On Being Open

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We've made it. We've re-made it. We've designed it. We've re-designed it. We've coded it. We've re-coded it. And what have we learned? The papers at Museums and the Web 2009 take stock of the strategies, technologies and methods museums are now using on the Web. Some provide examples of best practice, or case studies that raise interesting questions. Others outline theoretical frameworks that help us understand it all. A few point out new directions we might take as we struggle with the additive nature of the social Web. As yet another layer – of information, interpretation, interaction or experience – is added to what we do, how do we pull it all together? Thank heavens for the experiences our colleagues are willing to share.

What Has Web 2.0 Wrought?

Museums are still digesting social Web technologies, evaluating the experience, turning experiments into programs, and building sustainable successes on top of one-off prototypes. We started by experimenting to see how social media could be deployed. Then, we began to systematically consider who to engage and how best to involve them. Now we are beginning to examine how these technologies are reframing organizational behavior and evaluating what makes them successful. Not surprisingly, we are discovering that social applications require a lot of care and feeding. They only work when we carefully address the needs of specific audiences with appropriate functions – lessons it seems we need to relearn with every wave of new applications.

Ironically, disruptive technologies don't just disrupt the existing methods of delivering our content, they change the very institutions that deploy them by suggesting new missions and offering new goals. While we may think we are simply seeking an alternative to consuming gasoline in our long commute to work, our objective shifts to getting exercise from bicycling or meeting new friends through carpooling. The same shift is happening in museums. Nina Simon plays with how 'Going Digital', and particularly going 'Web 2.0', has created models on-line that museums might want to emulate in the physical world. How, she wonders, could we translate the features that users appreciate on-line into properties they encounter inside our physical walls? Are these social and participatory goals for museums in all their programs?

To begin to answer this question, we need to understand which Web 2.0 features users appreciate – and what they might be put off by – realizing there is a complex interaction between types of features and groups of users. Typically as new

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technologies are made available we see a rush to implementation, followed by a period of active diffusion, and ultimately assessment, as the reality of the costs and benefits begins to set in. Darren Peacock and Angelina Russo have situated such an assessment of social technologies in museums within the vast array of theoretical literature on the subject. They look at museum implementations of blogs, wikis, podcasts, vodcasts, photo and video sharing and other new opportunities for audiences to engage with museums through co-creation of content, seeking to find out what motivates users, and what satisfies them, especially since only a small percentage of users actively contribute content. Finding that participation (both passive and active) builds relationships and engenders satisfaction, Russo and Peacock underline the necessity – and difficulty – of designing for participation, and the challenge of sustaining it over time.

Two case studies provide concrete examples of the imperatives of designing for participation, and ensuring ongoing care and feeding of communities. Frankie Roberto and Rhiannon Looseley (in their case study of the Science Museum Object Wiki and The British Postal Museum & Archive Wiki) and the staff of the Minnesota Historical Society (in their comparison of their second generation placeography wiki with their own earlier effort) all stress that sustained contribution from the public is a response to both on-going outreach activity that encourages and rewards participation, and interface design that makes contributing easy and integral to the process. The British wikis suffered from a bit of vandalism and users were unwilling to edit pre-existing data – despite their willingness to contribute new, and often personally significant, information. Users of the Minnesota wikis also resisted editing content that was already there, though more actively recruited users and volunteers could be 'trained' to engage in some content enhancement. In all these projects, promotion of the wiki and its purposes was an on-going, labour-intensive task, crucial to sustaining participation. If we build it, they don't just come: if we want them to come, we must invite them, greet them, help them, introduce them to others who are there, demonstrate the value of their contribution, and even reward them.

Perhaps the most extreme meeting of the social space of the Web and the real space of the museum – and the most direct test of the thesis that sustaining participation requires inviting and receiving guests – took place at the Ontario Science Center in 2008. Kevin von Appen and his colleagues report on a YouTube meetup that brought 460 participants to a museum-sponsored event in mid-August; thousands more watched it on-line, and more than 2.3 million were estimated to have heard about it through media exposure. The OSC reached a youth audience it does not typically attract directly, and saw over 880,000 views of video with almost 14,000 comments within weeks of the event. It is clear that the virtual audience enjoyed the physical meetup, but we don't know how much they learned about science.

