

# Report to the Heritage Agency of Denmark

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## Image sharing and mobile strategies

### Research visit at US cultural heritage institutions

*Pulje 5 – International erfaringssudveksling og kompetencegivende efteruddannelse  
[International exchange of experience and competence providing training]*

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## **Field of research**

The research visit investigates digital media in museums, with specific focus on strategies for open access to museum resources, and integration of mobile platforms into the museum experience.

## **Duration and content of the research visit**

### Washington D.C.: October 1 – 15 2011

Meetings with:

- The Smithsonian Institution (SI)
- Smithsonian American Art Museum
- National Museum of Natural History
- Hirshhorn Museum and Sculpture Garden
- National Gallery of Art (NGA)
- United States Holocaust Memorial Museum
- American Association of Museums

### New York City: October 15 – 22 2011

Meetings with:

- Museum of Modern Art (MoMA)
- The Metropolitan Museum of Art (The Met)
- Whitney Museum of American Art
- The Morgan Library & Museum
- LearningTimes

### Chicago: October 22 – 24 2011

Meetings with:

- Art Institute of Chicago (AIC)
- The MacArthur Foundation

## **Primary target group**

Statens Museum for Kunst, and museum professionals in Denmark and abroad.

## **Objective of the research visit**

There are five primary objectives of the visit:

1. Investigate how digital media technologies, strategies, and platforms are being implemented in US cultural heritage institutions
2. Test the assumption that free and unrestricted access to digitized resources creates more value (museum collections gain new relevance to users as users gain ownership of museum resources)
3. Build and strengthen relations with US cultural heritage institutions working towards greater openness in the wake of the Web 2.0 paradigm shift
4. Extend those networks to the Danish museum community by sharing learnings at conferences, in professional forums, and on social media platforms
5. Strengthen the strategic position of digital media in the SMK organisation by referring to an international network of peers.

## **Results and educational benefits of the research visit**

Being on a month long research visit, I picked up an exorbitant amount of interesting learnings from a broad range of museum professionals. The strongest tendencies, and the ones that I find most important and applicable to SMK and Danish museums in general, are listed and elaborated below.

### **1. Sharing is caring: Setting it free creates more value**

To follow up on the pilot project "Image sharing and development of digital tools"<sup>1</sup>, a core ambition of the research visit was to learn from cultural heritage institutions in the US who are, or are considering, to share their digitized resources more openly.

One of the key issues investigated in the pilot project was: Is it feasible for museums to change from charging end users and each other for using their high resolution (hires) digital images, to sharing them for free? In recent years, a number of museums around the world have begun to offer their digitized images at different levels of free use<sup>2</sup>; some restricted to non-commercial

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<sup>1</sup> Conducted by five Danish art museums (Funen Art Museum, Vejle Museum of Art, KUNSTEN Museum of Modern Art, The Hirschsprung Collection, and Statens Museum for Kunst) 2009-11, and supported by the National Heritage Agency. Report in Danish here <http://www.formidlingsnet.dk/fri-billeddeling-nu>

<sup>2</sup> Among others Yale University Museum, Library, and Archive Collections, Los Angeles County Museum of Art, Walters Art Museum, British Museum, and Victoria & Albert Museum.

educational and scholarly use only (like British Museum), others providing unrestricted access for all purposes (like Yale).

Meeting with, among others, representatives of The Smithsonian and National gallery of Art in Washington D.C., and The Metropolitan Museum in New York, I learned that large US museums are well on their way to release large quantities of hires images for free. NGA are preparing to release more than 60,000 images of artworks in their collections. The Met launched their new website (<http://www.metmuseum.org/>) in October 2011, providing free download of so far 192,375 hires images for non-commercial purposes. The Smithsonian is starting up a pilot project of the Smithsonian Commons, encompassing free access to a vast amount of digitized content.<sup>3</sup>

Cost-benefit analyses at these institutions have shown that costs and revenues on traditional image reproduction fees tend to even out. One example is the transactions between NGA and the Met. Once they made the calculation and discovered that they were charging each other almost exactly the same amount every year for reproduction of images from their respective collections, they decided to start sharing their images for free. When Yale University published the release of more than 250,000 hires images in May 2011 they referred to Simon Tanner's 2004 research report for The Mellon Foundation, *Reproduction charging models & rights policy for digital images in American art museums*<sup>4</sup> which showed that "the cost of managing intellectual property and maintaining payment structures in cultural heritage collections almost always outweigh actual revenue".

