

# Preserving Social Media

*Opening a Multi-Disciplinary Dialogue*

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## **Abstract**

*Digital artefacts generated through use of social media tools have potential long-term value to individuals, organizations and societies. If there is a desire to systematically collect and preserve accounts of daily life, government activities, and societies' documentary heritage, archival approaches must account for changing information systems -- the tools, policies, and practices through which we engage in the contemporary information ecosystem. Through this paper we argue that in light of the growing complexity of digital information practices, particularly in relation to the use of social media, archivists need look to the scholarship of design and planning, in particular the work of human computer interaction designers. In turn, the designers of digital information systems need to engage, draw upon, support, challenge and inform contemporary archival theory and practice.*

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Elizabeth Shaffer is a doctoral candidate at the School of Library, Archival and Information Studies (the iSchool@UBC) from which she received a Master of Archival Studies degree. Her dissertation research is at the intersection of social media and archival theory focusing on the preservation, policy and recordkeeping challenges posed by information and communication technologies, in particular social media. Her work aims to build on existing archival theory and practice to inform policy on social media use and records management and preservation.

## 1. Introduction

The digital artefacts generated through use of social media tools have potential long-term value to individuals, organizations and societies. If there is a desire to systematically collect and preserve accounts of daily life, government activities, and societies' documentary heritage, archival approaches must account for changing information systems -- the tools, policies, and practices through which we engage in the contemporary information ecosystem. Through this paper we argue that in light of the complexity of digital information practices, particularly in relation to the use of social media, archivists need look to the scholarship of design. In turn designers, specifically designers of digital information systems, need to engage, draw upon, support and challenge contemporary archival theory and practice. Through this paper we argue that the field of human computer interaction is uniquely positioned to work with archivists to both inform archival theory and practice and in turn to be informed by archival theory and practice. Archivists are well aware of the long-term influence records and the information systems that hold them have on the ability of future generations to access and interrogate their documentary heritage. We illustrate the potential for these collaborations by applying the design scholarship of Rittel and Webber<sup>1</sup> to a specific archival challenge, governments' use of social media. Through a discussion of Rittel and Webber's concept of a "wicked problem" we identify paradoxes that arise as system designers, users, and archivists approach social media artefacts from a plurality of conceptions concerning what is of value. We identify intersections where these interested parties might engage the problematic situations that the wish to preserve social media documentary objects foregrounds. We posit that this nascent conversation between concerned parties has the potential to lead to future generations of digital platforms that more deeply engage the broad societal challenges of the long-term preservation of digital documentary artefacts.

## 2. Context

The near ubiquitous use of social media by individuals, organizations and governments is generating documentary digital artefacts, the nature of which much is unknown. The various platforms individuals and organizations utilize to generate social media artefacts are often held by third party for-profit organizations whose business models are predicated on the collection, aggregation and monetization of users' data. The ephemeral nature of this web based information and the rapid evolutionary nature of social media tools and technologies facilitates an information ecosystem whose modalities, affordances and practices challenge the application of traditional archival functions such as appraisal, preservation and access. Just in the past five years we witnessed the disappearance of entire online communities and the majority of their digital artefacts with the dissolution of GeoCities and the rebranding of the social bookmarking site delicious when Yahoo purchased it in 2005. The business models that facilitate the use of and access to these sites and their data are often in direct conflict with the obligations and motivations of societies to ensure the preservation of their digital heritage. Individuals, organizations and governments utilizing these platforms are challenged because of the conflicting values present in this environment -- those of the platforms' designers; the platforms' owners; the platforms' users and the social, political and technical environments in which these roles operate.

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<sup>1</sup> Horst W. J. Rittel, and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences* 4, no. 2 (1972): pp. 155-169.