An in-depth examination of a very demanding social interaction space – Science Buzz at the Science Museum of Minnesota – reinforces the lesson from the wikis that sustaining participation is difficult, and suggests an answer to what active

participants learn through engagement. Jeff Grabill and his colleagues at Michigan State University undertook a multi-year study of some Web 2.0 experiments in museums. They asked what kind of community was built around Science Buzz, and what participants actually did. From the perspective of museum educators, their findings are important and novel; participants engaged around specific issues of interest to them, and used a strategy of making personal connections and claims. By engaging in these particular forms of discourse, Grabill and his co-authors reason, the active users of Science Buzz learn about each other and about the issues – without direct intervention from museum educators telling them what is 'right'.

Education and Evaluation

The institutional lesson, that education occurs without direct teaching by museum staff, is at the heart of the constructivist learning models popular with museum educators for at least a decade. But in practice, adjusting to the social Web requires considerable change in the methods and attitude of museum educators. And balancing the social Web with the information needs of in-gallery museum visitors requires re-thinking our approaches. Peter Samis and Stephanie Pau identify the tensions and the insights that led to reassessment of educational strategies in the physical and virtual spaces at the San Francisco Museum of Modern Art. The first, uncomfortable finding of earlier studies was that interactive multimedia experiences delivered on-line, in learning centers on-site, and through user devices had much less use and impact than traditional museum wall labels and audio tours. So the interactive multimedia staff needed to work with authors of traditional media, and think about content use in gallery spaces, if they were to deliver their message when and where it was needed. Samis and Pau offer evaluations of media use in three exhibits that reveal a dissatisfaction with cell phone technology. While one on-line podcast had a respectable download rate, in-museum devices were most popular. Encouragingly, those who used downloaded or museum-provided tours were significantly more satisfied by their visit; Samis and Pau conclude that multimedia tours should be provided without cost to anyone who wants them – included in the price of admission – since they evidently improve the visitor experience.

A similar re-evaluation of museum-created interactive multimedia resulted from an evaluation of teachers' use of museum Web resources in the United Kingdom. Martin Bazley and Mariruth Leftwich report that when they looked beneath the Web log data that showed a large number of accesses by educators, into the details of what content was being used, by whom and how, they discovered that the expressed interest of teachers in games and rich interactive experiences was not reflected in their actual use of museum resources. Teachers mainly used item-level collections documentation with low levels of integration and only outlines of possible usage scenarios. Interesting images, video or audio assets with loose demands for integrated use (in the ways envisioned by museum educators) were preferred over more highly developed on-line narratives and games requiring

extended attention and pre-defined delivery methods. So where museums might be tempted (based on what teachers say) to invest in heavy-weight, expensive educational packages, what the teachers used in their classrooms was nearer to raw material.

This finding did not simply reflect teachers' desire to control their own curricula. Kids, when given a similar choice, felt the same way. The very 'learning' oriented Tate children's site prior to July 2008 contained heavily-authored resources that were getting a tiny number of visitors (580 a day) and retaining their attention for a brief time (1.5 minutes). Adding a set of social functionalities ("upload own art" and "collect that of others"), and simple content creation ("paint on-line") functions, rapidly doubled the number of users, and tripled the amount of time kids spent on-site. Kids, it seems, preferred to put things together on their own too. The success of city games, in which kids conduct real world treasure hunts from on-line virtual clues, attests to the 'simplicity often succeeds where complexity would fail' principle (see Botturi et al., and Gabriëls et al., in the MW2009 *Proceedings*).

Rich content creators need not despair, entirely. It is possible to create a highly educational, and highly time demanding, on-line experience and draw huge audiences of kids. But it requires immense effort and a willingness to craft an open-ended experience rather than a finished narrative. In their evaluation of the on-line multi-layer game WolfQuest, Kate Haley Goldman, David Schaller and their colleagues explore what made this game a success: continuing to draw players and teaching them what the designers intended for them to learn. They also explore how the social component of playing and working together contributed to both the learning and the persistence in playing. This explicitly theoretically grounded design process – and the evaluation of its assumptions – serves as a model for educators, when crafting experiences and assessing their successes or failures.

