

The Media Mixer:

User Creativity through Production, Deconstruction and Reconstruction of Digital Media Content

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Abstract: *We explore how remixing and content sharing can be used as a means for user participation in a digital museum age. Remix culture is seen as a culture that allows and encourages the production of derivative works; works that are based on already existing works. This cultural practice thrives throughout the Internet, most notably on web 2.0 sites like YouTube. The Media Museum has embraced the remix paradigm with the development of an interactive media experience centre called the Media Mixer. Here the museum users can produce, deconstruct, reconstruct and finally publish and share digital media content. The media content is created by the user in the museum's physical environment, but it can be mixed with material from web archives. It is the intention that the users learn about media through participatory and creative processes with media where the borders between producing, playing and learning are blurred.*

Key words: User participation, digital media, remixing, web 2.0, video, audio, RW culture.

The Media Mixer is a new media experience centre in the Media Museum located in Odense, Denmark. We were both directly involved in developing the Media Mixer: CHM was the overall project manager, and VV designed and implemented one of the exhibits. The Media Mixer opened on August 20th 2010 after a long and challenging development process that this paper will elaborate upon. The main focus of the new media centre is the utilization of digital media to promote user participation and the creative production of media content through multimedia editing and

“mashups” or “remixes”. The Media Mixer features several interactive exhibits revolving around media, such as a Chroma Key Studio, an interactive interview exhibit and a foley sound booth. All user-created content from exhibits is stored digitally and can be edited, shared and published by the users at will.

In our opinion, there is a largely unused potential in making mashups of digital content in museums, and we will discuss how and why it was done in the Media Mixer project. Digital mashups are understood as derivative works, and almost any museum could provide users



The Mixer Station is the hub of the MediaMixer. The orange cube on the left is the Sound Box and on the right is the Chroma Key Studio. ©Peter Nielsen 2011.

with content, tools as well as incentives to engage in a process where user-generated content and curated content lead to new expressions and understandings.

To include remixing in a museum's practice is simply to reflect what is already happening in society, most prominently on web 2.0 sites such as YouTube. 24 hours of audiovisual content is uploaded to YouTube (YouTube n.d.) every single minute. Of course, not all of this content is mashups, but a great deal of the popular content is. Consider for example the remixing of Internet memes such as "The Star Wars Kid" or Bruno Ganz' portrayal of Hitler in the 2004 German film *Der Untergang*. These mashups range from subtitling a video clip to completely reinventing the material with advanced post-

production software, and they are extremely popular. One subtitled parody of *Der Untergang* was viewed on YouTube more than 4 million times before it was removed due to copyright infringement claims (Rohrer 2010). Copyright issues will be briefly touched upon later. The important point here is that digital remixing is a practice of this generation; a democratic way of dialogue and meaning making. In his book *Remix* (Lessig 2008), Creative Commons founder and law professor Lawrence Lessig discusses how the copyright system and the economy need to change to embrace this cultural practice. Lessig draws a distinction between RO (Read-Only) culture and RW (Read/Write) culture where RW culture denotes the practice of remixing where

people “add to the culture they read by creating and re-creating the culture around them” (Lessig 2008: 28). This is, of course, not a new cultural practice, but the tools by which we can create and remix are indeed new. Consider “writing” as an example. A novel could be considered more or less Read-Only. However, a scientific article is in some ways Read/Write, because here it is common practice to explicitly draw upon and build on top of other peoples’ writing. An Internet blog where users can comment, discuss and link is perhaps an even more obvious example of Read/Write expression.

The same democratic forms of creativity and meaning making take place in multimedia forms of “writing”. But the multimedia tools for expression are new, and society needs to adapt to the new cultural practices that digital technologies have fostered. Lessig sees an optimistic future with “better RO culture, a more vibrant RW culture, and a flourishing world of hybrids,” but, as he puts it, this requires “changes in law, and changes in us” (Lessig 2008: 252). We suggest that museums could also contribute to a culturally rich hybrid future where digital remixing is a natural and democratic mode of creative expression and meaning making. But in order to do that, museums, too, need to change. Not by abandoning centuries of RO museum practice, but by building on top of the existing museum resources and by providing new resources like we have tried with the Media Mixer.

