

Crowdsourcing in libraries and museums: Challenges, opportunities and digital impacts

Dr. Mia Ridge, @mia_out Digital Curator, British Library

Chinese Association of Museums

Taipei, Taiwan, August 2017

Thank you for the invitation to speak.

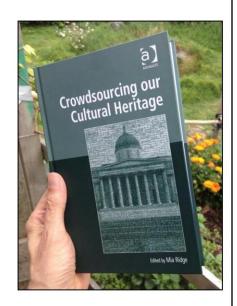
Abstract: Crowdsourcing in museums and libraries involves asking the public to help with tasks that contribute to a shared, significant goal or research interest related to cultural heritage collections or knowledge. This talk will introduce some key examples of successful crowdsourcing projects that have transcribed, categorised, linked and researched millions of cultural heritage and scientific records, and discuss some of the reasons for their success. Digital technologies have enabled exciting new forms of public participation in cultural heritage and the sciences, but they can also challenge museums, libraries and archives to manage the changes that these new opportunities bring. Audience expectations have changed as social media and digital technologies have encouraged greater organisational transparency, and more flexible digitisation and information management practices. How can museums and libraries work with the public to make collections more accessible while making room for people to explore and enjoy collections in new ways?

Overview

- Introduction: about me, definitions and key examples
- Opportunities for museums and libraries
- Challenges for museums and libraries
- Looking to the future
- Questions



- Digital Curator, British Library
- Book 'Crowdsourcing our Cultural Heritage', 2014
- PhD 'Making Digital History: the impact of digitality on public participation and scholarly practices in historical research', 2015
- MSc in human-computer interaction: crowdsourcing games to enhance museum collection metadata, 2011



Why am I here talking about this? I've done major research projects on crowdsourcing in cultural heritage, and edited a book on the subject. My PhD in digital history studied crowdsourcing as a stepping stone to engagement with the practices and skills of history.



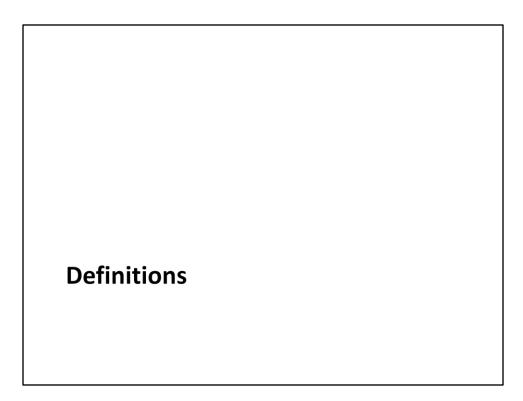
I worked in social history and history of science museums for a long time, got interested in opportunity between public engagement and need to enhance collections. Made games for a research project in 2010, and as a result realised that a) games helped overcome fear of adding content in authoritative space, b) asking people to look at a series of scientific objects in order to describe them made them curious about the objects



Also undertook more complex participatory project on social history of the First World War. Very niche project but has been successful in creating structured data about military units in WWI.



My team helps scholars use digitised, digital collections of the British Library in research and creative projects. Interested in application of computational methods in digital humanities, digital social sciences, etc, to our collections. We also provide advice on digitisation and run a training programme to teach foundational methods of digital scholarship.



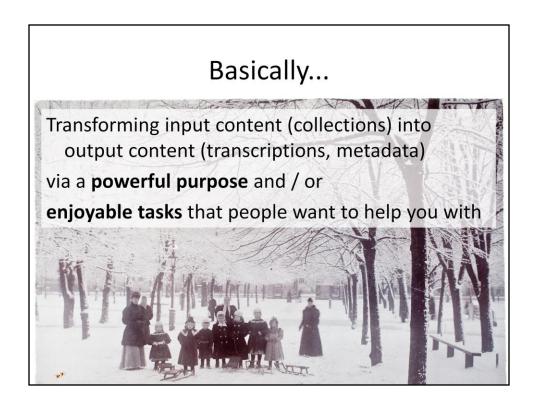
Crowdsourcing in cultural heritage

Asking the public to help with tasks that contribute to a shared, significant goal or research interest related to cultural heritage collections or knowledge.

The activities and/or goals should be inherently rewarding.

My definition is partly descriptive, and partly proscriptive (what it should be, as well as what it is). Benefit should be wider than your institution e.g. improving catalogue data helps any user of the catalogue as well as the institution.

No financial rewards so has to be rewarding. Often task is quite enjoyable, and people are motivated by knowing their contribution helps make the world a better place.



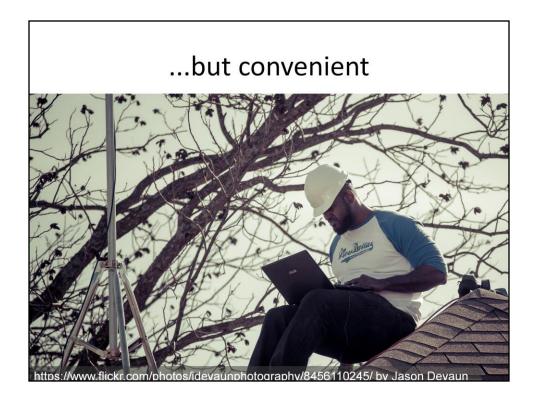
Those terms 'powerful purpose' and 'enjoyable tasks' are key aspects of successful projects.

