

# DESIGN EXPERIMENTS WITH SOCIAL MEDIA AND MUSEUM CONTENT IN THE CONTEXT OF THE DISTRIBUTED MUSEUM

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## ABSTRACT

The relationship of digital technology to museum practices is a field that continues to grow and acknowledge the potential of development. Development that will require new understandings related to museum content travelling across contexts, participatory methods suitable to designing digital technology into museum communication and new forms of relationships with visitors and citizens. In this paper we explore the use of a small-scale prototype experiment as the basis for exploring mobile social media based practices related to the distributed museum within the city. The design experiment is staged with inspiration from critical design, in which design thinking and cultural investigation are combined to inquire upon the role social media can have for extending the spaces of museum communication.

## INTRODUCTION

Designing for the distributed museum requires noticing the scales and dimensions that characterize the new museum of the 21st century (Bautista & Balsamo 2011). These dimensions involve a continuum of locations from fixed, physical and material locations to digital locations in mobile and virtual spaces in addition to the scaling between open and closed structures that

invite users into activities of access to content versus content production (ibid). These new shift the implications for structuring and redefining the nature of the museum visitor experience. It also goes beyond providing a more or less attractive medium for presenting content (Macdonald 2007), into the design as an implication for making museum content relevant within a variety of public spaces.

For the purpose of addressing design experiments as a means to explore the relationship between the distributed museum and existing cultural practices of social media, we will expand upon three different challenges that have arisen as valid investigative needs from observed outcomes of a design experiment. These challenges include: content travelling across contexts, participatory methods suitable to exploring mobile social media participation, and sustainability of the media involved – all of which we feel point to needed critical design addressing the advancement of communication practices of the distributed museum. This is not to implicate only three potential challenges to the future. Rather, that these are three of the most valuable research directions that emerged from the experiment highlighted in this paper as potential for future design experiments exploring the communication practices of the distributed museum. We contend that this emphasis on discovering future needs from small-scale experiments is applicable across scenarios beyond just this investigation.

## INTRODUCING PARTICIPATORY DESIGN APPROACHES TO THE DISTRIBUTED MUSEUM

Several design-related perspectives have been proposed in museum communication design to highlight the social interaction and situated experiences that unfold while using digital technologies during museum visits (Brown et al. 2005, Vom Lehn et al. 2001, Galani & Chalmers 2002, Economou 2004). Within fixed and

located museum exhibitions, the physical nature and material qualities, the sensory characteristics and cultural identity of the site as well as the digital layers of the virtual involved, are identified as assembling into the situated context that has an impact on how a visitor interprets an exhibit or a site. The social and material aspects of such located museums exhibits are seen as grounded in the experience of place and the lived experience of the physical world in the museum, and have been analyzed at the personal, social, cultural and physical levels (Tuan 1977, Ciolfi & Bannon 2005, Ciolfi & McLoughlin 2011). These categories are also relevant for designing experiments for museum communication that goes beyond the physical museum involving mobile technologies to establish new forms of social, personal and cultural encounters of the distributed museum in physical locations.

Museum communication is in this way emerging beyond historically known visitor relationships and therefore in need of increased integration of methodologies. This can be supported by designerly inquiries (Cross 2001, Nelson & Stolterman 2003) into these new relationships. If we understand design as a uniquely human activity of inquiry and action research (Stolterman 2008), investigations through design experiments can provide a methodology for museums to further develop their mission of engaging visitors with contemporary communication practices. We see the need for such connections to be further explored in the everyday context of the city – and for the case we are presenting here, in the context of interrupting the communication in the city of today with content from the past.

