

The Rise of Curated Crisis Content

Sophia B. Liu
connectivIT Lab

Technology, Media and Society PhD Program at the ATLAS Institute
University of Colorado at Boulder, USA
Sophia.Liu@colorado.edu

ABSTRACT

In a networked world, we are increasingly inundated with information from online data streams especially from the social web. Curation has increasingly become the buzzword for managing this problem of information overload in the digital age. However, the applications and interpretations of curation by social web users are varied and often stray away from traditional curator roles. I present seven curatorial activities (i.e. collecting, organizing, preserving, filtering, crafting a story, displaying, and facilitating discussions) based on the analysis of 100 web artifacts. I introduce the concept, *socially-distributed curation*, to emphasize the distributed nature of this curatorial process emerging from the social web. Lastly, I present seven case studies to illustrate preliminary examples of curated crisis content for four crises. These findings are to inform future designs and developments of crisis management tools that could benefit from curated crisis content.

Keywords

Aggregate, crisis informatics, curate, filter, socially-distributed curation, social technology, social web.

INTRODUCTION

“As curators we have great power to help shape our national memory. It’s a power that we use judiciously and openly. We have the power to determine which objects are saved and whose stories are told.”

– William Yeingst, *September 11 Collecting Curator, Museum Specialist, Division of Social History*

Curators play an important role in our society; they are the stewards of our history. Professional curators traditionally oversee a collection of artifacts and organize exhibitions at cultural heritage institutions. Recently, there has been a rising trend to use the notion of curation as a way of addressing information overload issues online. However, the applications and interpretations of curation by social web users are varied and often stray away from traditional curator roles. In this paper, I explain the meaning of curation in the online world by distilling and then collating the diverse ways in which social web users describe online curatorial activities. I also introduce the concept, *socially-distributed curation*, to emphasize the distributed nature of this curatorial process emerging from the social web. Lastly, I present seven case studies to illustrate preliminary examples of curated crisis content for four crises. The purpose of this paper is to inform future design and development of crisis management tools that could benefit from curated content—relevant, valuable, and reputable content that has been aggregated, filtered, and presented in a way that helps people make sense of massive content streams.

Information Inundation Leads to Curatorial Overload

In a networked world, we are increasingly inundated with information from the data streams that we encounter online as well as through social media sites. Ubiquitous online social technologies (e.g., blogs, wikis, social networking sites, media repositories) generate a plethora of user-generated content publicly accessible via the web. As we increasingly create personal collections online, we each face the problem of “curatorial overload: too much information, too difficult to organize and retrieve” (Van House and Churchill, 2008, p. 297). People are also exponentially generating and sharing content publicly, and now we as a society are faced with this information management problem. Designing curatorial tools can help people sift through and make sense of

Reviewing Statement: This paper represents work in progress, an issue for discussion, a case study, best practice or other matters of interest and has been reviewed for clarity, relevance and significance.

these massive content streams in real-time as well as give civil society the opportunity to make collective, curatorial decisions about what historical content is worthy of being preserved and shared for posterity's sake.

During times of crisis, different stakeholders (e.g., emergency responders, affected publics, government officials, relief organizations, volunteers, etc.) search for as well as provide information as a way of participating in the crisis response milieu. These information seeking and providing activities are now taking place online through the use of information and communication technology (Palen and Liu, 2007; Palen et al., 2009; Starbird et al., 2010). However, the difficulty we all face now is discerning what content is relevant and reliable in these massive online repositories. The purpose of this study is to investigate what kinds of curatorial tools need to be designed to create curated crisis content for the benefit of crisis response and management efforts before, during, and after a major crisis event.

RESEARCH METHOD

The data reported in this paper mainly originate from phase one of a “cultural probes” study, a human-computer interaction (HCI) design method intended to inspire technology design (Gaver, Dunne, and Pacenti, 1999). I use probes to encourage participants to reflect on, self-document, and express their thoughts about curatorial issues in the crisis context. These probes are delivered through social media to local and remotely located participants, and contain a collection of open-ended questions and tasks that involve the use of social technology. However, much of the data I present here draws from the preparatory research activities that I needed to employ first before conducting these social media probe studies.

In the next section, I explain “curation” based on a distillation and collation of how social web users and professional curators explain the term curation in the online context. For this study, I collected and analyzed 100 web artifacts pertaining to curation issues in the social web world (i.e. blog posts, online news articles, and videos including the comments in these posts as well as examples of web services that claim to support curation). For this qualitative research study, I conducted document-based research by analyzing what some ethnomethodologists call “natural documents,” which “refer to various kinds of documents – texts, photographs, drawings, graffiti, whatever – that are produced as part of current societal processes...[that] are not ‘research-provoked’” (Have, 2004, p. 88). These web artifacts are documentary evidence and resources for understanding real-world curatorial issues arising from the social web.

