How to support participation and quality contribution on websites for crowdsourcing cultural heritage

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SLIDES

1   Title

2   Questions

When I set out on my PhD adventure there were a few questions buzzing in my head:

- What are the aspects of design that influence participation and contribution quality on websites for crowdsourcing cultural heritage?
- Which aspects of design are more influential than others?
- How could websites for crowdsourcing cultural heritage better support participation and quality contribution?

These are some of the questions my research has sought to answer, and today I'll be reporting back on what I've found. But first, let me back up a little, to set the scene.

3   Potential benefits for crowdsourcing

These are just some of the reasons why an increasing number of libraries, archives, museums, galleries and academic institutions are crowdsourcing the processing of cultural heritage assets.

Crowdsourcing labour-intensive processes such as transcribing historical documents, recording personal histories, tagging paintings with keywords, correcting the OCR text of digitised newspapers, and cataloguing cultural heritage collections, are better enabling these institutions to create or enhance digitised data for public use and research, and engage the wider community.

4   Common challenges

But along with these potential benefits come a number of challenges. Crowdsourcing is still in an experimental phase and projects that involve cultural heritage collections have not always been cost-effective.

While the success of any crowdsourcing project relies on sufficient participation and quality contribution, crowdsourcing is an umbrella term for a wide variety of initiatives. The design of crowdsourcing systems needs to reflect the particular approach, type, and context of each initiative.

In addition to common project constraints such as limited time, resources and expertise, the guidance available for designing and evaluating websites for crowdourcing cultural heritage is limited and fragmented.

5 A (Proposed) Solution

With these potential benefits and common challenges in mind, I developed a set of 21 design principles for supporting participation and contribution quality on websites for crowdsourcing cultural heritage. These design principles are now freely available in my website http://nonprofitcrowd.org/crowdsourcing-heuristics/

This new set of principles draws on existing guidance for interactive website design (Petrie & Power, 2012), online community design (Kraut & Resnick, 2012; Preece & Shneiderman, 2009), crowdsourcing (Howe, 2009), and crowdsourcing cultural heritage (Hansen et al., 2013; Holley, 2009, 2010; Lascarides, 2012; McKinley, 2012, 2013; Romeo & Blaser, 2011).

They are intended to supplement, not replace, generic heuristics for website usability.

6 How influential are these design principles on participation and contribution quality?

So which aspects of design are more influential than others? To answer this I collected data from 251 former, current, and prospective users of websites for crowdsourcing cultural heritage. These included people from NZ, Australia, UK, USA and elsewhere, and those affiliated with the cultural heritage sector, tertiary institutions, and other professions.

Based on the questionnaire results, I ordered the 21 design principles according to their level of influence on volunteer participation and contribution quality, to help project teams prioritise aspects of design and optimize available time and resources.

7 Evaluating websites

This brings us to my next question: how could websites for crowdsourcing cultural heritage better support participation and quality contribution? To answer this, I evaluated a sample of 20 websites using the new design principles. The sample encompassed:

- Multiple host types: galleries, libraries, archives, museums, research institutions, and collaborations
- 10 common process types: transcribing, recording/creating content, tagging, correcting/modifying content, contextualisation, cataloguing, commenting, critical responses and stating preferences, georeferencing, linking, and mapping

- 6 common asset types: text, image, ephemera/intangible cultural heritage, geospatial, numerical or statistical information

I'll talk you through some of the results from the study, to illustrate how the design principles can assist with designing and evaluating websites for crowdsourcing cultural heritage.

8 Four ways to support participation and contribution quality

The 21 design principles are organized into four categories, which represent the key themes underlying the user experience. Websites for crowdsourcing cultural heritage support participation and contribution by informing, supporting and engaging users; and nurturing and sustaining the user community.

9 Inform users: principles

Websites can effectively inform users by providing clear, concise and sufficient task instruction; showing how project output is or will be made freely accessible to the public; keeping the website current; prioritizing key information; presenting reasons to contribute; displaying project progress; and conveying the credibility of the project.

The primary purpose of informing users is to support participation; based on the results of the questionnaire, these design principles are moderately to very influential on the decision to contribute and sustained participation.

10 Inform users: Web inspection results

Overall, the results of my website inspections suggest that the websites sampled are effectively informing users; however, I did uncover a common design weakness. Questionnaire respondents rated the provision of clear, concise, and sufficient task instruction as very influential on both the decision to volunteer and contribution quality, and the most influential of all design principles presented; however, only twelve (60%) of the websites inspected fully complied with this principle. So how could task instruction be improved?

11   Example of task instruction: Ancient Lives

Terms, abbreviations and interactive elements should be clearly explained, and jargon should be avoided. Task instruction should be concise and easy to follow so as to not overwhelm the user, but sufficiently detailed to enable users to complete the task efficiently and effectively.

New visitors should be able to start contributing within a short space of time, and contributors should be able to work independently and with confidence. A diverse group of users with varying levels of skill, knowledge, and available time should be supported by instruction delivered in various formats.

Task instruction may begin with an overview of task workflow, using video tours of the task interface, instructive graphics, step-by-step tutorials or demonstrations. Incorporating step-by-step instructions or hover/pop-up instructive text into the task interface can support new contributors. More detailed instruction in the form of written guidelines and help documentation, FAQs, screenshots and examples, knowledge bases, or forums can support contributors requiring additional guidance.

The website Ancient Lives, which provides an interactive tutorial with step-by-step instructions, is an example of effective task instruction.