One thing is providing access to high quality digital renditions of artefacts.<sup>5</sup> Another is deciding what users can do with them. In its concept for a Smithsonian Commons, SI stresses the importance of not only giving users free access to look at high quality digital copies of heritage objects, but also to allow them to reuse images and related data in new and unforeseeable contexts. Only then will cultural heritage become a tool in the hands of new generations of users who are used to harvesting information, visuals, videos, audio, and knowledge, across the World Wide Web.

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<sup>3</sup> The pilot project is not made public yet, but a prototype is available here <http://www.si.edu/commonsprototype/> The ambition of the full-scale Smithsonian Commons project is to contain 100 million items, host 100 million user interactions a year, and generate 1 million hours a year of crowdsourcing effort from its communities.

<sup>4</sup> Full report available here [http://www.kdcs.kcl.ac.uk/fileadmin/documents/USMuseum\\_SimonTanner.pdf](http://www.kdcs.kcl.ac.uk/fileadmin/documents/USMuseum_SimonTanner.pdf)

<sup>5</sup> I should stress that the cases I am referring to pertain to free sharing of digital images of artworks and artefacts that are in the Public Domain. The question of how to make copyrighted resources available online in fair ways is not addressed in this report. Definitions of copyright and Public Domain varies between the US and Europe which makes it hard to say anything useful on this complex matter in a short report like this. However, I added links on the topic to the list of Resources p. 13 ff.

Within the US museum community, Yale's release of images in the Public Domain with no strings attached is perceived as an example that will lead the way for other cultural heritage institutions.

In the wake of this new openness, a number of the digital media museum professionals I met with were concerned with the giant tasks ahead in order to really benefit from the development. Erin Coburn, Chief Officer of Digital Media at The Met, stressed that many museums, including the one she is working at, need to update their metadata structures before they can begin to share their resources as Linked Open Data. This is one of the important issues that will be addressed at this year's international seminar "Sharing is Caring".<sup>6</sup>

Another issue concerning open sharing of data is public-private partnerships in data management, exemplified by Google Art Project where museums around the globe are sharing high quality images and data for free. Jeff Ubois of The MacArthur Foundation shared valuable insights on the pitfalls of public-private partnerships, and stressed the importance of never giving away the rights to digitized content in the Public Domain. Anyone should be allowed to build on top of free digitized raw materials.<sup>7</sup>

## **2. Don't build another Web 1.0 platform. Use existing platforms and social media**

Everywhere I went during my research visit, I heard the same phrase repeated over and over again: Museums should stop building bespoke websites and backends for every new project. They are expensive to develop and maintain, and are mainly built to impress our peers anyway. Instead, more and more digital media professionals in museums are saying that social media platforms like Youtube, Twitter, Flickr and Facebook, as well as Wikipedia/Wikimedia, are perfectly capable of sustaining most of the content museums publish – and a lot better at reaching existing and potential audiences and user groups. As Jeff Gates from The Smithsonian phrased it during an SI Webmasters Meeting: "Let other people build it, and the users will come." It is just a matter of finding the platform that meets your demands.

In the shared mobile project *Art Stories mobile*, that is being developed by nine Danish art museums as a follow-up on the pilot project "Image sharing and development of digital tools", we

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<sup>6</sup> The seminar will follow up on the 2011 seminar (see p. 12 for links and details) and take place on the 12/12/2012

<sup>7</sup> Jeff Ubois published an article about this topic in 2007  
<http://www.dlib.org/dlib/november07/kaufman/11kaufman.html>

have made it a dogma not to build a new platform. Instead we are exploring ways to put existing platforms into use.

### **3. Crowdsourcing: Help museums do work that matters**

On the very first day of my research visit, I had a meeting at the National Museum of Natural History with the team who developed the Encyclopedia of Life (<http://eol.org/>), an awe-inspiring project with the ambition to map every species on planet Earth. The EOL team realized long ago that they will not get very far with the project unless they collaborate with dedicated user communities around the globe to achieve their goal. EOL has actively recruited a rapidly growing community among teachers, students, citizen scientists, and amateurs who contribute valuable content to the platform. The statistics that are placed up front on eol.org shows with all due clarity that they are doing something right.