A broad scale of design methods (Sanders & Stappers 2008) address the need to understand everyday cultural and social practices with digital technologies in research-based design. Two approaches that have grown out of the participatory design (PD) and co-design experiments in Scandinavia, Design Labs and Living Labs, are relevant for building a participatory framework for design experiments related to mobile, fluid, open and scaled spaces of the distributed museum in a city context; ones that we have used as a framework in exploring the variables of online participation with museum content within a physical site outside the fixed construct of a museum. The frameworks of a Design Lab is that of a controlled environment for executing prototype experiments (Binder & Brandt 2008) and as a structuring tool for participatory enquiries in transparent and delimited processes that are scalable (Binder 2007). Whereas Living Labs framework (Følstad 2008, Näkki & Antikainen 2008) are a means to establishing physical or virtual spaces where stakeholders may co-create, explore, experiment and evaluate (Schaffers et al., 2007, Westerlund & Leminen, 2011) or agonistic spaces where stakeholders meet to question and explore possibilities (Björgvinsson, Ehn, Hillgren 2010). In the context of museum innovation, the participatory approach does lift up several noteworthy challenges and

ambiguities related to connecting museum content to ongoing social innovations outside the museum. The design experiment we describe below highlights such methodological challenges.

These two lab approaches were combined as methods to explore how distributed museum content can relate to existing mobile social media practices in the context of a city; allowing the design experiment as a provider of democratic entry into museum innovation. Within this framework, the social photo sharing app Instagram was employed as a design probe (Mattelmäki 2006, Gaver et al. 1999) and thus as a mediated platform for PD (Reyes & Finken 2012) to explore variables of cultural and social practices with mobile technology and photosharing activities along the river. Therefore our design experiment becomes an endeavor to critically explore the practices of the distributed museum. This by turning the question of participation around. Asking how the distributed museum may participate in ongoing communication practices of people within the city instead of how people can participate in the museum.

## MOBILE AND ONLINE MEDIA SHAPING THE DISTRIBUTED MUSEUM

In museum design a central discussion revolves around how digital media shapes the transformation of cultural institutions. Central issues within the contemporary re-conceptualization of museums as knowledge institutions include efforts to build new relationships to society and thereby relationships with the museum visitor (Vergo 1997, Davies 1998). A number of concepts are used to define visitor roles in new museum encounters; the integrative museum, the engaging museum, the participatory museum or the social inclusive museum. Contemporary explorations into the possibilities of integrating social media and mobile technologies align with these longer institutional transformative processes in building visitor relationships. Social media is embraced as a feature in the new museum, capable of taking the conversations beyond the museum and integrating multiple “voices” (Black 2010). While these media provide multivocality and new forms of remediation, they also recast questions about control, authority, ownership, voice and responsibility (Knell 2003, Russo et al 2008, Stuedahl & Smørdal 2011a, Stuedahl 2011) as museums are ambivalent to practices of computing (Parry 2007). New museum paradigms related to digital technologies offer not only opportunities for reimagining interactions within a physical museum space, but allows for taking the museum beyond the walls and grounds of its physical location (van Mensch 2005) into a distributed space.

Handheld technologies have long been used for guiding and giving access to additional information sources in museum exhibitions (Aoki et al. 2001, Filippini-Fantoni 2008, Hsi 2008). Recently, mobile phones have been embraced to enhance museum learning (Hsi 2002, Walker 2008, Vavoula et al. 2009) to restructure, contextualize and personalize a museum visit (Kahr-

Højland 2011) or to enhance visitors co-compositional activities of sharing photos across time (Konstantinos 2005, Stuedahl & Smørdal 2011 a & b). Some museums are currently exploring smart phones, iPads and augmented software and apps as mobile guides for outdoor experiences to provide content from collections and archives into new contexts, such as fairs and events (e.g. Stejdelike museums ARtours), and as part of city guides (e.g. Streetmuseum by Museum of London), where images from the museum collections and archives are showcased by way of GPS-coordinates. QR-code based projects such as Decoding Art, where QR-code plaques are attached to public art provides examples of how museum content can be technologically distributed to new situations of use (piloted by Manchester Art Gallery).