WolfQuest has seen 600,000 posts to their forum and 250,000 downloads of the game in 14 months. A different strategy of intensive engagement was pursued by the Smithsonian American Art Museum, in their Alternate Reality Game, "Ghosts of a Chance". Over three months 6,100 people participated on-line; 244 joined on-site quests that involved 3-5 hours in the museum. The highly imaginative staff involvement outlined by Georgina Bath Goodlander, the complex nature of the game, and the in-depth involvement of its players, reveal a scenario that many museums will find challenging to emulate. Yet the result is clearly a kind of involvement with museums that mixes virtual with physical to an extent previously impossible, and hugely engages a small, but arguably otherwise unreachable, audience. Once again, the museums stepped aside to let the interaction happen. To paraphrase Schaller et al.: "It's their game. We just made it.".

[Re] Design

These ruthless evaluations of our successes and failures, and brave efforts to launch novel social and intellectual experiments on-line and in-house, are inspir-

ing a redesign of the museum Web experience in institutions worldwide. The first generations of museum Web sites have clearly been eclipsed; the designs of new sites at major institutions are different in concept and scope than those that preceded them. This phase of re-design engages a much broader cross-section of museum staff, and raises profound questions about museum missions, operations, and the monopoly of experts in a climate of openness.

Those responsible for such redesign efforts at The Museum of Modern Art, National Gallery of Art (Washington), San Francisco Museum of Modern Art and The National Gallery (United Kingdom) have collectively reported their experience and recommendations. Organizationally, the most significant change was that the people involved in thinking through this change came from many departments and worked on it for many years, a sustained effort that sits in striking contrast to earlier, more ad hoc, developments. Few museum projects command this level of attention and commitment. Institutionally, museums found they needed to reassess the museum's audience and its mission; most discovered they needed outside help to act on their findings. Intellectually, the teams learned that rigorously defining goals was a difficult task that would prove iterative and tentative, and that they would need to revisit, revise and recommit both before and after re-launch. Yet the most surprising result may be that these reconceived Web sites are still very familiar. They remain destinations on the Web, not a set of redistributed functionalities. They have sociable aspects, but are still clearly museum driven. They are silos of content with only minimal, and non-systematic, connections to other museums. The institutional Web site has not fundamentally changed purpose, even if its designers engaged non-museum actors in their design process.

The redesign of the more consciously collective ArtConnectEd site was similar. As Robin Dowden and Scott Sayre report, this ten-year-old, multi-institutional K-12 educators' site also required extensive redesign, though foundationally it contained the seeds of its own redevelopment. Though the initial site was rooted more in technological and funding initiatives than in a response to educational needs, it did build simple 'art collector' or 'my gallery' tools that turned out to be the architectural skeleton of a redesigned site, built around the functions of find and gather. Add a bit of user-contributed content functionality and voila – nouvelle cuisine – four courses in the same order served on smaller and prettier plates.

Some dissatisfaction with redesign is evident. Adriana Olmos, Steffen Böddeker and Alexandra McIntosh of the Canadian Centre for Architecture (CCA) report their search for alternative means of finding museum content. We know that the public find searching for something they don't know very much about, in some place they don't know has it, using language whose meaning is understood differently by lay people and experts, with documentation written from a perspective they can't understand, yields less than satisfactory results. However, search is still one of the main options for finding things on museum Web sites. The CCA wondered if new browsing approaches, involving user-assigned tags, timelines, calendars, and contextualized content would help users achieve task-oriented goals. When they modeled a number of alternative methods of browsing, they discovered users liked them insofar as they understood how and why they were being presented.

However, search is a beginning, not an end in itself, and we still don't know enough about what users do with the content they find.

The Canada Science and Technology Museum (CSTM) began their redesign of the on-line display of an archival image collection by examining its actual use by the public. Like the CCA, they discovered that users browsed for content, sometimes quite randomly, sometimes guided by a topic. Users imagined themselves examining a collection more than searching a database, and overwhelmingly said they would willingly contribute information if they knew something of interest. In the end, CSTM researchers also felt a need understand the motivations of their users in order to design more appropriate tools.

Where Are We Heading?

The Web promised readily-available, linked knowledge, built on connections between things. There can be no question that many imaginative things have been constructed on-line; stimulating experiences can be had at many museum Web sites. But in sum, the experience of culture on-line reflects the limitations of our repositories in the real world – it can seem isolated, arbitrary, incoherent and transitory. Our on-line investments risk being as non-cumulative and unsustainable as our traditional on-site exhibits and in-house educational programming has always been.