These examples highlight how the challenge of preserving digital heritage increases exponentially as ever shifting digital information systems evolve, along with the practices and policies through which we enact them. Yet, the *UNESCO Charter on the Preservation of Digital Heritage*<sup>2</sup> declares the necessity to ensure the long-term preservation of the world's digital heritage in all forms. It states that digital heritage is a "common heritage" amongst all nations consisting of assets that are "unique resources of human knowledge and expression" – many of which "have lasting value and significance" requiring protection and preservation for future generations. The purpose of which is the long-term accessibility to the public. The threat of loss is very real and action is needed by all stakeholders, as "continuity of the digital heritage is fundamental."<sup>3</sup> The development of social media is simply one of many phases in the continuing evolution of information and communication technologies, and based on current tools and practice, we are likely to lose the documentary artefacts from this stage. Although loss of entire systems of knowledge is by no means unique in the history of humankind, we are not convinced that this is a precedent to intentionally follow.

### 3. Reframing by Design

Through this position paper we argue that if the long-term preservation of documentary digital artefacts created through engagements with social media, is a goal, it requires the archival profession to (re)consider *where* in the digital artefact generation process they engage. Similar to the shift that happened in the realm of electronic records, when it became necessary for archivists to inform the design and use of formal record systems, we propose that archivists engage proactively with those who design contemporary and future information systems. As a nascent step in this direction, we suggest an inquiry into the field of design where scholars are well versed in the art of taking action in problematic situations when there are many unknowns.

To start the inquiry, we turn to the work of Rittel and Webber in the early 1970's and their description of a "wicked problem."<sup>4</sup> Working at the intersection of the design and planning disciplines, Rittel and Webber's work is in large part a response to growing public dissatisfaction with unsuccessful crime reduction programs, disappointing education reform projects and similar failed societal initiatives. They begin with a strong critique of the idealized, linear representations of societal problems prevalent in the early 70's. They illustrate why rationalistic, hard science inspired approaches to highly problematic situations are doomed in large part because societal problems are by their very nature multi-faceted and ever changing, thus they are neither fully knowable nor solvable. As an alternative, Rittel and Webber introduce the term wicked problem, a moniker for societal problems that "are never solved. At best they are only re-solved-over and over again."<sup>5</sup>

We posit that if there is a desire to systematically collect and preserve accounts of daily life, government activities, and societies' documentary heritage as generated within social media platforms, then striving to meet that desire represents a *wicked problem*. In the following paragraphs we apply select characteristics of wicked problems as described by Rittel and Webber to one type of social media engagement, governments' communications with their publics. Through this exercise, the government

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<sup>2</sup> UNESCO, 2003, [http://portal.unesco.org/en/ev.php-url\\_id=17721&url\\_do=do\\_topic&url\\_section=201.html](http://portal.unesco.org/en/ev.php-url_id=17721&url_do=do_topic&url_section=201.html).

<sup>3</sup> Ibid.

<sup>4</sup> Rittel and Webber, "Dilemmas," p. 160.

<sup>5</sup> Ibid.

adoption of social media serves as an exemplar to illustrate the potential of design to help archivists reframe and engage challenge of “preserving” social media documentary artefacts.

In the following section we discuss select features of wicked problems and demonstrate how these characteristics can be fruitfully applied to the context of governments adopting social media tools. There are more features to wicked problems, but we wish to be illustrative, not exhaustive. We explicate Rittel and Webber’s points, drawing them into a government context in an effort to ground the higher level argument, that the design of information communication technologies (e.g., social media tools) needs to be informed by the scholarship and discourse around the long-term access to our digital heritage.

### 3.1. No Definitive Formulation

Rittel and Webber argue, "the formulation of a wicked problem *is* the problem!"<sup>6</sup> It is necessary to formulate the problem and conceive of the solution at the same time. Their presentation of the hard sciences approach describes a linear process from problem statement, to hypothesis, to experimentation and then to solution. However, for wicked problems, they claim that through determining the right question, one begins to develop the solution. Consider the question: how to preserve trustworthy digital artefacts generated with social media over space and time. A positivistic approach would start with identifying the problem, then moving through a series of steps to figure out a solution. For wicked problems, the model of planning is that of an “argumentative process in the course of which an image of the problem and of the solution emerges gradually among the participants, as a product of incessant judgment, subjected to critical argument.”<sup>7</sup>