At The Smithsonian, Four Grand Challenges have been identified as landmarks for the institution's Strategic Plan: 1) Unlocking the Mysteries of the Universe, 2) Understanding and Sustaining a Biodiverse Planet, 3) Valuing World Cultures, and 4) Understanding the American Experience.<sup>8</sup> This is a no less awe-inspiring task and, as Michael Edson puts it, they *need* users to assist them in getting it done. Quite simply, they will never have sufficient staff to achieve it by themselves. And the overall experience of the museum professionals I met, who have worked with crowdsourcing, is that dedicated museum audiences are very qualified to help do valuable work.

During my stay at The Smithsonian, I assisted Michael Edson in doing research into websites that have proven successful in crowdsourcing knowledge creation and expansion. The result is published on the Smithsonian Wiki and, in the spirit of crowdsourcing, it is open for additional input.<sup>9</sup>

To sum up this chapter, here is some key advice on crowdsourcing from the experienced museum people I talked to:

- Get in touch with potential dedicated communities within your field of work
- Lower the barrier for participation – allow users to use their existing social media accounts
- Ask the right questions: Set users to meaningful tasks that will also give them value
- Plan how to manage user-generated content

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<sup>8</sup> <http://www.si.edu/ofg/GrandChallSOLAA.htm>

<sup>9</sup> <http://smithsonian-webstrategy.wikispaces.com/websites+that+get+1+million+hours+of+effort>

- Consider integrating badges<sup>10</sup> into crowdsourcing projects, in order to let users flash their achievements and affiliation with your institution

#### **4. Mobile strategies: Language that does work, or writing down what you're doing**

Museums around the globe are racing right now to develop mobile apps to make use of the educational and experiential potentials of smartphones and tablets. The development is happening at a pace that makes it hard to stop and think: Are the right decisions being made and the right tools offered to users, in sync with the overall mission statement of your institution? The two major institutions who hosted me – The Smithsonian and MoMA – have experimented with mobile platforms for some time, and I was eager to learn how they approach the question of developing and sustaining a mobile strategy. What I discovered was that these two institutions have quite different takes on mobile strategy, but both of them illustrate core issues that cultural heritage institutions need to consider when entering into the mobile field.

Nancy Proctor, Head of Mobile Strategy and Initiatives, is leading the process of defining an ambitious pan-institutional mobile strategy for The Smithsonian under the motto "Recruit the World".<sup>11</sup> She is part of a four-leaf clover strategic team who is working to build a coherent and sustainable strategy for all things digital at SI.<sup>12</sup> Here, strategy is a crucial tool to achieve a general paradigm shift at SI towards greater openness, inclusiveness, and collaboration with audiences. The Smithsonian is first and foremost a knowledge institution, not a museum collection. Therefore, when formulating how to incorporate mobile platforms into their strategy, their emphasis is on learning; on "the increase and diffusion of knowledge" as their mission statement says. Furthermore, The Smithsonian encompasses 28 museums and research centers, each of which enjoys a large degree of autonomy in their decision making and operations. Their list of mobile apps and websites is impressive, spanning from the Hirshhorn's iPad exhibition app on Yves Klein to the NMNH's MEanderthal app that lets you morph your facial features into Neanderthal shape.<sup>13</sup> Defining a pan-institutional mobile strategy that everyone will know and follow is a challenging undertaking that is addressed in "The Smithsonian Web and New Media Strategy".<sup>14</sup> At The Smithsonian, formulating a mobile strategy is an ongoing process that needs to be invested with

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<sup>10</sup> See for instance Mozilla's Open Badges <https://wiki.mozilla.org/Badges> and the Mozilla compliant BadgeStack Project <http://badgestackproject.org/>

<sup>11</sup> <http://smithsonian-webstrategy.wikispaces.com/Mobile+Strategic+Planning>

<sup>12</sup> The team consists of Nancy Proctor, Head of Mobile Strategy and Initiatives; Michael Edson, Director of Web and New Media Strategy; Günter Waibel, Director of Digitization Program Office; and Thornton Staples, Director of Research and Scientific Data Management.