Input content - the image. Output content - terms to describe the image.



'Online volunteering' is a good way of thinking about crowdsourcing in cultural heritage. Contributors are looking for a leisure activity - some just want casual activities they can pick up whenever suits them, others want an opportunity to develop deeper skills and interests. The opportunity to socialise with other people with similar interests can turn into a strong motivation for continuing for some volunteers.

If you've worked with in-person volunteer or community programmes, you already have a lot of the skills needed to run a good crowdsourcing project.



Digital tech offers serious advantages over in-person volunteering programmes. They are not tied to venue opening hours or location; not limited by conservation or handling issues once material is digitised. Allows you to reach thousands of people, or just a few interested specialists who might be located anywhere in the world. Convenience for volunteers means they can fit it in around their lives. A few minutes here and there adds up, means people can take up hobbies sooner (where previously they might have waited until retirement).

| Satisfying 'microtasks' | |
|--|---|
| (A New York Public Ulbrary website Spain website Spain | 6 |
| Peach frappée 25 hocolate Ice Cream 25 Mixed 30 e Pineapple Water Ice 25 Turkish Coffee 20 JOHANNIS 40 20 | |
| What does this say? | |
| Pineapple Water Ice | |
| Please type the text of the indicated dish EVACTLY as it appears. Don't worry about accents. Price (in Dollars): 0.25 See more than one price for this dish? Trouble reading the text? Type your best guess, then check this box -> Enter dish cancel Delete this dish | |
| PREVACY POLICY • RULES AND REGULATIONS • POLICY ON PATRON-GENERATED WEB CONTENT • TERMS AND CONDITIONS A PROJECT OF MYPL LABS. WITH GENEROUS SUPPORT FROM: Humanities | |
| NYPL 'What's on the Menu?' | |

This is a screenshot of the Menus project. They have removed everything not essential to the task from the interface so you can focus on the task. They've anticipated common questions and provided answers on the screen.

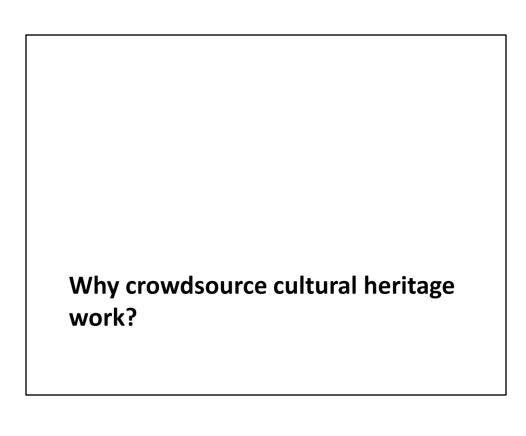


19thC examples of distributed networks of observations and research reported by post, telegraph... Technology has made it easier to reach interested people, to collate and verify work, but the basic model pre-dates computers. First example is the Oxford English Dictionary (OED). In 1879 the editor asked the public to help with finding sources and the earliest examples of use for words for which they were lacking information. Contributions from the public would be used in the dictionary alongside those from recognised and invited experts.

This shows two things - even then, a call for public assistance could be embedded in scholarly practice, where the same intrinsic motivations of leisure, social networks and community, learning, an interest in the subject and a chance to practice skills were important. You can still participate in OED appeals today, so it must work.

It also shows that crowdsourcing as we know it has been transformed by technology, but not created by it. The ability of digital technology to provide almost instant data gathering and feedback, automatic validation and the ability to reach both broad and niche groups through loose networks have all been particularly important. For collecting institutions, technology has also helped manage the sheer physical issue of providing access to collections without space or conservation limitations.

See also: http://blog.oxforddictionaries.com/2013/02/james-murray/http://public.oed.com/history-of-the-oed/archived-documents/april-1879-appeal/april-1879-appeal/





Digitisation backlog: collections are big, resources are small. Manually enhancing collections records is expensive and time-consuming. Very few orgs have the resources for digitisation of images, let alone full cataloguing or transcription.

The British Library holds 180 - 200 million items:

Over 14 million books; 8 million stamps; 310,000 manuscript volumes; 4 million maps; 60 million patents; 260,000 journal titles; sound files; pamphlets, magazines, sheet music, newspapers; television and radio recordings; websites

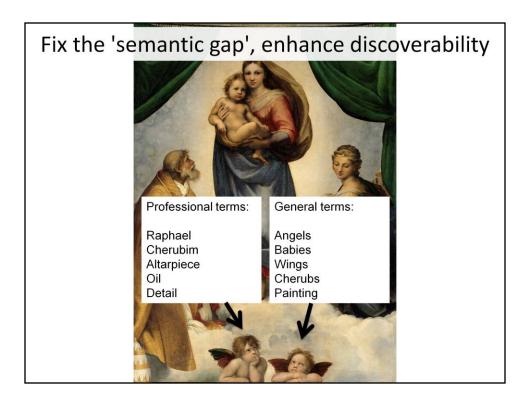
Over 3 million new items are added every year Only 1-4% of collections are digitised/digital

Image: The storage void of the new British Library National Newspaper Building at Boston Spa in West Yorkshire. Photo © Kippa Matthews



As an example of scale for just one type of collection... There are almost a quarter of a million (230,000) printed sheets in 1,000 volumes, but existing catalogue records provide minimal details and do not expand beyond naming a location (town), the year(s) covered, and sometimes the name of a particular theatre. The current catalogue doesn't include the level of detail important to researchers: no titles of plays or performances; no names of actors, dramatis personae; no dates, or details of songs performed.