Governments have harnessed the affordances of social media technologies to open up innovative communication channels to facilitate immediate and ongoing interaction with their citizens.<sup>8</sup> This engagement often utilizes a variety of third-party platforms with any number of evolving affordances. Yet, little is fully understood about the attributes of these products, the potential challenges they pose to archival theory and practice and whether it is possible to effectively apply current concepts of archival theory and practice to ensure that social media artefacts contribute to a trustworthy documentary heritage.<sup>9</sup> Additionally, the policy environment within which these platforms are utilized often predates the onset of these technologies and has its foundation in a pre-social media environment. It is early in the investigation into the complexity of social media, the artefacts generated, the online environment they inhabit and the challenges they pose to traditional archival theory and practice. Archival scholars, practitioners and organizations are in the nascent stages of the “argumentative process” and an “image of the problem” is manifesting from the dialogue around the potential issues that social media artefacts and their long-term preservation present.<sup>10</sup> Additionally, ideas and approaches are appearing in the literature,

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<sup>6</sup> Ibid., p. 161.

<sup>7</sup> Ibid., p. 162.

<sup>8</sup> Paul T. Jaeger, Jimmy Lin, J., and Justin M. Grimes, “Cloud Computing and Information Policy: Computing in a Policy Cloud?” *Journal of Information Technology & Politics* 5, no. 3 (2008): pp. 269-283.

<sup>9</sup> Michael Moss, “Without the Data, the Tools are Useless: Without the Software, the Data is Unmanageable,” *Journal of the Society of Archivists*, 31, no. 1 (2010) pp. 1-14.

<sup>10</sup> Luciana Duranti and Elizabeth Shaffer, “eLearning Records: Are There Any to Manage? If So, How?” in *Social Media and the New Academic Environment: Pedagogical Challenges*, ed. Bogdan Patru et al. (IGI Global, 2013), n.p.; Patricia Franks, “Understanding Web 2.0 and Challenges for the Records Manager,” *Information and Records Management Annual* (2009): pp. 107-121; Bruce W. Dearstyne, “Blogs, mashups and wikis oh my!” *The Information Management Journal* 41, no. 4 (2007): pp. 25-28, 30, 32-33; Sharon Henhoeffter. *Web 2.0 and Recordkeeping: Context and Principles* (Ottawa: Library and Archives Canada, 2010), <http://www.collectionscanada.gc.ca/digital-initiatives/012018-3401-e.html>; Theresa Smith, “#History #Dilemma:

representing initial dialogues seeking (re)solutions to issues of appraisal,<sup>11</sup> capture and preservation,<sup>12</sup> and policy.<sup>13</sup> Those engaging in the discourse around these various projects are attempting to articulate the problem space in order to identify potential (re)solutions.

### 3.2. No Stopping Rule

Rittel and Webber posit that wicked problems can never be solved for good and one can always do better, however, factors that are external to the problem necessitate stopping when a “good enough” (re)solution is achieved.<sup>14</sup> Such factors may be limited resources – time, money, or political will. There is no singular “solution”; rather, there is a continuous series of ever-evolving processes based on a combination of theory and empirical inquiry that inform the design of systems, practices and procedures.

Governments are rapidly adopting social media<sup>15</sup> predicated on the belief that it is an effective way to engage with citizens through dissemination of information and active, multi-directional communication.<sup>16</sup> As such, the adoption often follows a bandwagon approach, utilizing the most prevalent and popular tools at hand. This approach points to the no stopping rule as archivists are required to spend time, resources and resolve to continuously develop their knowledge of new platforms, and accompanying affordance and products. Additionally, external factors such as limited resources and regulatory and legal constraints in a government context contribute to the constant need to find “good enough” solutions.

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Social Media Proving Difficult for Archivists,” *Postmedia News*, July 13, 2012; Leisa Gibbons, “Testing the Continuum: User-Generated Cultural Heritage on YouTube,” *Archives and Manuscripts* 37, no. 2 (2010): pp. 89-112.