Some techies, museum managers, and outsiders are dissatisfied with the limits in museum Web design, and seek a clear break from the past. They see a number of habits of system design interfering with the fundamental reconceptualization of the architecture of museum space on-line. The problem, as they see it, is that the museum Web site cannot succeed as an island unto itself. Redesigning the museum Web site is akin to bringing in urban designers to plan a new downtown while the sea levels are rising and will soon drown the entire region. Re-architecting is more like changing social habits and realigning population centers to achieve sustainability across centuries.

Paul Rowe and Wallis Barnicoat propose a simple architectural model that effects a radical change: put the collections system in the cloud and enable access across what have been individual museum silos to the NZMuseums Web. Driven largely by the limited economic capacity and technical support available to tiny museums in New Zealand, they effectively placed a robust commercial software system in a cloud server and sold shares, with the consequence that the public obtains a simultaneous view of the collections of many museums, while the museums have management capabilities for their own collections that they would not have been able to afford on their own. What is new, interesting, and important is that they have done it. It's live and working.

An alternate solution, resulting from similar requirements, is the approach of one small US archive. Ari Davidow explains that the Jewish Women's Archive has 6TB of Oral Histories but not much technical support. Wishing to make its content widely available without having to develop its own solutions to everything or even manage its own data on-line, they have cobbled together a series of clever partial solutions to achieve an architecture that could be a model for others. Cloud storage, Open Source software, and content-management solutions that are easily implemented by non-technical people make for a radically different archive/museum audio content service implementation, though end-users may feel it is quite familiar.

There is nothing familiar in Aaron Cope's re-architecting of cultural content delivery. Starting with the novel concept (to most) of reverse geo-coding, he shows us how to re-architect the contents of museums to locate them in physical spaces worldwide – to put the content of museums into the space that their audience inhabits. And then, like the traffic engineer following cell phone paths to diagnose traffic congestion, he uses the effects of user-contributed content (Flickr photos) to redraw the boundaries of cities! The post-hoc collation of content tells a story that we otherwise could never know. This example of drawing knowledge out of assembled artefacts points towards future uses of aggregated museum collections.

And if we do gather the contents of museums from their Web sites, as Dan Zambonini and Mike Ellis suggest in the project to which they have given the tongue in cheek name "hoard.it", what then? What if we "aggregate, mine and display object-data without consent" (to paraphrase slightly)? Well first, it doesn't work very well. But if we overlook that technical triviality (for certainly we could improve it by lots of smart tweaks), what we have is a fundamental reconceptualization of how to build the collective cultural heritage content library; not with standards and conventions, contracts and protocols, but simply by borrowing the metadata others have left outside. Will it work? Or will it goad us into designing a new kind of solution?

Data interchange has been the focus of museum standards work for more than 20 years, but standard data formats never achieved adherence from museums because so much was demanded and so little was returned. Yet a small amount of conformance to simple APIs could buy a great deal of benefit. We have seen numerous instances of collections displayed on Google maps this past year through the simple expedient of articulating object locations using conventions of geolocation APIs – like Tate's use of Google street views (Tate 2009), or the work in Philadelphia described by Megan Heckert in the MW2009 *Proceedings*. There are numerous examples of linking to Wikipedia, Flickr, YouTube, MySpace and other social networks, showing equally thin and easy to use APIs bearing fruit. But what about the museum-to-museum relationships?

Next Generation Interchange … talking to ourselves pushes us forward

The real excitement of the museum Web this year isn't focused on collections or exhibitions; it's in the voices heard in professional blogs and Twitter traffic. Museums now have a continuous dialogue on and about the Web. A conversation of great value is being conducted year-round, by hundreds of people from dozens of countries. Archives & Museum Informatics has made an effort to collate some of this fascinating traffic in the on-line community at conference.archimuse.com. We're now learning more about projects as they happen. The ideas, provocations and, occasionally, solutions are moving us ahead, more quickly and intelligently. Transparency is coming not just to our institutions but also to our professional practice.

This openness to interchange is one of the best things about our community. Keep up the cacophony. The challenges engender creative solutions.

References

Tate 2009. Tate collections shown on Google street views http://maps.google.co.uk/maps/mpl?moduleurl=http://www.svmapplets.com/sv/tate/mapplet.xml