Mobile phones have enabled amateur image making, or “Photography 2.0” practices, to expand the dominant museological narrative (Galani & Moschovi 2010). Applications such as Tumblr, Instagram and Pinterest have allowed museums to build new relationships with online communities of interest through imagery (Colquhoun & Galani 2013). Also, Instagram photo taking has been defined as a new visitor practice in exhibitions (Hillman, Weilenmann & Jungselius 2012) while projects related to the photo sharing database Flickr (Dalton 2010) or to online collection-based projects explore the dynamics of social tagging and folksonomies related to museums art collections (Trant 2009). This includes crowdsourcing actions of correcting, contextualizing, complementing, co-curating of photographic historical content that increase the quality of museum collection (Oomen & Aroyo 2011, Colquhoun and Galani forthcoming 2013). While mobile media provide opportunities to foster social connectivity and re-encounter experiences beyond the museum walls are welcomed, very few museums have explored these as means to build sustainable visitor relationships (Wasserman 2011).

While sustainable relations with visitors are part of current crowdsourcing and community projects, these projects mainly translate into participatory activities of co-creation, contribution and collaboration (Simon 2010). There are few studies on what motivates visitors in mobile, virtual communities and how the relationship to museum content is established outside of museum contexts. There is a growing need for design language and methodological approaches (Wasserman 2011) for ways that museum content may connect to one’s sense of ongoing presence (Licoppe 2004) and relate to the emerging conventions of interpersonal relationships (Ling 2008) that mobile technologies provide.

The design experiment we report here is designed to explore the aesthetical, cultural and social dynamics, tensions and potentials that museums may meet when integrating social photosharing applications within distributed communication practices. In particular, when museum content is staged for encounters within external spaces by visitors who would not enter the physical

museum space. In our case museum content was presented in an outdoor setting within the central city. After a description of the design experiment using Instagram, we describe three defined challenges relevant to evolving the relationship between the museum visitor relationships within a distributed museum. This small-scale experiment and in-process documentation illustrate the critical design thinking needed beyond the core functionality of digital technology to address what an experience of the distributed museum may mean in the not too distant future.

#### THE AKERSELVA DIGITALT PROJECT:

The Norwegian Museum for Science, Technology and Medicine indexes the industrial heritage of Norway. Together with the Oslo City Museum and Oslo City Archive they embarked on a project entitled Akerselva Digitalt with the objective of establishing an active museum communication practice outside the museums—more specifically, along the Akerselva river where the buildings and sites that lie along its path are central to the industrial history of Norway. A walk along this river may potentially give insights and understanding of the central cultural, economic and societal transformations in Norwegian society over the past 150 years. The museums have previously communicated this history by arranging city walks, allowing access to online portals with documented industrial history, published text books and participated in cultural events along the river. In the project, they have launched a mobile app that gives 3G based access to location specific mp3-files. Building upon this audio guide, the museum invited researchers<sup>1</sup> to explore how visitors can be involved through a socially-driven mobile platform – and how visitor contributions can be integrated in concert with museum-produced content.

In investigating the challenges related to understanding what kinds of mobilities and participatory activities groups of users and visitors along the Akerselva River may find meaningful, the research team developed an approach that consisted of both a social-media component and a physical installation within a co-design framework. The walkway along the river has the characteristics of being a place for recreation, an alternative road for walkers and bikers. While inside the old factory buildings along the river have settled an emerging creative industry and a variety of educational activities. It was decided that a small-scale experiment, an operable prototype, would allow for critical reflection upon which a deeper set of research questions could be developed to identify the strengths and weaknesses of a socially-driven mobile platform in order to then iterate subsequent prototypes (Brown

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<sup>1</sup> Researchers from InterMedia, University of Oslo related to CONTACT project financed by The Research Council of Norway 2009 – 2013.

2009) toward conceiving a new concept of museum interactions along the Akerselva River.

#### THE DIGITAL DESIGN SET-UP: INSTAGRAM FOR SOCIAL SHARING OF HISTORICAL MUSEUM CONTENT

The social and cultural interaction probe of this experiment used the photo sharing app. The applied ethnography (Sander 2002) was based on characteristics of probes as a means for explorative design (Mattelmäki 2008). The experiment invited Instagram-users to participate in the experiment by means of self-documentation, suggesting reflection upon personal context and perceptions to support the explorative character of our project through social mobile interactions along the river. We discovered that Instagram had several photo streams related to the river #akerselva, and that citizens seemed to share natural as well as social and culinary experiences of their time along the river. Therefore the first probe centered around using the Instagram as a distribution channel for historical images within these already established mediated relationships. The images that were published in the experiment were derived from the online and open photo database oslobilder.no provided by the Oslo Museum, and the portal industrimuseum.no provided by the Norwegian Network for Industrial History. We established an Instagram user called @akerselvdigital to give people the ability to follow this stream of archival photos.



