Art Museums and the Mobile Web: an Investigation of the State of the Art and Recommendations for Future Directions

Need and Rationale

Art museums have been at the forefront of offering their visitors learning experiences that extend beyond traditional exhibit labels with gallery kiosks and audio guides. Often these ventures required significant investments in hardware and maintenance, both for kiosks and for audio systems.

More recently, some museums have added cell phone tours and podcasts in an effort to capitalize on the commonly-owned portable devices—iPods, MP3 players, Blackberries, cell phones—that visitors already carry in their pockets. For example, the Walker Art Center's Art on Call program allows users to access audio recordings in the galleries by way of a cell phone. This venture mimics the traditional gallery audio tour, but eliminates the need for the institution to purchase and maintain a large number of listening devices. The San Jose Museum of Art has taken this concept one step further by experimenting with extended tours for use with personal iPhones or iPod Touches rented at the museum. These experiments in delivering audio and video content represent an exciting innovation in visitor experiences, but barely skim the surface of what may be possible for art museums if they capitalize on the potential of mobile devices.[1]

Several established companies, such as Museum 411 and Guide by Cell, exist to design cellphone tours. These industry leaders facilitate mobile content delivery for museums, but have not explored other options beyond the cellphone tour. As the New Media Consortium's _Horizon Report_ suggests, such narrow thinking does not consider the great potential of reaching visitors who regularly carry and use mobile devices not only to make phone calls but to post to their blogs or send photos to social networking sites such as Facebook. [2] With 75 percent of American adults owning mobile phones and 62 percent accessing non-voice data through wireless or mobile equipment, art museums of all sizes should be thinking about how to reach out to their visitors through devices that can provide rich, regularly updated, content away from the exhibit floor.[3]

While some case study research has been conducted to evaluate mobile technology usage in gallery spaces and how those experiences shape visitor learning outcomes, art museum curators and educators may be confused as to what strategies and technologies best suits the needs of their institutions.[4] Little has been done to assess the status of mobile technologies for museums. To maintain a leading edge in designing and developing interactive educational experiences for their visitors, art museums need a comprehensive survey of existing projects and technology and recommendations about what is to come in the future.

With seed funding from the Kress Foundation, we propose to write a white paper that investigates this issue and makes concrete recommendations for art museums on how best to use these new applications to engage visitors with visual art objects. Accompanying this white paper will be prototypes or models, based upon our research, for creating a mobile-specific application.

The Center for History and New Media (CHNM) is the ideal organization to undertake this work with over a dozen years of experience in creating new media for museums and digital humanities organizations, such as the Smithsonian Institution and National Park Service. As

a leader in using digital media to improve the public's understanding of history, CHNM also helps museums of all genres, libraries, and scholars explore new and effective ways to use digital materials and methods by developing free tools and software, and presenting and publishing research in public forums.

Our research will include:

- a summary of the (limited) existing research;
- an evaluation of the potential technologies such as:
    - downloadable stand-alone applications,
    - Short Message Service and Multimedia Message Service technology,
    - microblogging and interactive contribution systems,
    - and geolocated content delivery;
- a set of recommendations for technologies and programming platforms that will best serve the institutional needs of museums without proving a significant financial burden;
- and, finally, we will build series of rough prototypes and styles for mobile access based on those recommendations as proofs of concept.

Plan of Work

1. Survey: We will conduct two distinct surveys. First, we will evaluate the projects that all museums are undertaking with respect to mobile device usage. Art museums are doing good work, but there is much to be learned from activity in science and history museums. Second, we will investigate the current state of the art in mobile content delivery, consulting the community of designers and programmers who are struggling with the constraints of technology for traditional cellphones, smart phones, the iPhone, and Google's new Android OS.

2. Recommendations: After careful analysis of our survey results, we will make recommendations on best practices and ways to implement mobile technologies in art museums.

3. Publication: We will make our survey data, results, and recommendations available to the art museum community by publishing the results on the CHNM website, and presenting them at various conferences dealing with new media for museums, such as Museums and the Web, and WebWise.