Varied formats, not suitable for OCR or computational processing into structured data. Crowdsourcing some structured text seemed like most realistic way of enhancing records.



Discoverability is the ability of something to be found. Detailed metadata, descriptions and images help make items discoverable.

However, when metadata or information records are created by professional cataloguers, the content is often designed for internal or specialist users and doesn't use the everyday language our audiences might use to find material. This example shows the difference between the language a cataloguer and a member of the public might use to describe the cherubs in this painting.

Image: Raphael - Madonna Sixtina (Gemäldegalerie Alter Meister, Dresden, 1513-14

Access external specialist expertise



There's a lot of specialist expertise outside the museum. There's an online community for almost every topic or type of item under the sun, and some of those people might want to share their knowledge with a museum or library. People can share information about their professional or social experiences of a museum object, or share the results of their personal research.

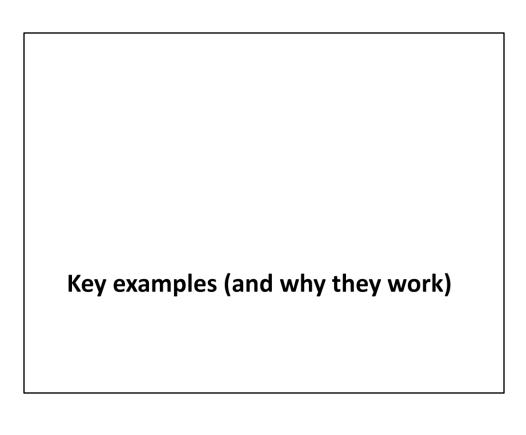
Create meaningful experiences with collections



Well-designed projects can help people discover new interests, communities, or just encourage them to have a brief moment of deeper engagement with cultural heritage. Will talk more about that later.



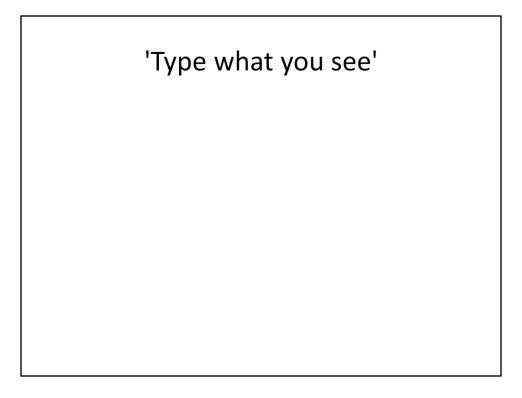
Might be learning by following their own interests using heritage material, through discussion with others and with museum staff, or just through spending lots of time developing familiarity with material.



Types of projects

'Type what you see'
'Describe what you see'
'Share what you know'
'Validate other inputs'

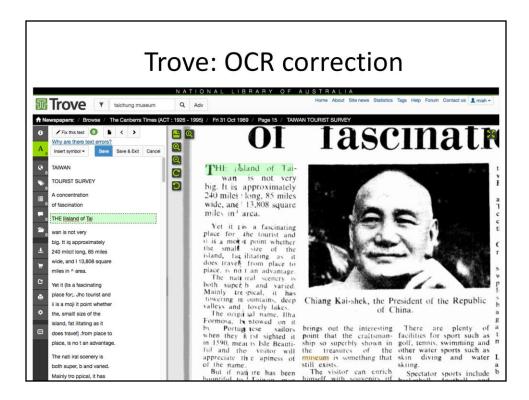
About what the task involves. The uses of the data, and accuracy and validation requirements are different for each type.



Sometimes literally 'type the text that's in front of you', other times it's an action based on what you can see on the screen.

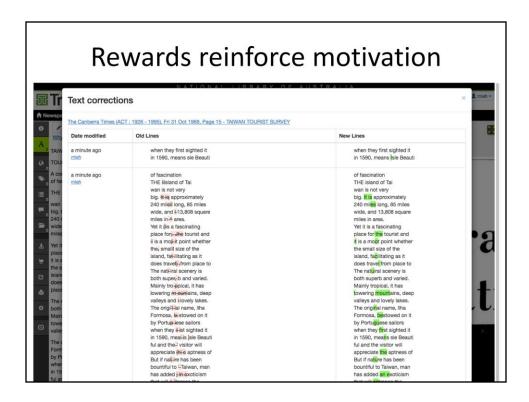


You may have seen something like this when commenting or registering for a site online. If you've typed in the words shown, then you've helped correct text (or transcribe audio). A 'type what you see' example.