In phase one of the social media probe study, I first began with a Google search on “curation,” which led me to two interesting blog posts: “The Content Strategist as Digital Curator” by Erin Scime and “Can ‘Curation’ Save Media?” by Steve Rosenbaum. I decided to organize these web artifacts for research purposes using Delicious, a social bookmarking web service that uses a non-hierarchical classification system for tagging bookmarks and discovering other people's web bookmarks.¹ Then, I searched for the tag “curation” within Delicious and found more web posts related to curation issues in the social web context. The links within the web posts that I had already collected led me to other relevant web posts on curation. Influential social web users and professional curators wrote many of these web posts. Their interpretations and applications of curation seem to be authentic, credible, and representative resources for this study because they discussed the notion of curation within the context of the social web and based on their own experience and knowledge as participants in the social web.

To understand curatorial issues in the crisis context, I chose seven crisis-specific websites as case studies for showing preliminary examples of curated crisis content.² I conducted phone and email interviews with some of the creators and users of these websites. They were asked general questions about the purpose of the site, what activities they participated in, and their observation of other people's curatorial activities. Data from these interviews are for the probe study. Phase three of the probe study is based on data from phase one and two; phase three focuses more on collecting inspirational data through open-ended questions and tasks. This paper only presents data from phase one and two but not from phase three. Part of the intention of this paper is to show what kind of data is needed first before conducting phase three of the probe studies.

THE CURATORIAL PROCESS

Curation has become a constructive model and metaphor for offering a solution to the information overload issue online. This paper moves away from a role-based definition of a curator and instead focuses more on the activities and interactions that take place within the curatorial process. Below I describe seven different types of

¹ The 100 web artifacts are on Delicious at: <http://delicious.com/grassrootsheritage/curation>

² The seven case studies are on Delicious at: http://delicious.com/grassrootsheritage/case_study

curatorial activities based on distinct roles often associated with curators found in cultural institutions. Many of these activities occur concurrently, feed into one another, and are carried out by multiple people simultaneously.

1. *The Archivist*: Curation consists of **finding, collecting, and aggregating** artifacts to create a collection. The goal here is to pull together a diverse set of artifacts from different sources in order to obtain suitable coverage on a particular topic.
2. *The Librarian*: Curation consists of **organizing, classifying, and categorizing** each item in the collection. The goal here is to catalog each artifact in order to create a taxonomy or a metadata structure using keywords and tags so that each item is easily searchable.
3. *The Preservationist*: Curation consists of **caring for, preserving, and maintaining** the collection through stewardship. The goal here is to engage in preservation activities that engender long-term maintenance of and access to the collection for posterity's sake.
4. *The Editor*: Curation consists of **selecting, filtering, and verifying** the items in the collection that will later be exhibited. The goal here is to sift through, prioritize, and assess the artifacts in the collection and then choose the most relevant, reputable, and meaningful artifact to share.
5. *The Storyteller*: Curation consists of **weaving together** the selected artifacts and then **crafting a story that provides explanatory text or commentary**. The goal is to communicate a message by explaining the value and relevance of the artifact in the context of the other artifacts that were chosen.
6. *The Exhibitor*: Curation consists of **displaying, arranging, and presenting** a set of artifacts in an exhibition often by **juxtaposing** the artifacts in a purposeful way. The goal is to choose a particular medium or method for communicating the story in order to create a compelling experience and evoke a response.
7. *The Docent*: Curation consists of community members **teaching and guiding** visitors through an exhibit as well as **facilitating relevant discussions, reflections, and critiques**. The goal here is to be the interlocutor between the artifacts in the exhibit and the viewers of the artifacts.

The purpose of categorizing these curatorial activities based on these seven roles is to make the diverse activities associated with curation more distinct. Many of the web artifacts discussed only a set of these activities or focused on a particular activity like filtering. Many of these artifacts also began alluding to curation as a more social and participatory activity particularly in the social web context.

Towards Socially-Distributed Curation

The curation process explained above has primarily taken place through institutions. However, there is a tension between the existing practice of institutionally-driven curation and emerging curatorial practices taking place through online networks. I call the latter *socially-distributed curation*, which is an adaptation of the “socially-distributed cognition” theory (Hollan, Hutchins, and Kirsh, 2000) often used to analyze collaborative work practices by examining the interactions between people and artifacts in their work environment. I anticipate the need for a suite of tools to facilitate the seven different types of curatorial activities mentioned above but in a more socially-distributed way. Instead of one professional carrying out these seven curatorial duties, such duties could be crowdsourced through online social networks. A user may have ad hoc expertise on a particular curatorial activity, depending on their skill set and/or knowledge of the topic or event, and become one of the many users participating in the curatorial process. Furthermore, curation is an active process of engaging with and making sense of artifacts. However, many of us are passive preservers since organizing, filtering, and deleting often take too much time and effort (Van House and Churchill, 2008, p. 303). Social web services are beginning to support active participation in curatorial activities.