<sup>13</sup> An overview of SI Mobile <http://si.edu/Connect/mobile>

<sup>14</sup> [http://smithsonian-webstrategy.wikispaces.com/file/view/20090729\\_Smithsonian-Web-New-Media-Strategy\\_v1.0.pdf](http://smithsonian-webstrategy.wikispaces.com/file/view/20090729_Smithsonian-Web-New-Media-Strategy_v1.0.pdf)

consistent effort to ensure it is a useful tool for the institution. As Michael Edson phrased it in his keynote at *Sharing is Caring*, Nov 11 2011 in Copenhagen, "strategy is language that does work".<sup>15</sup>

MoMA is at the forefront of mobile museum experiences, their award-winning iPad app AbExNY providing just one excellent example of their achievements.<sup>16</sup> According to Allegra Burnette, Creative Director of Digital Media, they are working on an evolving list of goals rather than a comprehensive statement like SI's "Recruit the World". Their strategy has been focused on creating a base mobile structure, and featuring the collection. Their mobile site offers a general MoMA app ("MoMA in your pocket") focusing on information access with a couple of places for interaction (for instance MoMA Snaps). The iPad app AbExNY was about exploring how they could feature exhibitions and works of art in the tablet format, as well as educational materials.<sup>17</sup> Since then, they have turned to creating mobile versions of exhibition sites, several of which were meant to extend the reach of the site into the exhibition as well as activities to reach new audiences.<sup>18</sup>

With all these productions for different mobile platforms, MoMA's strategy has been evolving very rapidly which means they have not yet set anything in writing to the degree that the Smithsonian has. The strategy of the MoMA Digital Media department so far has been to work cross-departmentally, building on their practical experiences with mobile as an evolving method to enhance and expand upon what the museum does with its collection, educational programs and audience.

Many museums are merely beginning to make their first experiences with mobile platforms. To them, here is some general advice from museum professionals experienced in how to develop smart and sustainable mobile experiences:

- Avoid the "mobile app graveyard". Build sustainable frameworks that can be repurposed and updated easily. A widespread mobile strategy among US museums is to build one mobile app for collections and another one for exhibitions that can be recycled in different shapes
- If possible, enable in-house development of mobile platforms in order to also keep the experience and tools in-house

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<sup>15</sup> <http://www.slideshare.net/edsonnm/michael-edson-let-us-go-boldly-into-the-future>

<sup>16</sup> [http://www.museumsandtheweb.com/forum/congratulations\\_to\\_the\\_mw2011\\_best\\_of\\_the\\_web\\_winners\\_\(Mobile\)](http://www.museumsandtheweb.com/forum/congratulations_to_the_mw2011_best_of_the_web_winners_(Mobile))

<sup>17</sup> An overview of MoMA Mobile <http://www.moma.org/explore/mobile/index>

<sup>18</sup> For instance *Talk to Me* <http://www.moma.org/interactives/exhibitions/2011/talktome/> and *Diego Rivera* <http://www.moma.org/interactives/exhibitions/2011/rivera/intro.php>

- Don't get carried away by what the technology can do. When deciding what kind of mobile platform you want to develop put the user experience, not the technology, at the centre of attention
- Consider whether to invest in building a native app. Quite a few of the digital media museum professionals I talked to had experienced that native apps are not feasible in the long run. Instead, many turn to web apps<sup>19</sup>

## 5. Strengthen in-house development teams

These years, museums are experiencing an acute need to rethink the composition of their staff. With new technologies emerging at high speed, and audiences expecting museums to offer digital media experiences, a lot of us are spending huge sums of money paying external companies to build websites and apps because we don't have the expertise ourselves within our organisations. This is a double loss, since the expertise that is achieved in the process does not stay inside the institution.

During my stay, I encountered some inspiring examples of museums that are staking on building strong in-house development teams, their argument being that it is more feasible in the long run, plus it enables them to become tech hubs that can assist colleague institutions by sharing tools and experiences in the museum community.

Indianapolis Museum of Art (IMA) makes a strong case in point. Their in-house developers have built the shared Online Scholarly Catalogue Initiative (OSCI) platform funded by the Getty Foundation and first put into use by Art Institute of Chicago in its online presentation of scholarly resources on their collections of Monet and Renoir.<sup>20</sup> The platform is developed as a shared tool between a number of US museums, and it is Open Source so other museums can enter into the collaboration as well.<sup>21</sup> IMA is sustained by The Getty Foundation to provide technical support in the years ahead for museums participating in the OSCI program.

