proposition**

*Eval.1 (does not comply):* Personally I felt the initial impact was indicating a quiz, not a serious search for info!

*Eval.4 (does not comply):* there is no useful description on the first page. Maybe show the process as a diagram or different actions on the first page, took me a while to figure out what the site is for. First thought they are looking for designers/producers to product the displayed items

**By just looking at the home page, the first time user will understand where to start**

*Eval.1 (kind of complies):* Lacks visual hierarchy

*Eval.4 (does not comply):* I clicked on "How to start" but it was not useful.

*Eval.5 (kind of complies):* How to Begin could be clearer as heading

**The home page shows all the major options**

*Eval.4 (kind of complies):* yes, if you know your way around. If not, it is hard to get started

**The home page of the site has a memorable URL**

*Eval.1 (does not comply):* 10 most wanted is catchy - but could be anything! .org isn't the most obvious thing users type

*Eval.4 (complies):* the url is okay, not too unique, but memorable and especially short

*Eval.5 (kind of complies):* 10most doesn't indicate the site, also not ac, so not seen as academic site

**The home page is professionally designed and will create a positive first impression**

*Eval.1 (kind of complies):* It's OK, but the logo looks gimmicky - something that implies a search or detective work would help to portray what the site is hoping to achieve. Looks like an awards or low-brow fashion site!

*Eval.4 (does not comply):* not at all! As I said, if a new user comes through, he would not stay too long, because it looks boring and the purpose does not get clear right away

*Eval.5 (kind of complies):* Very plain in design which is easy but doesn't create best first impression 'to clean'

**The design of the home page will encourage people to explore the site**

*Eval.1 (does not comply):* As above!

*Eval.4 (does not comply):* there are way better websites out there and design matters...

*Eval.5 (kind of complies):* The layout is clear, but not encouraging

**The home page looks like a home page; pages lower in the site will not be confused with it**

*Eval.4 (kind of complies):* it does, at least because of the little introductory text

### 4.3.2 Task Orientation

**Excessive use of scripts, applets, movies, audio files, graphics and images has been avoided**

*Eval.4 (complies):* does not make it a good site

**The site avoids unnecessary registration**

*Eval.1 (kind of complies):* You still have to register!

**Information is presented in a simple, natural and logical order**

*Eval.1 (kind of complies):* Semantically, yes, visually it all seems on the same level

**Items can be compared easily when this is necessary for the task (e.g. object / case comparisons)**

*Eval.3 (does not comply):* This might be a 'nice to have' eventually.

**The path for any given task is a reasonable length (1-3 clicks)**

*Eval.4 (complies):* but you need to know how!

**The site's terms and conditions are is easy to find, especially on pages that ask for personal information**

*Eval.3 (kind of complies):* They were in the grey bit at the bottom, but should probably be more obvious on the registration page.

*Eval.4 (kind of complies):* always at the bottom of the page

**The site's terms and conditions are simple and clear**

*Eval.3 (kind of complies):* Could be improved by the addition of a non-lawyer speak summary, See WordPress for an example.

**The use of metaphors is easily understandable by the typical user**

*Eval.3 (complies):* Presumably reasonably educated people who will get the forensic metaphors.

**Command and action items are presented as buttons (not, for example, as hypertext links)**

*Eval.3 (complies):* Counting the clickable pictures.

**The site is robust and all the key features work (i.e. no javascript exceptions, server errors or broken links)**

*Eval.4 (kind of complies):* not responsive at all, even problems when resizing the site on a normal desktop computer --> headline on home page disappears

**The site supports novice and expert users by providing different levels of help**

*Eval.3 (kind of complies):* Not really needed.

*Eval.4 (does not comply):* think about the Help. It is not useful!

### 4.3.3 Navigation and Information Architecture

**It is easy to return to the home page from other pages**

*Eval.3 (kind of complies):* Not from the Twitter page links.

*Eval.4 (kind of complies):* not always, you need to know that a click on the logo brings you back. Sometimes a hyperlink "Home" appears --> not consistently

**Navigation choices are ordered in the most logical or task-oriented manner**

*Eval.1 (complies):* The order is good, but the visual hierarchy needs more prominence/differentiation



**The navigation system is broad and shallow (many items on a menu) rather than deep (many menu levels)**

*Eval.3 (complies):* Didn't see any menus at all.

**The major sections of the site are available from every page (persistent navigation), there are no dead ends**

*Eval.3 (complies):* Not counting the Twitter pages.

**There is a site map that provides an overview of the site's content**

*Eval.1 (does not comply):* Access denied!

**The site map provides a concise overview of the site, not a rehash of the main navigation**

*Eval.1 (does not comply):* Access denied!