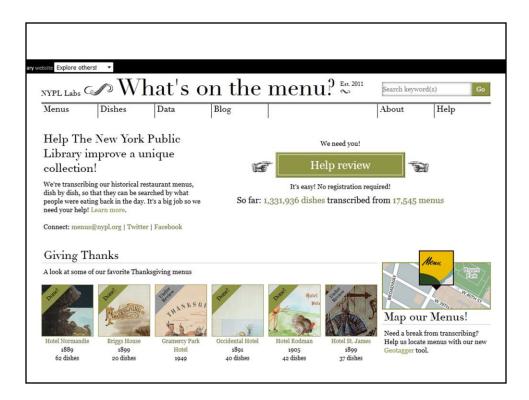


National Library of Australia's Trove interface for newspapers lets people correct errors they find when looking through historical newspapers. The task is so satisfying that some people spend hours a week on it. They have minimised barriers to participation - if you see an error, you can 'fix this text'.

Designed to let people get on with correcting errors they'd come across when doing their work, but satisfying enough task that people do it for fun. Minimised barriers to participation. 238 millions lines of text correct



Your contribution makes a difference immediately... Effective design that makes correcting text a satisfying interaction. The user experience is further enhanced by the immediate appearance of the corrected text on the page (alongside the editing history). This shows participants the value of their contribution by making their corrections immediately available for the benefit of other users, reassures them that their work can be checked.



New York Public Library's What's on the menu project was a very successful example. Transcribed dishes and prices from 17,000 menus.

Works because it has a really focused design. It's also regularly updated (e.g. topical menus - spring, Superbowl), showing that the organisation is paying attention and values contributions. Points people to content made discoverable through the project.



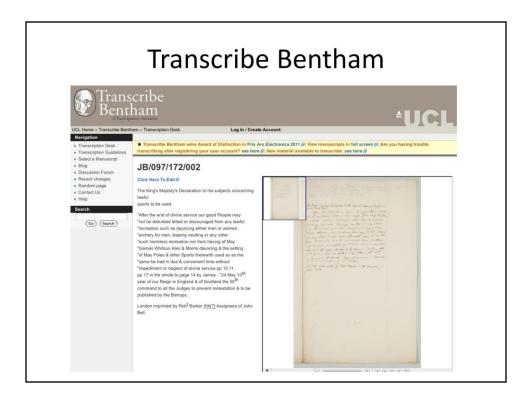
It taps into altruistic and subject specialist motivations. Gives a clear sense of what to do next - literally has hands pointing to the button to press.

Like Trove, they have removed text or processes that are barriers to participation. In design terms, they've removed the 'friction' from getting started. They've also anticipated worries like 'do I need to register?' and answered them right there on the page. Overall, it shows that empathy for your participants is an important design asset.

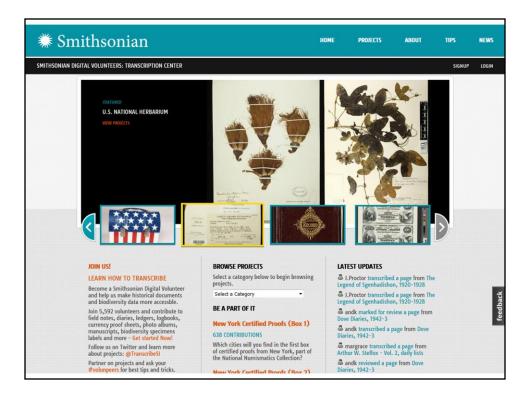


This handwriting transcription task is harder and takes more time, but people are highly motivated to contribute to family history (and for some people, it's a contribution to their religious mission).

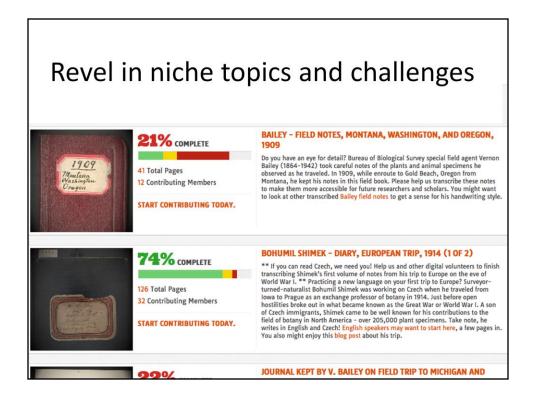
How easy transcription tasks are depends on the handwriting, but that's part of the attraction



Complex task - marking up transcriptions in XML - on difficult source material. Has a small number of very productive super-taggers... manual validation creates backlog and delay in approving content reduces feelings of reward. Post to the blog about progress help make up for it. Media coverage helped - each round drew in a few contributors.



Relatively recent project, was able to learn from previous projects.



The design breaks the overall task of transcribing Smithsonian's collections into 'projects' the size of a notebook. This means each 'project' feels easier to complete, and gives them lots of successes to celebrate. They are able to provide a description for each notebook that includes specific places, languages, people that might attract your interest.



Possibly a great example for students - transcribe Ancient Greek letters from papyri, even if you can't read the Greek alphabet. When trying this out I found myself slowly getting better at spotting different Greek letters because the interface breaks it down into a 'pattern matching' task.



Moving on to tasks that involve visual matching... In this British Library project, people match historical and modern maps and add markers to each to align historical maps with modern coordinate systems. This means that old maps can be displayed spatially. It's an enjoyable task if you like maps and solving puzzles, and a great way to interact with the collections.