Another example of the strength of in-house development is The Met's "Guitar Heroes" app – the very first exhibition app launched by the museum, and produced entirely in-house.<sup>22</sup> According to

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<sup>19</sup> This was strongly reiterated at the J. Boye conference (see p. 12) where most organizations reported they were de-emphasizing apps and instead investing in HTML5 web-based experiences that work seamlessly on a variety of mobile devices.

<sup>20</sup> <http://www.artic.edu/aic/books/online/index.html>

<sup>21</sup> See an introduction to OSCI and a list of participating museums here  
[http://www.getty.edu/foundation/funding/access/current/online\\_cataloging.html](http://www.getty.edu/foundation/funding/access/current/online_cataloging.html)

<sup>22</sup> <http://blog.metmuseum.org/guitarheroes/app/>

Erin Coburn, the decision to produce it themselves was made to demonstrate to the museum management that they *could*. From a Digital Media department perspective, there was common sense in making this point, in order to stop funds and expertise to leak from the museum, and instead keep it and build on it. The "Guitar Heroes" app proved a strong case internally at The Met. Subsequently, curators have been queuing up to ask the Digital Media department to make apps for their upcoming exhibitions. This has put focus on the need to prioritize and upgrade the department.

## **6. Online and print publication synergies**

The OSCl project also pertains to the topic of online publishing that is a fast growing enterprise in museums worldwide. Obvious benefits of online publishing are that content is made searchable, and can be easily updated and corrected, as opposed to print publications that are frozen in time. However, none of the museum professionals I talked to were in their minds to leave print publication behind altogether. On the contrary, they are looking to bring together the best of both worlds and let the two formats supplement each other.

At NGA, the Center for Advanced Studies in the Visual Arts has converted their annual publication from solely print to an online publication supplemented by print. Emails go out to everyone on their mailing list with a link to the online version. In addition, email subscribers are asked if they would like a print version of the publication mailed to them. The relatively few subscribers who say yes are provided with a print copy, saving NGA substantial amounts on print runs, postage and packing in comparison to the time when they sent out print copies to everyone. Simultaneously, statistics show that usage of their publication has gone up 10 times since they converted to online publication, which is easy to keep track of with free online statistic tools.

The OSCl project was initiated because museum professionals saw unutilized potentials for scholarly publications in terms of accessibility and outreach. OSCl

"...aims to transform how museums disseminate scholarly information about their permanent collections to make it available through web-based digital formats. The five-year initiative hopes to demonstrate that when art museums collaborate on innovative models for online scholarly catalogues, they will dramatically increase access to their collections, make available new, interdisciplinary research, and potentially revolutionize how object-based research is performed and utilized."<sup>23</sup>

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<sup>23</sup> See note 21

As the first version of OSCI has only very recently been launched in a pilot version by AIC, it is too soon to tell if it succeeds in achieving their ambitions. The yardstick that will be used to measure the platform's impact is increased and proper scholarly citation, and – from a technological perspective – the adoption of the OSCI platform by other museums.

## Concluding remarks

Obviously, there is much more to share from this research visit. However, to sum up very briefly on this richly faceted experience, a few general perspectives that I took home with me, pertaining to the five objectives of the research visit:

1. US cultural heritage institutions are embracing digital media in ways that Danish museums are so far mostly talking about. We have valuable lessons to learn on opening up our resources, engaging with communities, crowdsourcing, utilizing existing online and social media platforms, and investing in in-house technical production
2. Open access is a strong movement within the US museum community that is growing steadily and is likely to become an established practice as digital media practitioners gain more decision making power in museums
3. Technology can drive organisational change within museums, especially if institutions team up and work together. Pilot projects and cross institutional collaborations can be efficient ways to test new technologies and show fast results
4. Museum associations like AAM (American Association of Museums) and ODM (Association of Danish Museums) hold great potential to help drive organisational change by strengthening cross institutional collaboration and sharing of knowledge, expertise, and tools, as well as offering digital media training to museum managers and decision makers
5. Being able to refer to the development going on in international peer institutions has proven a strong change agent. Returning from the research visit to SMK with updated insights and a strong network behind me has heightened the attention and prioritization given to digital media issues at my institution. I warmly recommend the Danish museum community to use the opportunity offered by the National Heritage Agency to apply for *International exchange of experience and competence providing training*

A fun fact at the end: With a degree in Art History, I have often felt misplaced working professionally with digital media. During my research visit I discovered that, more often than not,

digital media museum professionals do not have technical backgrounds but are DIY learners – like me. Lesson learned: Digital media is a field in constant development but luckily, everyone can learn it by doing it.