Figure 1: @Akerselvdigitalt photo stream on Instagram

The decision to publish historical images was an investigation into manners in which the museum content could fit into ongoing cultural practices on Instagram. Therefore, hashtags then became a semantic tool for both outreach and a potential prompt to trigger historical

reflections. Our choice of hashtags allowed for conceptualizing of the museum content and mediated the relationships between historical images and current ongoing cultural and social activities in Instagram. Together with the images the hashtags could provoke and direct reflections directly onto historical issues. Some photos were published with excerpts of the museum text used in oslobilder.no, and some were published with only one sentence of context for the image in addition to a prompting question relating the historical to the present day. One example is the photo from the Seilduken factory from 1884 stating that 30-40% of the industrial production workforce along the Akerselva was executed by children. The prompting question asked, "What do we use children for today?"



Figure 2: Photos from the archives published through Instagram

The photos were also published with the name of the photographer, the year, the owner of the archive and the digital source. All photos were tagged with the #akerselva hashtag, and with clusters of hashtags that drew attention to themes related to Akerselva history. The themes could be place related, such as "#seilduken", one of the main factories – or they could be related to an historical phenomena, such as "#children work" or "#osloactivism, #politicalprisoners, #russia, or more contemporary themes such as "#pussyriots, #mathallen (a new local food hall), #akerselva, #brenneriveien, #vulkanoslo (the burgeoning design community and environment for creative industry in Oslo), or #teknisk museum".

#### PHYSICAL INSTALLATIONS ALONG THE RIVER WALK EVENT

To observe how the situated use of Instagram may connect museum content to a physical context in the city, the design team arranged a physical installation across three sites along the river to carry out the experiment and obtain any observable empirical clues on how social practice with historical content may play out onsite. The goal of the physical set-up was to explore a) visitors experience with the cultural dynamics of Instagram related to place, and b) the media-based dynamics of social following which we will not focus on in this paper. It was decided to carry out the installation as a performance activity at the yearly riverwalk, or Elvelangs, that occurs on 21. September, the day of autumnal equinox. This event

samples installations from artists, musicians and local people living along the river with up to 3000 people attending various parts of the 5-mile walk along the river beginning around 8 in the evening and lasting until 11. It is a very stimulating performative evening in which visitors young and old participate in various cultural exhibits and performances along the river. This seemed like an opportune time to set-up an engagement activity capitalizing on the interest of people in the environs of the river walk.

The three installation points were defined according to the relevance of the content and the physical accessibility in accordance to the number of people taking part in the walk. Being a physical area for pleasure and leisure time while at the same time having multiple histories of working class, women's history, immigration, gentrification e.g., there was a need to involve the relationship of content in selecting the exact installation sites. Each addressed a theme derived from historical narratives of the sites;

- women's work related to the canvas factory #Seilduken that today houses the Oslo National Academy of Arts, Norway's largest college of higher education in the field of the arts
- cultural activities and musical activities in the area late 19th century, #Brenneriveien and #Blå a former textile production facility that now serves as a locale for concerts, art studios and a hip-hop youth club
- citizen activism located at Anker bridge #osloksjonisme, a site for many activism events like the Hunger March in 1932 focusing on unemployment and workers social conditions



**Figure 3:** One of the three installation points. iPads were available for viewing the photo stream in real-time (left), with cards with text prompts to encourage interactions by way of the QR codes.

Printouts were made of the Instagram photographs that were published on the @akerselvdigital stream, scaled 200%, and marked with a QR code. These printouts were then laminated for durability and strung at the specific locations relevant to each theme. The QR-codes on the laminated printouts linked users directly to the Instagram stream, making an onsite connection between the physical site where the event occurred and the digital space being curated on Instagram.