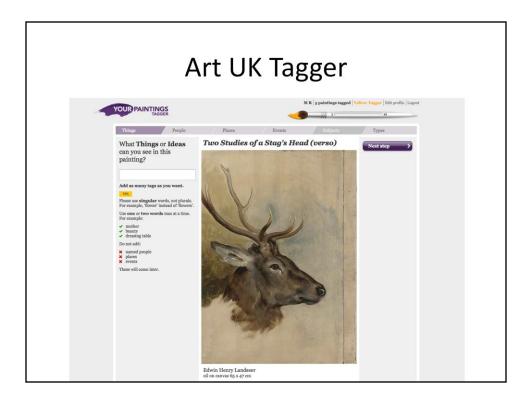
This is an example of a 'collecting' project, and also an example of an audiovisual project. People around the UK could record local sounds and upload them. They had to be checked in case copyrighted material like music was playing in the background, but some people were delighted when their contribution was accepted.



A lot of the tasks already mentioned are versions of traditional cataloguing tasks. This Micropasts 'photo masking' task is entirely new. They have provided a series of photos of objects taken from different angles. You draw around them so the computer can create a 3D model of the object.

'Describe what you see' / 'Share what you know'

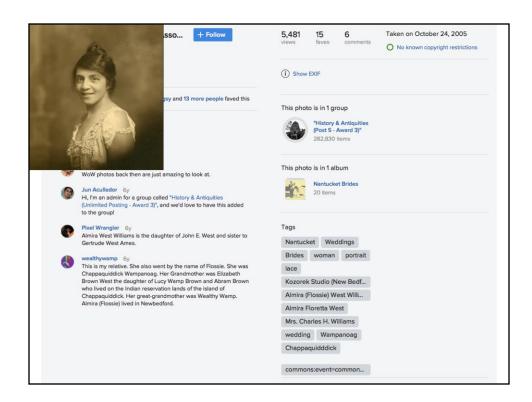
The line between adding tags that describe something and adding information drawn from knowledge beyond what's on the screen is blurry.



Tagging – typing in words that describe what you see – can be useful and give people an excuse to spend time with collections. Immersion in images can be its own reward.

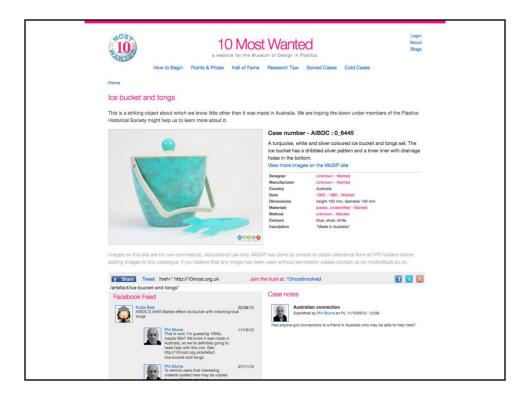


Is anyone using Flickr Commons for sharing photos?



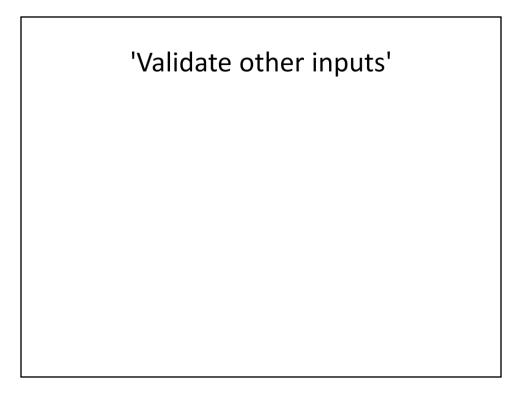
People can add tags or comments to images posted to Flickr. Words like 'brides' help make the photos more discoverable, while two commenters have provided possible identification for the woman in the photo.

Tags - describe what you see; Comment - share what you know

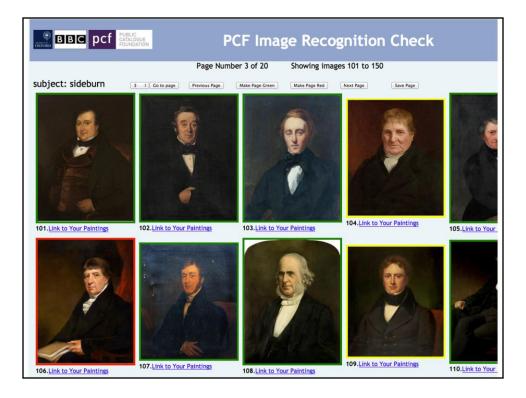


An experimental project. Museum of Design in Plastics tried to use crowdsourcing to find information about designers, methods, manufacturers for specific objects. Much more specialist knowledge or research skills required to contribute.

When asking people to contribute expertise or knowledge, can take longer for the right person to find the right question/object.

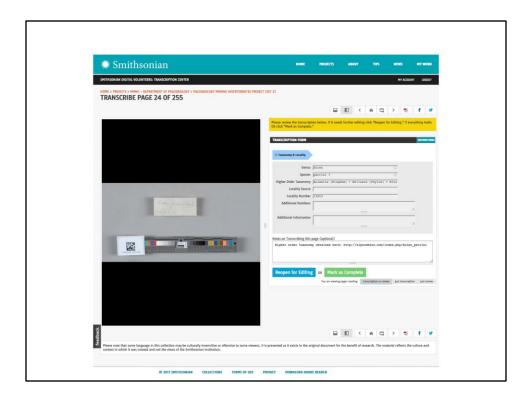


About what the task involves. The uses of the data, and accuracy and validation requirements are different for each type.