## Sharing of research visit learnings

The learnings I obtained during this research visit have been shared in a number of professional forums and conferences:

### J. Boye Aarhus 2011 – Web and Intranet Conference <http://aarhus11.jboye.com/>

Aarhus, Nov 8-10 2011

- I gave the talk "Set it free to create more value" in the session *Digital Strategy and Governance – Dealing with new challenges in old organizations*, chaired by Michael Edson <http://aarhus11.jboye.com/session/digital-strategy-and-governance-session-3/>
- Slides are available at <http://www.slideshare.net/MereteSanderhoff/set-it-free-to-create-more-value-09112011>

### Sharing is Caring <http://www.dkmuseer.dk/tidligerearrangementer/1186.html>

Copenhagen, Nov 11 2011

- In collaboration with the Association of Danish Museums and the Danish Broadcasting Corporation, I arranged the international seminar *Sharing is Caring – Digitized cultural heritage for all*
- Keynote speaker: Michael Edson, The Smithsonian
- Videos of the talks are available here <http://www.danskulturav.dk/sharing-is-caring/>

### MCN – Museum Computer Network <http://www.mcn.edu/mcn-2011-atlanta>

Atlanta, Nov 16-19 2011

- I participated in the crowdsourced video panel *Philosophical Leadership Needed for the Future: Digital Humanities Scholars in Museums*, chaired by Neal Stimler, The Met
- My contribution "The Scholar of Tomorrow" can be viewed at [http://www.youtube.com/watch?v=drSmJe5Cows&context=C3dee239ADOEgsToPDskJNR\\_A3zyMNaPolouzA6rXwQ](http://www.youtube.com/watch?v=drSmJe5Cows&context=C3dee239ADOEgsToPDskJNR_A3zyMNaPolouzA6rXwQ)

### DISH – Digital Strategies for Heritage <http://www.dish2011.nl/>

Rotterdam, Dec 6-9 2011

- I gave the talk "Change Achieved Through Action" in the track *Institutional Change*, chaired by Michael Edson <http://www.dish2011.nl/sessions/change-achieved-through-action>
- Slides are available at <http://www.slideshare.net/MereteSanderhoff/change-achieved-through-action-07122011>

### **Video interview for HAVE Backstage <http://www.havebackstage.dk/category/meninger/>**

Copenhagen, Jan 2012

- I participated in a debate panel about *Digitization and Culture*
- My contribution "Digitization is a positive challenge" can be viewed at <http://vimeo.com/35371688>

## **Resources**

Some of the museum professionals I met provided me with long lists of links to resources on specific topics that might be valuable to the wider museum community.

### **Public Domain and Intellectual Property research references (thanks to Michael Edson, SI)**

Economies of the Commons 2, Conference, Amsterdam, November 2010. Final report is listed on this page:

<http://ecommons.tuxic.nl/>

Lawrence Lessig: The Future of Ideas. The Fate of the Commons in a Connected World:  
<http://www.the-future-of-ideas.com/> (download from here)

Lawrence Lessig, iCommons Summit 2007:  
<http://youtu.be/hzFEbm1C0yU>

Lawrence Lessig, World Intellectual Property Organization (WIPO):  
[http://www.youtube.com/watch?v=L5Texgpm520&list=PL53764C54C9323E83&index=22&feature=plpp\\_video](http://www.youtube.com/watch?v=L5Texgpm520&list=PL53764C54C9323E83&index=22&feature=plpp_video)

Creative Commons playlist on Youtube:  
<http://www.youtube.com/playlist?list=PL53764C54C9323E83>

Michael Edson: Imagining a Smithsonian Commons document form:  
<http://www.slideshare.net/edsonm/cil-2009-michael-edson-text-version>  
 Video of the talk: <http://www.ustream.tv/recording/1327813>