THE GOAL OF THE MEDIA MIXER

The Media Mixer was developed to accommodate small groups of users rather than entire school classes, and we especially wanted to reach and engage a new and younger

audience (in a 14–24 age bracket). A visit to the Media Mixer should facilitate a more reflective perspective on the information we get from our media as well as inspiration to take a more (inter)active part in the public sphere by engaging in the RW culture of the web. There are two categories of means to achieve this goal:

- Provide the user with resources they do not have in front of their computer at home.
- Place the user in situations where they can experience the inner workings of media.

Getting the users actively engaged in creating media content of course aims at offering a certain way of learning about media that other parts of the museum do not facilitate. Since user participation in modern media is a learning

In the Hot Seat the user is interviewed by a virtual TV host such as the well known Danish news anchorman Jes Dorph Pedersen. © Peter Nielsen 2011.



38 goal in itself, it was natural to make the Media Mixer a place where users “learn by doing”. In terms of didactics, we consider digital remixing of media content a useful tool in museums and exhibitions organized on either discovery learning or constructivist lines (Hein 1998: 25). In the remixing process, users construct meaning themselves. The user-constructed meaning could be based on knowledge viewed as independent of the learner (which is discovery learning) or knowledge constructed in the mind of the learner (which is constructivist learning). The Media Mixer contains elements of both discovery learning and constructivist learning. In the interactive exhibits, users are able to *discover* the nuts and bolts of media. For example, being interviewed themselves by a virtual interviewer gives users a sense of the interview genre and techniques by experiencing it with their own body. This kind of situated learning is supposed to give the user a more profound understanding of how difficult it can be to answer coherently in an interview situation. We view such knowledge as independent of the learner. Remixing the interview with other content afterwards, on the other hand, does not lead to a discovery of established external knowledge. Instead we view it as an activity where new knowledge is *constructed* in the mind of the user. So the Media Mixer as a learning site does not subscribe to a certain epistemology, but simply aims at letting users construct meaning, whether from internal or external knowledge. Other museums would perhaps position themselves in a more radical and fixed epistemological position aiming at either letting users discover established facts or letting users construct their own knowledge. It is important to stress that we don't believe that the different epistemological positions are

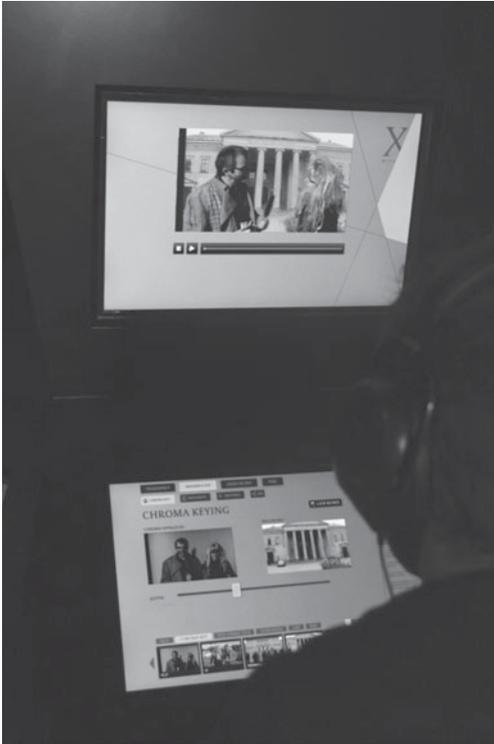
necessarily linked to the type of museum. An art exhibition could be organized on the basis of discovery learning just as well as a science exhibition could be organized on constructivist lines. We therefore also believe that the some of the didactic design of the Media Mixer can be utilized by a range of different museums.

A DETAILED VIEW OF THE MEDIA MIXER

The Media Mixer consists of three audiovisual recording studios, a remix worktable, and a small exhibition area. In addition, there is also a small cinema and a digital media library where the user can browse through a collection of Danish TV and radio shows. The activities in each of the three studios are dedicated to one specific topic of the media: In *The Hot Seat*, the

Here the sound of a cardboard box rolling down a staircase is created in the Sound Box. © Peter Nielsen 2011.