<sup>11</sup> National Archives and Records Administration (NARA), and National Records Management Program (NRMP). *A Report on Federal Web 2.0 Use and Record Value*. 2010, <http://www.archives.gov/records-mgmt/resources/web2.0-use.pdf>; Christopher A. Lee, “Collecting the Externalized Me: Appraisal of Materials in the Social Web,” in *I, Digital: Personal Collections in the Digital Era*. Ed. Christopher A. Lee (Chicago: Society of American Archivists, 2011), pp. 202-240.

<sup>12</sup> National Archives and Records Administration. “Implications of Recent Web Technologies for NARA Web Guidance,” <http://www.archives.gov/records-mgmt/initiatives/web-tech.html>; Brand Neimann, “A Gov 2.0 Spin on Archiving 2.0 Data,” *Federal Computer Week*, January 27, 2011, <http://fcw.com/articles/2011/01/31/comment-brand-niemann-social-media-archives.asp>; Jennifer Wright, June 13, 2012, “To preserve or Not to Preserve: Social Media,” *The Bigger Picture*, <http://siarchives.si.edu/blog/preserve-or-not-preserve-social-media>; Gibbons, “Testing.”

<sup>13</sup> Patricia Franks, “How Federal Agencies Can Effectively Manage Records Created Using New Social Media Tools,” *IBM Center for the Business of Government*, 2010, <http://www.businessofgovernment.org/report/how-federal-agencies-can-effectively-manage-records-created-using-new-social-media-tools>; American Council for Technology (ACT), and Industry Advisory Council (IAC), “Best practices Study of Social Media Records Policies,” 2011, <http://www.egov.vic.gov.au/website-practice/web-2-0-a/social-networks-and-social-media-in-government/best-practices-study-of-social-media-records-policies-in-pdf-format-646kb.html>; Jana Hrdinova, Natalie Helbig, and Catharine Peters. *Designing Social Media Policy for Government: Eight Essential Elements*. (Center for Technology in Government: The Research Foundation of State University of York, 2010)

<sup>14</sup> Rittel and Webber, “Dilemmas,” p. 162.

<sup>15</sup> Mohammed Dadashzadeh, “Social Media in Government: From eGovernment to eGovernance,” *Journal of Business & Economics Research* 8, no. 11 (2010): pp. 81-86; Henhoffer, *Web 2.0*; Jaeger et al., “Cloud Computing.”

<sup>16</sup> Omar El Akkad, “Clement Pushes Twitter Integration in Redesign of Government Websites,” *The Globe and Mail*, November 29, 2011; F. Diane Lux Wigand, “Adoption of Web 2.0 by Canadian and US Governments,” in *Comparative e-Government*, ed. Christopher G. Reddick (New York: Springer, 2010), pp. 161-181.

### **3.3. Solutions are neither true nor false**

Wicked problems have no true or false answers. The assessment of proposed solutions are often judged on criteria of “better or worse” or how “satisfying” a solution may be.<sup>17</sup> Government use of social media creates a variety of influences that will affect the satisfaction of any given solution. Tensions between and among legislation governing privacy, freedom of information, data protection, intellectual property, access and retention all complicate a potential agreed upon set of formal rules to determine the correctness of a solution. (Re)solutions that are supported technically may not fully support ethical or legal responsibilities.

### **3.4. There is no immediate and no ultimate test of a solution to a wicked problem**

Experimentation with dependent and independent variables that allow a scientist to determine causal relationships are not possible when one is wrestling with a wicked problem. The variables refuse to be isolated. It is not possible to trace all of the repercussions of complex information systems (tools, practices, policies, protocols) developed to preserve social media, to a singular, temporal stopping point where they can be judged. There are unforeseen consequences to each solution that are played out over an “unbounded” period of time.<sup>18</sup> These dynamic consequences, in a government environment, can lead to undesirable outcomes that have impacts across contexts, including policy, decision making, and/or legislation.