A New Digital Presence: The Smithsonian Commons. Leo Mullen and Michael Edson talking about the SI Commons and the Smithsonian strategy process:  
<http://blog.navigationarts.com/smithsonian-commons/>

The Problem of the Yellow Milkmaid. A Business Model Perspective on Open Metadata:  
<http://pro.europeana.eu/documents/858566/2cbf1f78-e036-4088-af25-94684ff90dc5>

### **SEO, Web Analytics, paid search (thanks to Brian Alpert, SI)**

Beginner's Guide to Search Engine Optimization

<http://www.seomoz.org/beginners-guide-to-seo>

Avinash Kaushik's blog (Google's "Analytics Evangelist"):

- The 10 / 90 Rule for Magnificent Web Analytics Success  
<http://www.kaushik.net/avinash/page/124/>

- The "Action Dashboard" (An Alternative To Crappy Dashboards)  
<http://www.kaushik.net/avinash/the-action-dashboard-an-alternative-to-crappy-dashboards/>

- 5 + 4 Actionable Tips To Kick Web Data Analysis Up A Notch, Or Two  
<http://www.kaushik.net/avinash/actionable-tips-web-data-metrics-analysis/>

Google Analytics Concepts

<http://www.slideshare.net/zanaquara/google-analytics-concepts>

Back to Basics: A Quick Guide to 20 'Must Know' Paid Search Terms

<http://www.outrider.com.au/blog/back-to-basics-a-quick-guide-to-20-paid-search-terms/>

Google Grants program

<http://www.google.com/grants/>

Google Adwords: Tips for Success

<https://adwords.google.com/support/aw/bin/static.py?hl=en&page=tips.html>

### **3D imaging (thanks to Vince Rossi and Adam Metallo, SI)**

<http://www.youtube.com/user/3DSmithsonianDigi>

<http://www.facebook.com/3d.si.edu>

[http://labs.autodesk.com/utilities/photo\\_scene\\_editor/](http://labs.autodesk.com/utilities/photo_scene_editor/)

<http://www.publicknowledge.org/it-will-be-awesome-if-they-dont-screw-it-up>

<http://jonmonaghan.com/work/dauphin-007/>

[http://reprap.org/wiki/Main\\_Page](http://reprap.org/wiki/Main_Page)

<http://bodybrowser.googlelabs.com/body.html#m=0&note=&ui=1&opa=s:1,m:1,sk:1,c:1,o:1,ci:1,l:1,n:1&nav=1.57,120,160&sel=p::h::s::c:0;o:0>

<http://fab.cba.mit.edu/>

<http://photocitygame.com/>

<http://grail.cs.washington.edu/rome/>

<http://vimeo.com/14937682>

<http://photosynth.net/>

<http://www.youtube.com/watch?v=IXt21v8Hjhw>

## Acknowledgements

I would like to thank everyone who took the time to meet with me during my research visit. Thank you all for sharing your knowledge, expertise, and ideas so generously with me and the Danish museum community. It is my hope that by collecting some of your insights in this report and sharing it, I will be able to give just a little back to the community.

A **\*very special\*** thank you goes out to my hosts, Allegra Burnette, MoMA, and Michael Edson, The Smithsonian, who helped me get in touch with y'all!

### Washington D.C.

- Michael Edson, Director of Web and New Media Strategy, The Smithsonian
- Nancy Proctor, Head of Mobile Strategy and Initiatives, The Smithsonian
- Günter Waibel, Director of Digitization Program Office, The Smithsonian
- Thornton Staples, Director of Research and Scientific Data Management, The Smithsonian
- Darren Milligan, Senior Media Designer and Webmaster. , The Smithsonian
- Vince Rossi, 3D Digitization Coordinator, Office of Exhibits Central, The Smithsonian
- Adam Metallo, 3D Digitization Coordinator, Office of Exhibits Central, The Smithsonian
- Brian Alpert, Web Analytics and SEO Analyst, The Smithsonian
- Joel Richard, Web Developer, Smithsonian Libraries, The Smithsonian
- Jennifer Rossi, Webmaster & Communications Manager, Hirshhorn Museum and Sculpture Garden, The Smithsonian
- Bob Corrigan, Director of Product Management, EOL, National Museum of Natural History, The Smithsonian
- Breen Byrnes, Public Information Officer, EOL, National Museum of Natural History, The Smithsonian
- Colleen Marzec, Managing Editor & Producer, Ocean Portal, National Museum of Natural History, The Smithsonian
- Sarah Elizabeth Banks, Audience Engagement Specialist, National Museum of Natural History, The Smithsonian
- Georgina Goodlander, Interpretive Programs Manager, Smithsonian American Art Museum, The Smithsonian
- James I. Deutsch, Curator and Editor, Center for Folklife and Cultural Heritage, The Smithsonian