A user editing his chroma key production. It is possible to adjust the chroma key sensitivity and change the background to another location. © Peter Nielsen 2011.

user can engage in an interview with a virtual host portrayed by famous Danish television reporters. In the *Chroma Key Studio*, the user can report “live” from different locations and eras. The user can choose between a positive, negative and neutral speak to be shown on the teleprompter, thus emphasising the significance of narrative framing in television reporting. In the *Sound Box*, users take on the role of foley artists, creating sound effects for film clips by analogue means such as shoes, cardboard boxes, etc. – enhancing awareness of the role and inner workings of sound in audiovisual media.

The central hub of the exhibition is the *Mixer* station, where users are able to edit their productions, remixing them with content from the Internet or private sources and finally share their remixes with friends online, as well as with other users in the museum. Because of security issues, it was decided that users could not have direct access to the Internet from the Mixer. Instead, they have to find the material on two dedicated internet computers and store it on a USB key that they can then plug into the Mixer.

For more direct inter-user communication and meaning making, the small exhibition area called *The Word is Yours* presents a hot topic from the current Danish media debate. Users are then able to express their own opinions through simple or novel media ranging from Post-it notes, a blackboard, a telephone to a typewriter linked to a digital billboard. The area also features a computer logged on to the Media Mixer weblog, serving as a direct link from the physical museum space with the Media Mixer’s online domain. This activity is inspired by the Hot Spot methodology with a focus on awareness-making on contemporary issues in museums (Mupira 2004). The first issue on display was whether some erotic manga-style comics and hentai films could be considered child pornography and therefore banned, like in some other countries. This topic generated major interest from the news media as well as numerous comments from the users, which was, of course, the most important success criterion.

The concepts for all the exhibits were initially chosen by museum staff focusing on the points about the workings of our media that we wanted to illustrate to the users. The concepts were then presented to groups of young test users who rated them and also gave

40 concrete feedback on the content (e.g. which TV host they wanted to be interviewed by in *The Hot Seat*).

CONTENT AND COPYRIGHT

When museum users are encouraged to create, build upon and remix digital content, copyright is of course an issue. This is especially the case when user-created content can be published directly on the Internet, as in the Media Mixer. The copyright laws vary from one country to another, so we advise attention regarding local legislation on this area.

Danish law does not include a notion of “fair use”, so in the Media Mixer project the users are not provided with bits and pieces of commercial content, although that would have been a relevant resource. Except for one video clip of the Hindenburg disaster, entirely new content was produced to serve as video backgrounds for the Chroma Key Studio and video and sound sequences for the Sound Box. That way the museum became the sole copyright holder and was therefore able to allow users to publish derivative works. On the positive side, this arrangement allowed for the production of very specialized content, but on the negative side such content lacks the authenticity and cultural significance of actual historical clips.

In the end, the most important content is the clips produced by the users themselves and this content is, of course, theirs to do with what they want. Users must actively click on a file to share it in the museum and online, and this sharing can be undone at any time.

There is obviously no way to make sure that users do not bring copyrighted (or offending) material, but should this happen, the museum staff will remove it when it is discovered. And

this has not yet happened during more than half a year of use.

Being part of a museum of media history, the Media Mixer features a curated selection of national historical video and sound clips in the so-called *Mediatheque*. Originally, it was hoped this would be a resource that could also be used in digital user remixes. But this is impossible due to the copyright of the clips. To be even allowed to show these historical clips in the Media Mixer, the museum pays a monthly copyright fee just like a private company would do, and if the content was to be used, remixed and published, the fee would be huge, and impossible for the museum to pay. We feel that museums being important learning sites with specific responsibilities in the areas of art and culture are in some degree hindered by the current copyright practices, and we suggest that policy makers acknowledge the needs for a more fertile practice in the current digital museum age.