### **3.5. No true trial and error period**

With wicked problems, every implemented solution is consequential and the traces of these solutions cannot be undone. A system’s very existence is going to influence human lives resulting in various personal, organizational, and political repercussions. A government’s use and subsequent action to engage with citizens via social media does not create “trial” information and/or records, but rather potential digital heritage material with long-term value. If the choice of system allows the monetization of citizen data, the design of data within a system wherein the identity or integrity of the information is in question, or if users’ privacy and security are put at risk by using the system, such actions have irreversible repercussions. Subsequently, the actions taken by governments to preserve this information, if implemented with an ineffective solution, could result in the loss of irreplaceable documentary heritage and/or potential records of government actions and accountability. As such, every attempted solution counts and must be weighed both for its repercussions and the consequences that may result from the necessity to “undo” the solution. For example, a government’s decision to elicit input into policy making or elicit voter registration via a third-party social networking site such as Facebook<sup>19</sup> are actions with repercussions for the potential preservation of and access to this information. Can the government ensure the trustworthiness of data collected via Facebook? If this is the only way to engage with the process, what are the implications of citizens being “required” to use Facebook? What are the public policy implications for data access, privacy, and freedom of information?

Finally, we reflect on Rittel and Webber’s articulation of why they chose the term wicked:

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<sup>17</sup> Rittel and Webber, “Dilemmas,” p. 163.

<sup>18</sup> Ibid.

<sup>19</sup> Cyrus Farivar, “Washington State Will Enable Voter Registration via Facebook,” *Ars Technica*, July 17, 2012, <http://arstechnica.com/business/2012/07/washington-residents-to-be-able-to-register-to-vote-via-facebook/>.

[W]e are calling them ‘wicked’ not because these properties are themselves ethically deplorable. We use the term ‘wicked’ in a meaning akin to that of ‘malignant’ (in contrast to ‘benign’) or ‘vicious’ (like a circle) or ‘tricky’ (like a leprechaun) or ‘aggressive’ (like a lion, in contrast to the docility of a lamb).<sup>20</sup>

Although a wicked problem is not indicative of malicious intent, it may be morally questionable, even deplorable, to ignore it. The design and use of social media by government bodies is by no means a morally deplorable act. It is actually necessary for citizens to gain access to their government through initiatives such as Open Data and Open Government. However, to ignore the difficulties of preserving the documentary artefacts created through these interactions with citizens has strong ethical (and legal) implications.

Through the exercise of applying the design concept of a wicked problem to the issue of preserving the documentary artefacts created through governments’ use of social media to communicate with its citizenry, we develop an appreciation for the insights of design scholarship. The inquiry highlights the lack of a definitive formulation of the problem and that the argumentative process, the ongoing debates about what the problem is and how to address it, is indeed a critical part of the process. In turn, it is a process with no stopping point in that the challenges of digital preservation will never be solved for good. Instead there will likely be a series of iterative “good enough” (re)solutions. Indeed, the wicked problem framing suggests that there is no ultimate test for these solutions, no trial and error period, and there are many contextual constraints.

All of these obstacles, and yet, action needs to be taken. We suggest that archivists expand the dialogue to include consideration of design perspectives, not just in terms of utilizing design theory, but also through direct engagement with the designers of digital information technologies. As one potential area for collaboration, consider the field of human computer interaction. Human computer interaction researchers and practitioners are informing, if not directly designing, the digital platforms upon which social media interactions take place and the resulting artefacts they generate.

#### **4. Archivists Informing System Design**

Scholars and practitioners from the field of HCI can assist archival theorists in facilitating the interrogation of attributes of records within a social media context, and in turn, be informed by archival theory in the design of future information systems. With a deep knowledge of human cognition, technological capabilities, networking, human computer engagement and the importance of cultural contexts, the field of HCI is particularly well positioned to buttress archival goals in the social media milieu. However, they must first develop an understanding of archival goals and the centrality of the record.