- Sarah Stierch, former Wikipedian-in-residence, Smithsonian American Art Museum, The Smithsonian
- Charles Chen, Exhibition Assistant, National Museum of Natural History, The Smithsonian
- Jeff Meade, Mobile Learning Program Lead, National Postal Museum, The Smithsonian
- Halsey Burgund, Aesthetic Evidence/Bring Your Own Voice
- Everyone present @ Nancy Proctor's *Welcome Wednesday* sessions, Oct 5 and 12 2011
- Everyone present @ SI Webmaster's meeting, October 6 2011
  
- John Gordy, Web Manager, National Gallery of Art
- Suzanne Sarraf, Web Designer, National Gallery of Art
- G. Memo Saenz, Web Designer, National Gallery of Art
- Carolyn Campbell, Web Producer, National Gallery of Art
- Alan Newman, Chief of Digital Imaging, National Gallery of Art
- Peter M. Lukehart, Associate Dean, Center for the Advanced Studies in the Visual Arts, National Gallery of Art
- Jennifer Roberts, Research Associate, Modern and Contemporary Art, National Gallery of Art
- Everyone who joined the lunch meeting @ NGA, October 5 2011
  
- Michael R. Balderrama, Programs Coordinator, American Association of Museums
- Guzel DuChateau, Program Coordinator, American Association of Museums
- David Klevan, Education Manager for Technology and Distance Learning, United States Holocaust Memorial Museum
- Lawrence Swiader, Senior Director of Digital Media, The National Campaign to Prevent Teen and Unplanned Pregnancy
- Deborah Luison Lavoy, Director of Product Marketing, Engagement Products, OpenText
- Dana Mitroff Silvers, Head of Online Services at San Francisco Museum of Modern Art
- Anya Kamenetz, freelance writer <http://diyubook.com/>

### **New York City**

- Allegra Burnette, Creative Director of Digital Media, MoMA
- Spencer Kiser, Media Technology Developer, MoMA
- David Hart, Media Producer, MoMA
- Shannon Darrough, Media Developer, MoMA

- Everyone present @ MoMA Digital Media department meeting, October 17 2011
  - Erin Coburn, Chief Officer of Digital Media, The Metropolitan Museum of Art
  - Matt Morgan, General Manager of the Website, The Metropolitan Museum of Art
  - Neal Stimler, Associate Coordinator of Images, The Metropolitan Museum of Art
  - Don Undeen, Senior Information Architect, The Metropolitan Museum of Art
  - Laura Kleger, Associate Director, Web Site, Guggenheim Museum
  - Alex Morrison, Managing Director, CogApp
  - Ben Rubinstein, Technical Director, CogApp
  - Rachael Rainbow, Production Director, CogApp
  - Chris How, Information Architect, CogApp
  - Everyone present @ The Met's website launch and feedback session, October 20 2011
- Dan Friedman, Web Manager and Designer, The Morgan Library & Museum
- Dina Helal, Manager of Interpretation and Interactive Media, Whitney Museum of American Art
- Sarah Hromack, Digital Content Manager, Whitney Museum of American Art
- Gene McHugh, Video Producer, Whitney Museum of American Art
- Brad Henslee, former Manager of Interactive Technology, Whitney Museum of American Art
- Jonathan Finkelstein, Founder and Executive Producer, LearningTimes
- John Walber, Chief Executive Officer, LearningTimes
- Loïc Tallon, Director, Pocket-Proof

### Chicago

- Elizabeth Neely, Director of Digital Information and Access, Art Institute of Chicago
- Jeff Ubois, Program Officer, The MacArthur Foundation