4. Prototypes: We will construct a series of rough prototypes based on our recommendations. These prototypes will sample content delivery possibilities and point to the adaptations that museums will need to make to facilitate interactivity on both the iPhone and Android platforms, as well as CSS options for mobile browsers. Though they will not constitute fully formed software, they will serve as proof of concept for our recommendations.

Timetable

October-December, 2008: Survey and research breadth of mobile technology usage in museums; investigate current state of the art in mobile content delivery.

January-April 2009: Compile, analyze, write up survey results. Construct and test prototypes based on our research and recommendations.

April-June 2009: Publish white paper and present results and recommendations. Launch accompanying prototypes.

Staff (CVs and budget attached)

Sharon Leon (Project Director) will have overall responsibility for the execution of the project and the management of the budget. She will author a substantial portion of the final publication, particularly the recommendations for future directions.

Sheila Brennan (Project Manager) will conduct the survey of existing mobile technology usage in museums and compile the results. She will author that section of the final publication. Finally, Brennan will coordinate the outreach and publicity for the project.

Dave Lester (Technology Evaluation) will conduct the survey of technology for mobile content delivery. He will author that section of the final publication. He will also take the lead on building the prototypes for new content delivery schemes.

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[1] Dan Goodin, "Museums Find an Unlikely Ally: The Cellphone," *USA Today*, March 19, 2006, http://www.usatoday.com/tech/news/techinnovations/2006-03-19-cell-museum-tours_x.htm; Some organizations are aggregating podcasts, mobile phone tours that can be accessed from a mobile device or via the desktop web, MuseumPods the Social Media Network, "Museum Media Directories," http://www.museumpods.com/id394.html. Walker Art Center, *Art on Call*, http://newmedia.walkerart.org/aoc/index.wac. San Jose Museum of Art's interactive guide may be accessed via the web: http://www.sjmusart.org/m/#_home.

[2] New Media Consortium and EDUCAUSE Learning Initiative, "The Horizon Report" (New Media Consortium, 2008), 17-18, available at: http://www.nmc.org/pdf/2008-Horizon-Report.pdf; Web designer Cameron Moll cautions other designers not to fall into "PC Nearsightedness" when designing for mobile devices; mobile applications should be designed with mobile device in mind. Cameron Moll, *Mobile Web Design* (Lulu.com, 2008), 27.

[3] Pew Internet and American Life Project, "Mobile Access to Data and Information," (March 2008). Report found at: http://www.pewinternet.org/pdfs/PIP_Mobile.Data.Access.pdf.

[4] For research on mobile technologies in museum environments, see: Anne Ison, Alex Hayes, Sandra Robinson, Jill Jamieson, "Txt Me: supporting disengaged youth using mobile technologies", (November 2004) http://pre2005.flexiblelearning.net.au/projects/media/txt_me_recommendations.pdf;
Bressler D., "Mobile Phones: A New Way To Engage Teenagers In Informal Science Learning," in J. Trant and D. Bearman (eds.). *Museums and the Web 2006: Proceedings*, Toronto: Archives & Museum Informatics, published March 1, 2006 at http://www.archimuse.com/mw2006/papers/bressler/bressler.html; Haley Goldman, K., "Cell Phones and Exhibitions 2.O: Moving beyond the Pilot Stage," In J. Trant and D. Bearman (eds). *Museums and the Web 2007: Proceedings*. Toronto: Archives & Museum

Informatics, published March 31, 2007 at http://www.archimuse.com/mw2007/papers/haleyGoldman/haleyGoldman.html; Proctor, N., "When In Roam: Visitor Response To Phone Tour Pilots In The US And Europe," in J. Trant and D. Bearman (eds). *Museums and the Web 2007: Proceedings*. Toronto: Archives & Museum Informatics, published March 31, 2007 at http://www.archimuse.com/mw2007/papers/proctor/proctor.html; Walker, K., "Visitor-Constructed Personalized Learning Trails," in J. Trant and D. Bearman (eds). *Museums and the Web 2007: Proceedings*. Toronto: Archives & Museum Informatics, published March 31, 2007 at http://www.archimuse.com/mw2007/papers/walker/walker.html.