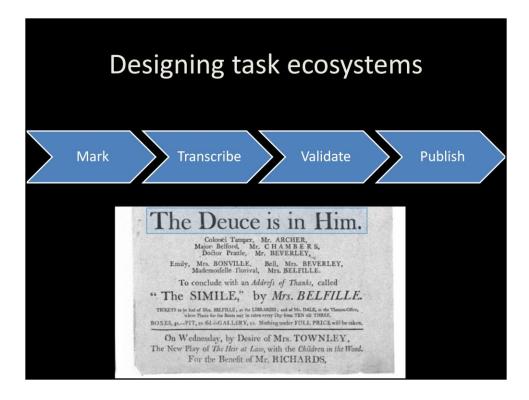


In this interface, people check suggested categories applied by software. You ignore any images that correctly match the category 'sideburn', click once on images that don't include sideburns, and twice on images that are uncertain. The design makes it easy to review lots of images very quickly.

This is an example of a workflow that combines people and software contributions - we will see a lot more of this in future.

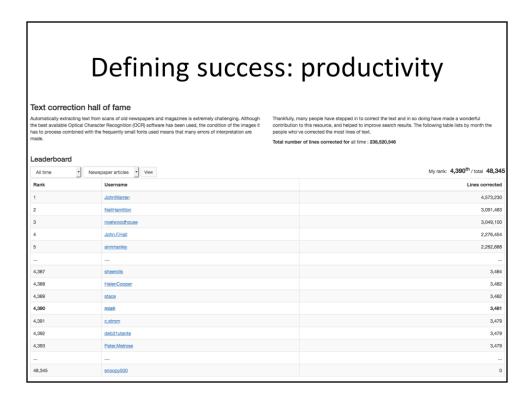


The Smithsonian project asks registered volunteers to review other people's transcriptions for correctness. This reduces the amount of work that the organisation has to do to finalise records.



Validation tasks can be part of an 'ecosystem' of tasks that collectively contribute to getting all the needed data collected, checked and published.

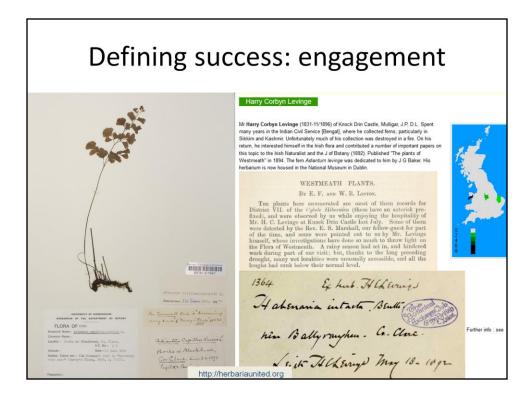




You can define success by the number of tasks completed. People will work towards metrics you provide, so be careful! If you focus on the number of tasks, people may rush and neglect the quality of a task, or not have the same level of absorption in a collection.



You can also define success by the number or type of people engaged in the tasks. This is often important for organisations whose mission is to reach the public, whether that's to give them an experience of contemporary science or access to their history through specific collections. The Zooniverse projects have reached well over a million people worldwide - this map . Some of scientific projects might also look at the impact of publications on social media and in journals that result from their projects. Museums might look at the number of researchers who find their digitised collections.



Finally, you can look at the number of people who are deeply engaged - people whose feelings or knowledge about the material or the underlying disciplines change to the extent that they change some aspect of their behaviour. In this example, people came for the herbarium specimens and got caught up in biographical interest of the original specimen collectors. There's something about handwritten text that seems particularly likely to get people thinking about historic lives.

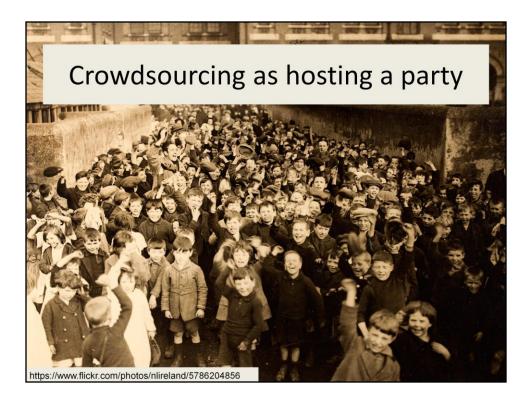
http://herbariaunited.org/wiki/Harry_Corbyn_Levinge or http://herbariaunited.org/wiki/Augustin Ley



In this example, people transcribing faunal specimen sheets started to realise that they were seeing the same handwriting on different cards and started to wonder about the people behind the collections. They collected examples, started to see relationships, compile biographies. They joined because they were interested in science, but then become interested in history.

http://herbariaunited.org/wiki/Harry_Corbyn_Levinge or http://herbariaunited.org/wiki/Augustin_Ley





Planning a crowdsourcing project is like planning a party. You think about who you want to invite, create nice invitations, do the work to tidy up so it looks nice when they arrive... When people arrive, you stay in the room with them (you don't lock yourself in the bathroom). Being a host takes time. You have to put time and energy into community interaction and marketing.