*Eval.4 (complies):* but totally unstructured, looks like thrown on the page without thinking about it

**Good navigational feedback is provided (e.g. showing where you are in the site)**

*Eval.3 (kind of complies):* When on a particular page the link to that page remains visible and active. Better if it changed in some way and was not active.

**Category labels accurately describe the information in the category**

*Eval.4 (does not comply):* and additionally no description of what the label or category means

**There is a visible change when the mouse points at something clickable (excluding cursor changes)**

*Eval.3 (kind of complies):* The second line of pictures on the home page; the border is visible before mousing over (Firefox 27.0.1).

*Eval.4 (complies):* but too much! Hovering over images/icons highlights them HALF

**Hypertext links that invoke actions (e.g downloads, new windows) are clearly distinguished from hypertext links that load another page**

*Eval.3 (complies):* Buttons to other sites (FB etc.)

**Clicking the back button always takes the user back to the page the user came from**

*Eval.3 (does not comply):* Clicking on name links in /hall-fame opens a separate tab.

#### 4.3.4 Forms and Data Entry

**Field labels on forms clearly explain what entries are desired**

*Eval.2 (does not comply):* What is Latitude / Longitude in the user profile?

*Eval.3 (does not comply):* On /user/login what constitutes a valid user name and password?

**There is a clear distinction between “required” and “optional” fields on forms**

*Eval.3 (kind of complies):* There is an asterisk which conventionally indicates compulsion, but all feeld on the regisrtation form are presumably compulsory.

**Questions on forms are grouped logically, and each group has a heading**

*Eval.4 (kind of complies):* which questions?

**Pull-down menus, radio buttons and check boxes are used in preference to text entry fields on forms (i.e. text entry fields are not overused)**

*Eval.3 (complies):* Agreeing with the bit in brackets.

#### 4.3.5 Trust and Credibility

**The site contains third-party support (e.g. citations, testimonials) to verify the accuracy of information.**

*Eval.3 (kind of complies):* Sort of does if you count the blog entries etc.

**It is clear that there is a real organisation behind the site (e.g. there is a physical address or a photo of the museum)**

*Eval.4 (does not comply):* about and contact us is very unstructured

*Eval.5 (does not comply):* Needs more info to indicate links with museum and AUB.

**The project comprises acknowledged experts (look for credentials)**

*Eval.3 (does not comply):* Clicking on named in /blogs or /users did not produce biography information.

**Each page is clearly branded so that the user knows he is still in the same site**

*Eval.4 (complies):* not a nice branding though

**It is easy to contact someone for assistance and a reply is received quickly**

*Eval.3 (kind of complies):* Not obvious how to.

*Eval.5 (kind of complies):* No contact details or email addresses on Hall of Fame, all through blog or contact at bottom

**The visual design complements the brand and any offline marketing messages**

*Eval.5 (kind of complies):* Don't see any brand being highlighted

**There are real people behind the project and they are honest and trustworthy (look for bios)**

*Eval.1 (does not comply):* Only through Facebook mugshots - and who trusts that!?!

*Eval.3 (complies):* But no bios!

### 4.3.6 Writing and Content Quality

#### **Text is concise, with no needless instructions or welcome notes**

*Eval.4 (complies):* instructions may not be useless

#### **The words, phrases and concepts used will be familiar to the typical user**

*Eval.2 (does not comply):* Cold case?

#### **Numbered lists start at "1" not at "0"**

*Eval.3 (complies):* Disn't see any.

### 4.3.7 Page Layout and Visual Design

#### **The screen layout is appropriate for the target users and their tasks**

*Eval.2 (kind of complies):* does not scale well on mobile

#### **The screen layout helps focus attention on what to do next**

*Eval.1 (kind of complies):* More visual hierarchy

#### **The site can be used without scrolling horizontally**

*Eval.2 (kind of complies):* pinch and zoom on mobile

#### **Icons and graphics are standard and/or intuitive (concrete and familiar)**

*Eval.2 (kind of complies):* using project logo as points or stars

#### **Buttons and links show that they have been clicked**

*Eval.2 (kind of complies):* just a little lighter, difficult to see

#### **There is a good balance between information density and use of white space**

*Eval.2 (kind of complies):* too much white space in hall of fame; cluttered solved cases page

#### **The site is pleasant to look at**

*Eval.1 (kind of complies):* It's OK, but I think the style needs to follow the search/detective trail to draw users in

*Eval.2 (kind of complies):* looks like a test website

*Eval.5 (kind of complies):* Very clean, not quite encouraging

#### **The site has a consistent, clearly recognisable look and feel that will engage users**

*Eval.1 (kind of complies):* Consistent - but I'm not sure it draws users in...