Accompanying text and questions were intended as trigger points for reflection over contradictions between the past and now. In inviting river walkers to access by way of QR-codes, we hoped to provide an incentive to participate by adding their own photos or comments stimulated by the prompting texts.

It became important to allow access by those who did not carry a smartphone with Instagram. For this, iPads were wired and strung across at the three sites allowing for the same access to the stream of photos from @akerselvdigital. Therefore in each of the three installation points there were 10-12 laminated historical photos digitally-enhanced to replicate the Instagram aesthetic strung across the space, an iPad allowing for instant access to the @akerselvdigital stream on Instagram and a researcher who acted as a silent observer of the activity surrounding the activity.

#### AKERSELVA EXPERIMENT OBSERVATIONS

The installation was accessible during the entire three hours of the riverwalk event and remained up for some days after (minus the iPads), in the end gaining around 50-60 new followers to the @akerselvdigital stream on Instagram. We found that the sites chosen for each installation were important in regards to awareness, attention and dwelling time. Sites with enough physical space to dwell naturally gathered the most people. People were intrigued by the blending of the historical photos with instant snapshots from contemporary events and situations at the riverwalk that were appearing together in the Instagram feed. They made sense of the text on the laminated photo-cards but did to a lesser degree engage with the contemporary issues related to the imaged phenomena – such as the prompting text encouraged them to do. We got more comments and likes on the published photos that had an open description – while nobody answered prompting questions or responded to the solicitation to contribute.

It also became clear that defining the features for participation had to be explained differently for both the digital and physical spaces. The physical translation of Instagram photos into laminated cards seemed to require more descriptive text and a clearer prompting to act than the photos that were experienced within Instagram on the mobile phone. The physical text had to be designed with a clear idea of what kind of contribution people could make that was relevant for their situated context of the walk – and also how the user-made contributions would land in the Instagram project within the museum framework. People participating in the walk constantly uploaded photos of installations and situations experienced and hashtagged with #akerselva, making it difficult to find ways to tune them into historical reflections in this context. The solicitations articulated in our Instagram entries did not work well in crossing contexts between online and physical representations. And it seemed that translating the Instagram photo and hashtag texts into a physical form required another level of prompting – a physical invitation which set out

verbatim instructions on what the user was to do in the interaction.



Figure 4: The most popular installation point of the three locations.

#### DESIGN EXPERIMENTS AS PATHS TO FUTURE CHALLENGES

In assessing an outcome for participation along the river, the social-sharing app of Instagram was chosen over other relevant social-media options as it differs from web-based hybrid databases such as Flickr, that have been used in present museum, library and archive commons-based projects (Colquhoun & Galani 2013). In employing Instagram, we opened a space for a participatory and experimental approach that examines equally the layers of personal, social, cultural and physical interactions with the Akerselva river. In this way we used an interventional ethnographic approach to establishing a design lab in a living context of the city. The personal, social, cultural and physical aspects of lived experiences during museum visits, explored in earlier HCI and CSCW research (e.g. Ciolfi & Bannon 2005, Ciolfi & McLoughlin 2011) are quite relevant to take notice of in setting up mobile design experiments for the distributed museum. Theoretical investigations into these levels of place-based experiences can lead to frameworks through which the process of not only questioning the context and intention is brought forward, but also addresses the physical interaction with museum content in the city as it relates to user experience. Our design experiment gives some indications on the role of content in locational experiences related to the continuum between physical place and online space that requires further exploration, that meaning from social media-driven communication platforms within the context of the distributed museum are less about the devices themselves and more about the social and cultural activities that are performed with,

around or through them as part of a meditational process. To this end we have identified key challenges that have arisen as investigative directions as a result of the Akerselva design experiment, challenges that in turn suggest literacies needed in the design of museum communication practices within a distributed museum.