Archives have the responsibility of safeguarding and preserving *records* of citizens, institutions and governments for use by current and future generations. Within archival theory and practice there exists a nuanced understanding of the attributes of a record. Although contemporary social media documentary artefacts appear to hold the promise of serving as records they may not hold all the attributes of a traditional record. For them to do so presents complex challenges due in large part to their form and the context in which these forms of information are created. However, what these forms of information do

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<sup>20</sup> Rittel and Webber, “Dilemmas,” p. 160.

hold is the potential for informing societal memory and holding governments, institutions (public and private), and individuals accountable for their actions.

As Terry Eastwood points out, “the first object of archival theory is the nature of archival documents or records.”<sup>21</sup> Archivists’ expertise lies with the creation, preservation and use of records and archives and the context of their creation and use – including the social, legal, technological and cultural environment.<sup>22</sup> The ability of the document to attest to the fact and act it captures for action, future reference and/or to extend memory,<sup>23</sup> the trustworthiness of records is what archivists can contribute to the broader discourse on systems design. How might archival concepts such as trustworthiness and archival practices inform/educate designers as they work to design systems?

Politicians hold town halls and announce policy reform,<sup>24</sup> governments encourage voter registration<sup>25</sup> and citizens engage with agencies and commissions<sup>26</sup>— all within third-party social media platforms. All of these actions have the potential to generate digital artefacts that contribute to the documentary heritage of the early 21<sup>st</sup> century. Yet, the modalities and ephemeral nature of social media artefacts can be antithetical to the archival requirement to preserve authenticity and ensure reliability and accuracy over time and space. It is not enough to “save it all”—archival attention to provenance and context, archivists’ understanding of the concepts that underpin trustworthy records are relevant principles that should be applied in this shifting social media landscape in order to effectively capture and preserve this digital documentary heritage.

At this point in the conversation we are not cheeky enough to suggest that we have answers; however, we have plenty of questions such as: how can archival theory and practice evolve to keep pace with rapidly changing technologies and transforming information practices in contexts utilizing social media? How can archival theory and practice inform the design of social media information systems? How can the information policies that mediate and regulate information practice account for ever-evolving technologies and their affordances?

## 5. Conclusion

Current practices in the field of HCI focus on ways to support interaction in the shorter-term rather than issues of longer-term preservation, societal heritage and understanding. In the past, thinking about how to preserve records post hoc worked pretty well. The difference between preserving records post-hoc in the pre-digital environment and the complexity of trying to do the same in the current information and communication technology environment is enormous. Pre-digital it was possible to gather documents in a box at semi regular intervals, knowing that at a later date it would be possible to effectively preserve the documents deemed records when resources permitted. In a paper environment, there was often sufficient information recorded on the documents themselves and within the recordkeeping system, information practices were often understood well enough to reconstruct context, and the medium was stable as long as environmental controls were monitored. In the contemporary social media environment, there is no digital box that Facebook transactions are being tossed into. We cannot depend upon standardized information

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<sup>21</sup> Terry Eastwood, “What is Archival Theory and Why is it Important?” *Archivaria* 37 (1994): pp.122–130.

<sup>22</sup> *Encyclopedia of Library and Information Sciences*, ed. Marsha J. Bates and Mary Niles Maack (Taylor & Francis, 2010), s.v. “Archival Science,” pp. 179-191.

<sup>23</sup> Eastwood, “Archival Theory.”

<sup>24</sup> Smith, “Social Media.”

<sup>25</sup> Farivar, “Voter Registration.”

<sup>26</sup> Truth and Reconciliation Commission of Canada, <http://www.trc.ca/websites/trcinstitution/index.php?p=3>.

being encoded in these transactions, the information practices are not well understood, there is limited or no control over the creation of these documents, and the medium is less stable than invisible ink. As research into long-term digital preservation has shown, preservation in the digital environment must begin at creation.<sup>27</sup> In the born digital environment archival input needs to be part of the initial information system design. If an archival professional is called upon only after the systems are created and the practices and policies are in place, all she can do is provide a professional opinion of what has been and will continue to be lost.

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