*Eval.2 (kind of complies):* consistent: yes; engaging: no

**Colour is used to structure and group items on the page**

*Eval.5 (kind of complies):* Limited in colour useage

**The site logo is placed in the same location on every page and clicking it returns the user to the home page**

*Eval.2 (complies):* not a good logo, looks amateurish

**Icons are visually and conceptually distinct yet still harmonious (clearly part of the same family)**

*Eval.2 (kind of complies):* logo used for points / stars

### 4.3.8 Multi-Platform Support

**The screen layout adjusts to different screen sizes and densities**

*Eval.1 (kind of complies):* Collapses, but not adaptive/responsive

*Eval.2 (does not comply):* menu cut off on mobile, e.g. research tips page; when using back button, home pace is scaled up and only half the page is visible

**Pages prioritise important content and hide less important content on smaller screens**

*Eval.2 (does not comply):* tagline takes up most space on mobile

*Eval.3 (kind of complies):* Tried changin the window size, but not tried it on a mobile

**Pages use plenty of empty space around important information and touch targets**

*Eval.2 (does not comply):* not optimised for mobile at all

**The site caches important elements locally to allow for limited offline operation**

*Eval.2 (does not comply):* shows page not available when offline

**The site provides an application icon for installation to the homecreen**

*Eval.2 (kind of complies):* cannot install to home screen

*Eval.3 (complies):* The favicon

### 4.3.9 Help, Feedback, Error Tolerance

**It is easy to get help in the right form and at the right time**

*Eval.2 (does not comply):* only contact form, difficult to find

**Confirmation pages are clear**

*Eval.2 (does not comply):* sign-up confirmation is just a green box on the home page!

*Eval.4 (kind of complies):* should be displayed on top of the page and not somewhere in between the content

#### **Error messages contain clear instructions on what to do next**

*Eval.2 (kind of complies):* did not see any error messages

#### **When the user needs to choose between different options (e.g. login/signup), the options are obvious**

*Eval.1 (kind of complies):* Registration could be optional when you read the instructions (users could skip and use the contact form)

#### **Error messages are written in a non-derisory tone and do not blame the user for the error**

*Eval.2 (kind of complies):* did not see any error messages

## **5. Summary and conclusions**

In order to evaluate the 10 Most wanted website and provide formative feedback for further development, we developed an instrument for heuristic evaluation. In accordance with the recommended sample size for heuristic evaluations, the instrument was completed by five evaluators including three HCI experts and two web developers.

The evaluation resulted in numerical scores for compliance of the website with design heuristics covering various aspects, including home page usability, task orientation, navigation and information architecture, forms and data entry, trust and credibility, writing and content quality, page layout and visual design, multi-platform support and help, feedback and error tolerance.

While the evaluation resulted in an acceptable overall score of 69% (i.e. the website complies with 69% of design heuristics), there is room for improvement. This applies in particular to multi-platform support, which stands out with a score of 29%. Other areas to improve include help, feedback and error tolerance (62%), trust and credibility (66%) and the homepage (67%) which plays a special role as the landing page for most first-time visitors.

The results of the expert review can only highlight areas to look at but cannot directly provide actionable design and development propositions, as these equally depend on strategic development goals for the website. No attempt has been made therefore to provide further interpretation of the results. Instead, detailed combined scores for each heuristic are provided in colour-coded tables to increase readability and support review and planning by the development team.

In addition to numerical scores, there was a large number of open comments from the evaluators, indicating a good level of engagement with the website and the evaluation task. Considering that the comments come from experts, they are provided in raw form in order to preserve context and detail and thereby support further interpretation of specific results by the development team.

## 7. References

- Nielsen, J. (1989). Usability engineering at a discount. In Salvendy, G. and Smith, M.J. (Eds), *Designing and Using Human-Computer Interfaces and Knowledge Based Systems*. Elsevier Science Publishers, Amsterdam, pp. 394-401.
- Nielsen, J. and Molich, R. (1990). Heuristic evaluation of user interfaces. In *Proceedings of CHI'90*, ACM Press, pp. 249–256.
- Nielsen, J. (2000). Why You Only Need to Test with 5 Users. Available <http://www.nngroup.com/articles/why-you-only-need-to-test-with-5-users/>
- Nielsen, J. (2012). How Many Test Users in a Usability Study? Available <http://www.nngroup.com/articles/how-many-test-users/>
- Travis, D. (2009). Web usability guidelines. Available <http://www.userfocus.co.uk/resources/guidelines.html>

## A. Appendix



The evaluation instrument is provided in a separate file "*10most\_ExpertReview.xlsx*" attached to the electronic version of this report.