#### PARTICIPATORY METHODS: EXPLORING MOBILE SOCIAL MEDIA PARTICIPATION IN THE CITY

Media-moderated communication is as much tied to a place as anything, however there is a fundamental change in how a sense of place is now experienced (Malpas 2012) with help of technology. Such activities are driven by cultural dynamics that can be described as unstable at best. There is no valid prediction method for determining what type of engagement will have lasting legacies or what will exist as momentary blip on the cultural landscape. In advancing the concept of the Akerselva guide as a socially and culturally mediated, spatial and temporal based experience, the project will need to ask deeper questions of use, or intention and outcome in order to determine the next appropriate iterative path to follow. Intervening by adding museum content in existing Instagram-streams, we define the design probes as means for breaching activities for exploring ongoing cultural practices by contradicting them. These breaching interventions are inspired by the breaching experiments introduced by Garfinkel and Goffman where breaks into small, everyday rules are used to understand the psychology of social systems. By using a breaching approach to PD, the design team were the participatory actors and the existing cultural practices in Instagram was the established design space. The breaching design action had to follow the rules of Instagram publishing, liking and following – and could therefore only exist as interventions that break with ongoing cultural practices through the introduction of thought provoking text that pointed to the historical contradiction of the place. By turning around the question of who participates in what in the design experiment, we had to realize that the design space is given – and we as designers had to think about ways we can participate in the ongoing activities of imagery creation and documentation activities within the city.

#### MUSEUM CONTENT ACROSS CONTEXTS: TENSIONS BETWEEN THE SOCIAL CLASSIFICATION OF COLLECTIVE MEMORY AND MUSEUM TAXONOMIES

In Instagram we encountered a challenge in translating and connecting the institutional metadata with the existing folksonomies that were connected to place in Instagram. Mixing such social tagging and folksonomies with the structured metadata of an institutional classification system has become a major discussion as institutional cultural memory content then mixes with the social processes of online communities (Trant 2009, Dalton 2010). Studies of museum crowd-sourcing photography projects involving amateur photos show that these forms of integration may transform the authentic photos into curatorial frameworks, stripping

the amateur imagery of its unique spontaneity and subjective context (Galani & Moschovi 2010). In this experiment we turned the question of museum participation around, asking how museum content could participate in the ongoing stream of amateur photography practices on Instagram. It is in this turn, the mixing of curatorial content into everyday amateur content, that arises a potential challenge of the relevance of existing practices of hashtagging and the relationship of the hashtag to the user and thus the museum content.

In the river experiment, the choice of hashtags was a strategic decision in that it should poignantly address the specificity of place, while at the same time being flexible to work as location unspecific designations (Wasserman 2011) that could inspire reflections on Instagram. Hashtags were also chosen to connect historical photos to existing tags of contemporary reference to connect pre-existing communities of users. This was both an endeavor in connecting ongoing social practices of place making in Instagram with historical phenomena of the city and a connecting of interpretative tags of historical photos to existing tags that connect communities of users. A multifaceted structure of hashtags provided focus on the types of interpretive material the project hoped to receive from the users. Ideally we would like people to contribute with contemporary documentation photos mirroring the historical photos - but realized that this required an engaged community of followers that would contribute independent of the physical event. This made us aware of the power of the semantics, the hashtags and the descriptive texts as well as the photos chosen from the archive. In this way defining the features for contributions required a design awareness that was deeply informed by knowledge about everyday events of the river.

However, if we now consider this perspective from a more intensive ethnographic study of the patterns of use within the assignment of social-media hashtags, and what those patterns reveal as far as perception and understanding of the subject, we may now begin to cultivate a system of classification that could bridge the gap of institutional metadata and the folksonomies associated with social media consumption. This made us aware of the need for preliminary ethnographic research into the assignment and application of hashtags, to be able to provide prompts for the participation that could provide insight into the associations that users make with their interactions with archival content outside a museum space. The breaching experiments with design probes seems for us to be a promising methodological approach to capture the cultural dynamics of the distributed museum through photosharing applications for historical content.