CHALLENGES

An unconventional exhibition project such as the Media Mixer faced many other challenges of an financial, technical and organizational nature. The main financial challenge was that an IT infrastructure with a content management system (CMS) for handling user profiles with affiliated multimedia content is expensive but does not look like much in an exhibition space. The biggest expenditures are almost invisible in the end result.

Regarding technical challenges, what were initially viewed as simple ideas often turned out to be demanding from a developer viewpoint. The fact that the museum IT staff consisted of just one system administrator made the museum dependent on the main IT

subcontractor to estimate technical challenges and come up with solutions that were realistic technically, financially and time-wise. In the Media Mixer project, this didn't work out very well, and some core functionalities were still not implemented when the exhibition opened. Most of the technical problems were related to the handling of user multimedia files – a core feature in the Media Mixer. After the exhibition opening, the quality of files was low, audio/video synchronization was inaccurate, some audio was missing, some videos would appear upside down, files privileges would fail so that one user's video suddenly appeared in another user's files, etc. These problems were addressed during the next months, and many were corrected. But after more than half a year, there are still technical problems, so the technical challenge should not be underestimated in this type of project.

The organizational challenges were both external and internal. Externally, the museum had to draw upon several subcontractors with various specialties to realize this project, including an exhibition architect, programmer, graphic designer, electrician and computer scientist. It was new to the museum to have to coordinate the actions and different perspectives of so many specialists, and the subcontractors were given considerable influence on the outcome.

Internally, a digital project like the Media Mixer had to face entrenched notions of what an exhibition should be and what relation the museum should have with its users. There was a consensus among the curatorial staff at the Media Museum that change and rethinking was needed on these issues, as also noted by several museologists (e.g. Hooper-Greenhill 2007: 1). But there were different opinions on how radical the change should be. The

traditionalists among the staff feared that by letting the users (as co-producers) have considerable influence on what would be shown in the museum space, the museum would lose its professional authority and degenerate into a digital playground. The radicalists had no such fears, arguing that the users should have influence on the content, just as they are used to from the Internet and modern RW culture. The solution here was to build the Media Mixer in a separate room with no direct contact with the museum's more traditional exhibitions.

SCAFFOLDING PARTICIPATION IN THE MEDIA MIXER

The Media Mixer project aims at encouraging users to participate, be creative and reflect upon themselves as both media producers and consumers. This is a big challenge, and the Media Mixer therefore uses different methods for scaffolding the creative processes. We use the term scaffolding to describe all tutoring mechanisms that are aimed at engaging, helping and keeping the users at task (Wood, Bruner & Ross 1976).

In order to make users explore the different interactive exhibits, there is virtually no text in the Media Mixer room. Every interface should speak for itself when users log in with their electronic ticket. When logged in, the users get a short range of choices – in scaffolding terms a reduction in the degrees of freedom. In each of the main exhibits, users can choose from four to six different predefined tasks. When chosen, there is strong direction maintenance in the fact that each task is a narrative (e.g. an interview) taking from around 1 minute to 6 minutes to complete. There are also freestyle modes where users for a short amount of time



At The Word is Yours the user can contribute to the exhibition with comments or opinions on the old typewriter, the telephone, the weblog or by putting a Post-it note on the wall. © Frederik Jørgensen 2010.

are able to produce video or audio free of constraints on content. But tasks that include some predefined video, audio or text material are seen as a necessary means of scaffolding most productions until users are familiar with the production process and inspired to break the boundaries of the basic tasks built into exhibits.

Throughout the exhibits, controls are kept as simple as possible in order to focus on the mechanics of media content rather than the mechanics of media production tools. Editing software has been custom made using the same interface style as the exhibits. The museum considered using professional media editing software but chose to highlight the critical features of multimedia editing by providing only simple controls such as cutting and moving blocks of content on just two video tracks and two audio tracks.

The museum hosts are also very active in scaffolding the creative processes, and our observation studies have shown that they are involved with almost all users. The museum hosts are especially active in recruiting, i.e.

encouraging users to try a certain exhibit, as well as in frustration control when exhibits break down. However, one of the most interesting scaffolding devices comes from the users themselves. Users demonstrate different ways of handling the tasks when publishing productions online and onsite. Ideally, the boundaries between these will be crossed and exhibits will be used in creative ways that the museum did not foresee.