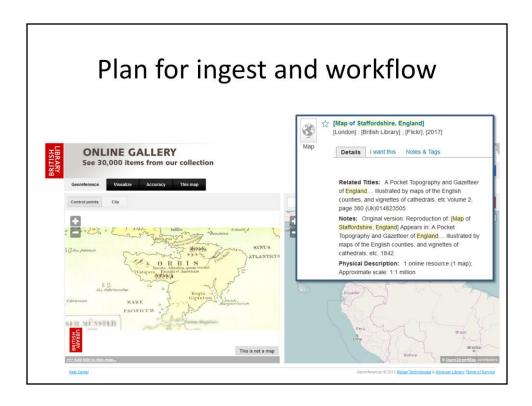
Prepare for window shopping



Design is important because there lots of projects around; people will compare yours to others they're tried. If they don't like what they see, they'll walk on.



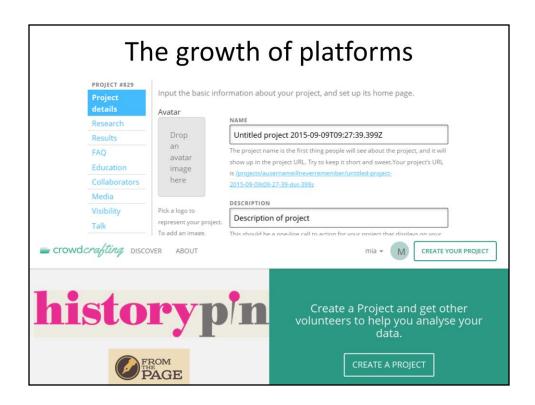
If a project is going to add to or change their roles, how can you support staff members in this? Do they have the skills to manage technical aspects of workflow or social aspects of community interaction?



Because it wasn't planned from the start, it took a long time to get data from the British Library Georeferencer project into the catalogue as MARC (library format) records. Conversely, changes to Trove text are 'live' immediately.

Getting material from crowdsourcing project into collections management systems, finding aids, etc, is often forgotten or delayed because it's quite hard, but you should plan technical workflow from the start.





Opportunity – easier than ever before to try it out! Less time thinking about tech; more time thinking about people.



On the right, a project using crowdsourcing as input into process of teaching computers to read handwriting. In the background, Flickr learnt how to label animals from tags added by people.



谢谢 Questions?

Dr. Mia Ridge, @mia_out Digital Curator, British Library

Chinese Association of Museums

Taipei, Taiwan, August 2017

| Communities of practice as 'social learning systems' | | | |
|--|---|--------------------------|--|
| | Learning the Ropes & FAQ Introduction to marking and transcribing our whaling ship logs | 259 Posts 7 Topics | Last post by Randi in Re: Report technical pro on October 21, 2015, 07:55:32 pm |
| | Whalers' Shipyard Talk about your ship and crew, and ask ship-specific questions | 145 Posts 38 Topics | Last post by Janet Jaguar in Re: Milo - Discussion on October 21, 2015, 03:58:01 pm |
| Questions and Answers | | | |
| | The Dockyard Ship information and transcribing assistance Moderators: Hanball94, propriome, AvastMH | 11537 Posts 91 Topics | Last post by Hanibal94 in Re: Jamestown (1844) on October 27, 2015, 01:40:54 pm |
| | Handwriting Help Finding the handwriting hard to read? | 2110 Posts 151 Topics | Last post by Randi in Re: Received on board on on October 13, 2015, 12:20:05 pm |
| | The Logs and FAQ General questions and observations Moderator: Kathy | 3116 Posts 159 Topics | Last post by Pommy Stuart in Re: Barometers, Instrume on October 22, 2015, 09:36:16 pm |
| Library | | | |
| | Reference Desk Find useful links and interesting information here | 202 Posts 26 Topics | Last post by Janet Jaguar in Re: Sea Ice Types on September 30, 2015, 11:49:57 pm |
| | Geographical Help Tools for finding the names of towns, bays, points, islands, lighthouses and other landmarks Moderators: propriome, AvastMH | 629 Posts 26 Topics | Last post by propriome in Re: Canadian Place Names on October 26, 2015, 01:26:41 pm |
| | What Does THAT Mean? Get help with specific text | 1310 Posts 137 Topics | Last post by Janet Jaguar in Re: Terms found in whali on October 01, 2015, 12:23:39 am |

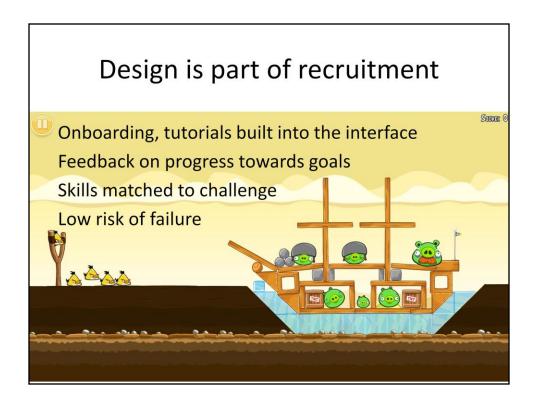
At their best, participant forums become communities of practice, which in turn support learning. In CoPs, newcomers 'learn and acquire knowledge through participating in everyday activity with colleagues'. Online forums support many of the activities typical of communities of practice, including problem solving, making and answering requests for information, coordinating activities and undertaking documentation projects. Online communities of practice develop 'a shared repertoire of resources' including 'experiences, stories, tools, ways of addressing recurring problems'. While the original theoretical work on communities of practice involved in-person discussion, online communication, including social media, forums and discussion lists, similarly show many traces of the development of shared practices.