12   Support users: principles

Websites for crowdsourcing cultural heritage can effectively support users by minimizing user error and the effort to contribute; enabling users to review contributions; clearly identifying tasks; providing task options; and simplifying the task. The results of the questionnaire found that the design principles in this category are at least moderately influential on participation and/or contribution quality.

13   Support users: results

The results of my website inspections suggest that the websites sampled are effectively supporting users; however, I identified scope for improvement; in five (25%) cases, sustained participation could potentially be improved by minimizing the effort to contribute, which was rated by questionnaire respondents as very influential on the decision to continue volunteering. So how could this aspect of design be improved?

14   Example of minimizing effort: Europeana

Websites should minimize the necessity for users to provide the same information more than once, and not demand excessive effort when tasks could be achieved more efficiently by the system. Enabling users to perform tasks effectively and efficiently encourages new users to continue contributing, and established users to make large and/or frequent contributions.

Examples of minimizing effort include allowing users to contribute without registering, making registration optional, or simplifying registration/login by incorporating existing user accounts for web applications such as Google, Twitter or Facebook. Other examples include prioritizing components of the task and allowing contributions to meet minimal requirements, auto-save functionality, automatic completion of data fields based on previous contributions, automatically directing users to the next step of the task, and enabling users to save and return to their work in a new session.

Examples of non-compliance include an unintuitive sequence of interaction, and confusing or interrupted workflows; an absence of the interactive functionality users need and expect, such as image magnification; requiring excessive effort to successfully manipulate digitized text or images; and unclear or difficult input formats.

The website Europeana provides a good example of minimizing the effort to contribute. The site allows contributions to meet minimal requirements through the use of mandatory data input fields, and enables users to save draft contributions and return to them in a future session.

15   Engage users: principles

Websites for crowdsourcing cultural heritage can effectively engage users by being attractive; acknowledging participation; encouraging users to engage with the collection; and conveying a sense of fun. The primary purpose of engaging users is to support participation; based on the results of the questionnaire, the design principles in this category are slightly to moderately influential on the decision to contribute and/or sustained participation.

16   Engage users: results

The results suggest that the websites sampled are effectively encouraging users to engage with the collection, and that most websites are attractive to users; however I uncovered a common weakness; only 12 (60%) of the websites fully complied with the principle acknowledging participation, which could be negatively impacting on sustained participation.

The sample also rated poorly overall for conveying a sense of fun, with only 8 (40%) websites fully complying with this principle. I should note that based on the websites inspected, the nature of the collection appears to have no bearing on compliance with this principle; websites that conveyed a sense of fun ranged from those focusing on collections of art, menus, ship logs, natural history catalogues and maps, to war diaries, photos of the Titanic rescue, and personal stories of 9/11.

So what does acknowledging participation involve?

17   Example of acknowledging participation: Your Paintings Tagger

This design principle explains that user participation may encompass registration, completion of steps in the task, task completion, task submission, and cumulative contributions. Feedback on user participation is always positive, and may take the form of text or visual indicators; this encourages new visitors to complete a task, and encourages users to contribute more.

Examples of compliance include thanking the user for tasks completed and inviting them to contribute more, acknowledging the user's contribution to the goal, and updating individual progress indicators. Your Paintings Tagger provides a good example of acknowleding participation.

18   Nurture and sustain the user community: principles

Websites for crowdsourcing cultural heritage can effectively nurture and sustain the user community by conveying a sense of community; supporting community interaction; publicly recognizing contributions; and supporting content sharing. The results of the questionnaire found that the design principles in this category are slightly to moderately influential on participation and/or contribution quality.

19   Community: results

The results suggest that there is scope for improvement among the websites sampled in relation to nurturing and sustaining the user community; only 5 (25%) of the websites inspected fully complied with all principles in this category.

Despite community interaction being enabled on 15 (75%) of websites, only 11 (55%) successfully conveyed a sense of community; incorporating design features to achieve this could potentially increase participation and contribution quality. Furthermore, the 10 (50%) websites that do not currently publicly recognise contributions could potentially increase participation and contribution quality by doing so; and the 8

(40%) websites not currently supporting content sharing, could potentially increase participation by incorporating sharing functionality.

20   Example of conveying a sense of community: Old Weather

Let's take a closer look at the principle convey a sense of community. The project community is comprised of contributors and the project team, and may include users of project output. A visitor's decision to contribute may be positively influenced by the prospect of belonging to a community, and by the presence of other people, which raises expectations of project success. Users who are motivated by being part of a community may submit higher quality contributions due to a sense of commitment, and return to contribute more.

Methods used to convey a sense of community include emphasizing the collaborative nature of the project; requiring contributors to register; and displaying contributor names or handles, contributor profiles, and evidence of community interaction. Other examples include displaying welcome messages to new contributors; publicly acknowledging new contributors; publicly displaying community announcements, such as project news, progress updates and new website features; and linking to related crowdsourcing communities. A website that does not convey a sense of community to users, despite techniques employed with a view to achieving this, is an example of non-compliance.

Old Weather successfully conveys a sense of community. For example, the site emphasizes the collaborative nature of the project by referring to contributors as "crew".

21   Design principle categories: results

My results suggest that in general, websites for crowdsourcing cultural heritage are effectively informing and supporting users, which encompass the most influential aspects of design on website goals. However, there are opportunities to better support participation and contribution quality in all areas, particularly in relation to engaging users and nurturing and sustaining the user community.