#### SUSTAINABLE OUTCOMES AND LASTING LEGACIES

Sustainability practices remind us that we can't implement an outcome without being fully aware of its technological shelf life. Within the sphere of the

distributed museum, the concerns of such sustainability become multifaceted. Museums have been keenly aware of sustainability for decades; knowing that a science exhibit that once served for novel and curious engagement for the visitor can slowly, or even quickly, fade into a backdrop of Jurassic structures, silently calling out to be addressed when finances and time allow. This is a continued evolution with the stakes even higher as technology and social engagement advances at a rate that can quickly outpace fiscal resources. The 2012 Mobile in Museums Study funded by the AAM (Tallon 2012) cited the primary challenge in museums with an established mobile platform as 'keeping the experience up to date.' This can also be expanded to include sustaining interest in maintaining the relationships once the excitement of an initial launch is executed and technology moves forward.

The currency of technologically mediated experiences continues to rise with the convergence of platforms accessible through mobile devices. Such experiences have also been challenged by the potential open-ended nature of the activity and the manner in which they can come to be shaped through collaboration as well as the reliance of the software for the outcome. These experiences are often application-dependent in a world where cultural practice very often privileges one form over another. The livelihood of hardware can be measured by sales whereas the livelihood of social media is quite often measured in likes and clicks. Without an ability to conduct analysis and critique of underlying cultural relationships regarding technological engagement, ones that can lead to meaningful experiences and deeper understandings of the use, content, and place actors at play within these new communication platforms, fatigue of continual participation requests and technology interactions may be inevitable.

Choices of application interaction, such as Instagram, will continually need to be readdressed and re-evaluated in order to make decisions leading to prudent use of the technology in the quest to provide value and knowledge as a viable outcome. The Akerselva experiment was born from a query into methods of creating sustainable relationships with museum visitors using social media. However, in a world where social media is being used to capture historical events in real-time, where it has been documented that the world "loses 0.02% of its culturally significant social media everyday" (Nelson & Hany 2012), what becomes of content generated via participation needs to be a vital part of the sustainability conversation. It opens up larger questions of how collective memory building will be housed, archived and studied in the future context of a museum collection.

#### CONCLUSION

Conducting experiments and explorative studies to advance critical design research, validates the process as a critical benchmark within the design process. This

underscores the need for experiment-based outcomes to be analyzed, critiqued and reflected upon. The multiple levels of the distributed museum needs to be explored beyond the historically well established practices of museum exhibition design. This becomes especially relevant in the advent of social media and mobile communication, as these media cast around roles and authorities related to museum content and historical interpretations. The Akerselva Digitalt experiment continues to explore the dynamics of Instagram followers, by arranging interviews to get more directed feedback. This may give us data that could lead to a more empirical analysis of longitudinal user experiences.

In framing an investigation into new forms of museum communication practices within the context of a design experiment, there can often exist preconceived notions of the outcome. At times these notions are confirmed in the concluding results or reflective analysis. However the Akerselva experiment revealed to us that experimenting with social and mobile media within city spaces under the guise of the distributed museum needs a longitudinal approach to be capable of analyzing users experiences of this type of interaction. Social media dynamics are based on collecting followers, a time-based technological function, making it difficult to understand the ways interaction can take part in cultural practices on a more sustainable level. Physical small-scale experimental installations can not only identify immediate physical and socio-cultural parameters, but also make apparent larger questions and investigations. Our experiments indicate that museum images and texts do have to be given a new form to advance museum communication practices within technology-mediated distributed museum. Using existing social media applications as design probes may first introduce involved museum practitioners as to how future museum design processes can be set up and what kind of outcome they might expect. Bringing methods of living labs and design labs into museum design experiments with mobile and social media requires a clear articulation on how the museum content relates to ongoing social and cultural practices of potential visitors. This focus will be better served with an expanded understanding of how a PD framework may fit the practices of actors involved, how complexities of semantic taxonomies involved include software and institutional structures as well as peoples practices, and that meaningful outcomes depend on creating sustainable relations.. The development of critical design approaches, ones that go beyond the novel interaction between museum content and technology, will influence the direction of museum communication practices of the future distributed museum.

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