My division of motivations; others may be different.



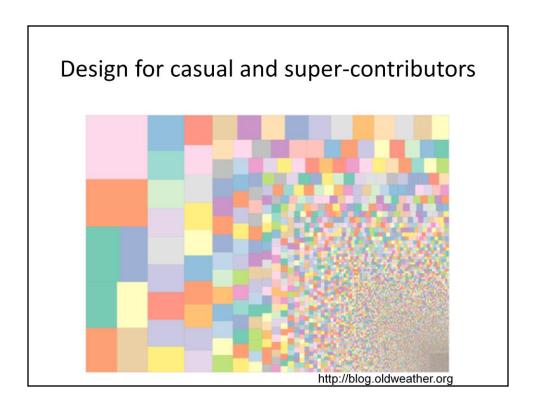
Another way of looking at it.. Source: http://www.aam-us.org/resources/publications/museum-magazine/museums-as-happiness-engineers and http://www.youtube.com/watch?v=zJ9j7klZuoQ&feature=plcp



Design really matters, but museums aren't always equipped to work on this.

Finnish example! Easy-to-learn game-play; Simple controls; 'Forgiving' game-play with low risk of failure; Carefully managed complexity levels with a shallow learning curve, guidance through early levels, and inclusive, accessible themes; Sense of rapid progress and achievement = flow!

Build any tests for skill or experience requirements into the interface; Build tutorials for new skills into application at the point where its needed; provide good feedback on actions

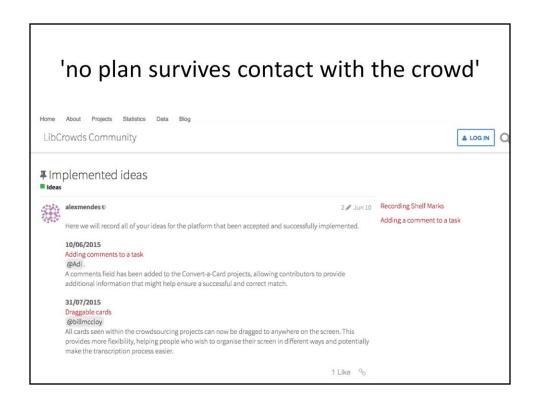


Designing for a range of users can be difficult. Some people do a lot of the work, and a lot of people do some of the work. This represents all 16,400 people who have transcribed at least one page for Old Weather (back in 2012)

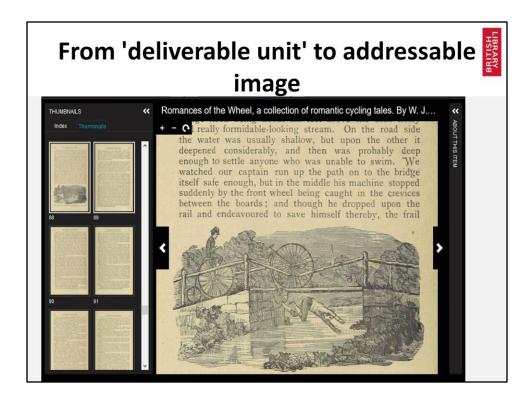
Source: http://blog.oldweather.org/2012/09/05/theres-a-green-one-and-a-pink-one-and-a-blue-one-and-a-yellow-one/



Transcribing information ('indexing') 'The FamilySearch Indexing app simplifies indexing by allowing you to transcribe individual names, or "snippets," on your mobile device instead of downloading larger batches of names that must all be transcribed as part of a group. (You also have the option to view the entire document so you can see the name in context.) You can set a difficulty level and skip snippets that are too hard to read. ...To increase indexing accuracy, the app requires snippets to have a 75% consensus to be approved, at least for the app's initial pilot period. ... That number may be adjusted later as genealogists determine the most effective confirmation rate.' Source: https://tech.lds.org/blog/455-new-familysearch-indexing-app-now-available



Projects change once a community finds them. Allow time to update after launch as things will need to be tweaked and participants often have good ideas. Online projects aren't like exhibitions – you need to keep working on them after launch.



The library's spent over a century honing the art of delivering the physical thing that someone requests to the reading room. This 'deliverable unit' seems obvious if you've ordered a book, but it's less so if you've ordered a manuscript or archive document. You may get a box of documents or a bound volume of manuscripts. Often, the catalogue only contains records for the deliverable item - the book, the box, the volume; not the document, the chapter, the page.

An image like this could have a life of its own on Flickr Commons, where it could be tagged with new terms and links. But it's not easy to honour that work by adding all that extra information back into the catalogue. There's a mismatch in granularity that'll take some time to resolve before we can make items addressable at the manuscript, page and image level in order to capture transcriptions, tags and links that enhance the record.