CASE STUDIES OF CURATED CRISIS CONTENT

In this section, I present seven case studies that exemplify preliminary examples of socially-distributed curation in the crisis context. Each case study only illustrates a subset of the seven curatorial activities that I presented above. These case studies are intended to inform and inspire the design and development of future crisis-oriented curation tools that would support all seven curatorial activities.

1984 Bhopal Gas Leak: The Bhopal Disaster Wikipedia Article

On the evening of December 2-3, 1984, 40 tons of lethal Methyl Isocyanate gas leaked from a Union Carbide pesticide plant in Bhopal, India. This was the worst industrial disaster in history killing 8,000 people instantly. At least 22,000 people have since died from gas-related diseases and more than half a million are permanently injured. Although many civil and criminal lawsuits have been filed, no one has been successfully prosecuted. Wikipedia articles are created through a collaborative process of finding credible sources and editing them into the article to explain a specific topic from multiple perspectives. For example, one participant actively involved in the Bhopal social justice campaign explains how the “Bhopal disaster” Wikipedia article currently provides a well-balanced story, particularly about what happened before the gas leak and the resulting health effects in the aftermath of the gas leak caused by Union Carbide, which is now owned by Dow Chemical. This part of the Wikipedia article was more thoroughly edited just before the 25th anniversary on December 3, 2009, when many people began revisiting this historic event. Having a representative account of this historic tragedy was particularly meaningful to social justice activists, especially when the WikiScanner site revealed in 2007 evidence that a computer linked to an IP address registered to the Dow Chemical Company deleted information in Wikipedia about the Bhopal disaster. The collaborative editing structure of wikis allows the wider public to more accurately rewrite the history of the Bhopal gas tragedy by engaging in certain types of socially-distributed curatorial activities, depending on one’s expertise (e.g., finding trusted sources discussing the health effects of the crisis, weaving together these different sources to present a more coherent story, etc.). This case study focuses on the curatorial activities of collecting, filtering, verifying, and crafting a story.

2001 September 11 Attacks: The Complete 9/11 Timeline at History Commons

The September 11, 2001 attacks were a series of coordinated suicide attacks by 19 al-Qaeda members. Four commercial passenger jet airliners were hijacked: two planes crashed into the Twin Towers of the World Trade Center in New York City, one plane crashed into the Pentagon in Arlington, Virginia, and one plane crashed into a field near Shanksville, Pennsylvania. These attacks led to the death of 2,973 people and the 19 hijackers. In response to these attacks, the United States launched the War on Terrorism leading to the invasion of Afghanistan where the al-Qaeda terrorists were thought to be located. History Commons created the “Complete 9/11 Timeline,” which is an attempt to collectively create a historical record of 9/11 from a wider swath of society. History Commons contrast themselves to Wikipedia by stating that they present information in a larger context through timeline-based projects rather than separate articles. The Complete 9/11 timeline is one of their most comprehensive timelines providing information about events proceeding, during, and after the 2001 attacks from vetted sources through a three-step peer-review process. For example, the “Before 9/11” category contains 732 events beginning in 1976 discussing the Soviet War in Afghanistan. The last event in the timeline occurs on December 8, 2009 from a TIME’s Magazine article interviewing a CIA Officer about Osama Bin Laden. Their 9/11 story begins well before 2001, but it also continues the story up into the present day. A History Commons staff member explained that they are “curating” information by putting a wide variety of vetted sources of information into a broader temporal context. Each event entry associated with the 9/11 attacks is hyperlinked to other relevant events in the timeline. In the future, they plan to create a web application that archives primary sources to preserve the online public record and to allow users to group together certain event entries from a timeline project in order to create their own sub-timelines for social action research purposes. This case study focuses on the curatorial activities of collecting, filtering, verifying, preserving, and presenting.

Climate Change Crisis: Global Climate Change Flickr Group and Climate Pulse

The climate change crisis has become a global environmental issue. Some natural hazards phenomena that are being attributed to the climate change crisis are atypical temperature changes and an increasing amount of heat waves, warm spells, droughts, heavy precipitation events, hurricanes, storm surges, and sea level rise. Although the effects are an increase in natural hazards, many claim that climate change is a human-caused disaster. People are increasingly using social technologies to make sense of climate change by working out the causes, effects, and solutions to this crisis. For example, the “Global Climate Change” Flickr group administrator explains how the pool of Flickr images in the group creates a graphic story of how people interpret climate change through digital pictures. The collection of photos portrays the range of connections that people are making between their photos and the climate change phenomenon. There are also 186 discussions with topics entitled “Profiting from Climate Change,” “Putting to Sleep the Myth of Nuclear,” and “Solutions.” This case study focuses on the curatorial activities of collecting, preserving, interpreting, and facilitating discussions.