RECEPTION

At the time of writing, the Media Mixer has been open to the public for about seven months. The reception by both the press and the users has been positive, but the real impact of the Media Mixer experience is somewhat obscured by the fact that there have been technical problems throughout the whole period. We have conducted user tests, participant observation and surveys shortly before and after the opening – not surprisingly showing that users were enjoying themselves but were frustrated when the software or hardware broke down. Reports of errors or crashes were very consistent among the respondents, and when asked what could be improved in the Media Mixer, the most common answer was “technical stuff”. To our surprise, the same respondents generally want to revisit, and report that they have really enjoyed themselves. However, we cannot rule out the possibility that this is simply a forgiving attitude by users who know that they are experiencing a system that is new and therefore not stable yet.

There are, however, some consistent findings that are independent of the technical issues. One example is the desire for more content in each exhibit. Users, for example, want more

background videos for the Chroma Key Studio and more video clips in The Sound Box. The reason is not that the users have tried everything – instead users simply want a large range of choices and are quick to select the one that seems most appealing. Initially, we believed that a limited range of choices would serve as a helpful reduction in the degrees of freedom, but the users actually do not want a reduction here. One could speculate that this is simply because the users are used to browsing through large quantities of data on the Internet, in their personal music collections and so on. The desire for more content is encouraging for museums wanting to offer access to digital collections, and in projects like the Media Mixer there is a potential for offering media content from the museum's own collections as a production resource for remixing.

In the Media Mixer, however, actual remixing is very rare. Our studies have shown that while most users are recording video and sound in the exhibits, very few use the editing tools or the options for sharing. There seem to be several reasons for this. First of all, there is a lack of archival video and audio material readily available for mixing purposes. Secondly, the editing tools have turned out to be a bit clumsy and frustrating to use. And thirdly, the platform for sharing, rating and commenting is virtually non-existent, so there is no actual community around the user productions.

Recent interviews with young users indicate that there is nevertheless an understanding of the Media Mixer as a place for expression, dialogue and collaboration. Users contrast the Media Mixer with traditional museums, which they often find “boring”, and they like the fact that they are able to do and create something together in the Media Mixer. This strengthens

our view that RW museum practices can be a fruitful supplement to traditional RO practices.

CONCLUSION

The process of evolving a museum based on analogue print media to an interactive and participatory site has been challenging in a lot of ways. Most notably there have been a lot of technical challenges in implementing a system for user multimedia production, remixing and publishing. What the museum initially thought were simple ideas and the developers' problems have become the problems for the museum and the users.

We suggest, however, that the practice of remixing can be a potent means to achieve meaningful user participation in the digital museum age. And despite technical issues, initial user testing and feedback show that users are engaged, joyful and willing to produce and sometimes also share their creative productions.

When working with external developers, the key is good communication, realistic project planning with sufficient time allocated for testing and early technical prototyping. We recommend insisting on an iterative process where critical system components are prototyped in the early iterations and demonstrated with placeholder content. Although important, the interfaces and end content should be independent of critical system components, and museums should insist on flexibility in the iterative process where changes in interfaces can be gradually adopted in iterations.

Being a small museum, the Media Museum curators developing content were also the ones highly involved in the technical issues. We suggest that any museum wishing to involve users in a custom-made digital exhibition

44 consider the division of assignments, so that curators are not too involved in dealing with purely technical problems. The curators' focus should be the tasks, the content and – most importantly – the users and their creative participation. In the Media Mixer, the systems are now beginning to work and the development process that began with the users soon will therefore be all about the users again. All exhibits are developed so that content and tasks can be added and modified. There seems to be a need for more curated content as a remixing resource as well as a clearer indication of what can be done at the different exhibits. Future user research will show how the complete Media Mixer experience hopefully promotes creativity and reflection works, and how the different tasks should be adjusted to optimize these processes.

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