“Climate Pulse” is another site that brings together multiple types of curatorial activities on climate change. They are “aggregating, editorialising and socialising the climate change debate...[by tracking] a wide range of

sources for information, comment and content about the Copenhagen Climate Change Conference (COP15).” The site collates blog posts, news websites, tweets from Twitter, Flickr images, and other sources. This is not just an aggregation site, since it has an editorial layer and a social layer. The “editorial layer” allows “curators” (anyone logged into the site) to choose and display specific content. The “social layer” allows users to not only tag and categorize the content but also to choose their affiliation and decide whether the content is a solution or a problem to the climate change debate. As such, this case study focuses on the curatorial activities of aggregating, selecting, displaying, and facilitating reflections from the users.

2010 Haiti Earthquake: Blog Posts, Netvibes and Twitter Lists

On January 12, 2010, a 7.0 magnitude earthquake occurred near the town of Léogâne in Haiti killing over 230,000 people. During my recent research study on the use of social media technology in response to the 2010 Haiti Earthquake, I myself engaged in socially-distributed curation while also coming across other similar activities. I began aggregating key Twitter users and lists on the “#haiti” topic in a blog post. I publicly mentioned this blog post in my tweets and later received a comment on my blog post from a professor who added my blog post to his Haiti Earthquake site on Netvibes, a site that asserts itself as (re)mixing the web by allowing users to create publicly available personalized dashboards. The professor states that he “curated” the Haiti Earthquake Netvibes site by organizing Haiti-related sources into 11 media-specific tabs. Each tab contains multiple widgets displaying a wide variety of online resources created in the aftermath of the earthquake. The widgets in each tab allow the user to interact with each resource directly without having to leave the page. As such, this case study focuses on the curatorial activities of collecting, selecting, organizing, and displaying of crisis content. Since November 2009, Twitter users have been creating and following Twitter Lists, which aggregate tweet feeds from a chosen set of Twitter users. Twitter and many Twitter List web services describe the creator of a list as a curator. Over 400 Haiti earthquake-related Twitter Lists were created. The purpose of these lists is to ‘find the signal in the noise.’ Some lists aggregate Twitter users who are on the ground in Haiti while others aggregate Twitter feeds from relief agencies helping Haiti. This case study focuses on the curatorial activities of selecting and aggregating users who are creating crisis content.

CONCLUSION

Curation has increasingly become the buzzword for managing the problem of information overload in the digital age. However, it is important to recognize that multiple activities or duties are associated with the curatorial process (i.e. collecting, organizing, preserving, filtering, crafting a story, displaying, and facilitating discussions) and, at the same time, these activities are interconnected and feed back into each other especially when they occur in socially-distributed ways. We are beginning to see examples of software tools and web services, such as the ones presented here, that claim to support curation, but often such tools decouple these diverse curatorial duties. The seven crisis-related case studies provide just a glimpse at how curated crisis content can be used by any stakeholder participating in the crisis response milieu. Future publications will elaborate on the design implications for developing socially-distributed curatorial tools.

ACKNOWLEDGMENTS

I would like to thank my participants. This research has been supported by the U.S. National Science Foundation (NSF) through an NSF Graduate Research Fellowship awarded to the author as well as through grants IIS-0546315 and IIS-0910586. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of NSF.

REFERENCES

1. Gaver, B., Dunne, T., and Pacenti, E. 1999. Design: Cultural probes. *interactions* 6, 1, 21-29.
2. Have, P. T. 2004. *Understanding Qualitative Research and Ethnomethodology*. London: Sage.
3. Hollan, J., Hutchins, E., and Kirsh, D. 2000. Distributed cognition: Toward a new foundation for human-computer interaction research. *ACM Trans. on Computer-Human Interaction (TOCHI)*, 7, 2, 174-196.
4. Palen, L. and Liu, S. B. 2007. Citizen communications in crisis: Anticipating a future of ICT-supported public participation. *Proceedings of Human Factors in Computing, CHI '07*, 727-736.

5. Palen, L., Vieweg, S., Liu, S. B., and Hughes, A. L. 2009. Crisis in a Networked World: Features of Computer-Mediated Communication in the April 16, 2007, Virginia Tech Event. *Social Science Computer Review, E-Social Science* 27, 5, 1-14. London: Sage.
6. Starbird, K., Palen, L., Hughes, A. L., and Vieweg, S. 2010. Chatter on the Red: What hazards threat reveals about the social life of microblogged information. *Proceedings of the on Computer Supported Cooperative Work, CSCW '10*, 241-250.
7. Van House, N. and Churchill, E. F. 2008. Technologies of memory: Key issues and critical perspectives. *Memory Studies*, 1, 3, 295-310.