Increasing Access in 140 Characters or Less: Or, What Are Archival Institutions Doing on Twitter?

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ABSTRACT

Archival institutions are increasingly participating in social media as a form of digital outreach. The affordances of popular online platforms such as Twitter allow managers of institutional accounts to highlight digital content, publicize events, and interact with users who might not otherwise know about the institution. This article presents a picture of archival activity on Twitter, using data collected from 34 institutions during October 2011. The sample accounts range from formal broadcasting of information to a more informal, conversational style. This article seeks to understand current institutional behavior on the platform and asks, "What are archival institutions doing on Twitter?"

KEY WORDS

Twitter, Tweets, Social Media, Advocacy, Public Programs

In recent years, the archival literature has increasingly considered the role of archives in online environments. The emergence of Web 2.0 technologies affords new opportunities for institutions to connect with users, solicit feedback and user-generated content around digital collections, and engage in promotional or marketing activities in extremely popular online networks, such as Facebook and Twitter. But what are archival institutions actually doing in these communities? Are they able to communicate meaningfully with users, or are they limited to more generic promotional activities?

This article presents the results of a study that collected Twitter data from a sample of 34 archival institutions during the month of October 2011. The 1,880-tweet dataset generated during this time frame reveals the diversity of archival engagement on Twitter. While some institutions post relatively infrequently, others boast followers in the thousands and post daily—sharing site content, linking to relevant information from across the Web, and interacting with users who are interested in archives. There is not a single "correct" approach for archives using Twitter, but a number of exemplary accounts, managed by different types of archival institutions, provide models for the various ways of engaging with virtual users and guidance for others thinking about initiating or expanding their use of Twitter.

Related Literature

This literature review begins with an examination of Twitter and other social media in archives and special collections. My goal is to provide some context for this study and to understand the motivation and range of activities being performed across the archival community. Next, I highlight some of the ways libraries use Twitter and social media, which are significantly similar and different from those of archives. Finally, I will present some additional research recently conducted about Twitter to later compare these with my own findings concerning archives. I draw not only from the archival literature, but also from libraries, technical research literature, and more popular sources, including blogs.

In recent years, discussions about user engagement and the role of archives on the social Internet have emerged throughout the archival literature. Some of these studies examined the integration of social tools into a next-generation finding aid[1] and the process of building meaningful digital archival collections,[2] while other articles discussed why and how archival institutions should engage in outreach activities, online or off.[3] One leading voice in this area, Kate Theimer, is the author of two books about archives and Web 2.0 technologies. An entire chapter in *Web 2.0 Tools and Strategies for Archives and Local History Collections* introduced Twitter and microblogging to an archival audience. In addition to the

general introduction to the service and basic instruction in its use, Theimer provided multiple, specific examples of archives that use Twitter, even including screenshots of institutional account pages as they appear online.[4]

Archivists using Twitter, such as Lauren Ostveen at the Nova Scotia Provincial Archives in Canada, noted that it is "an easy way for them [users] to access our province's history, and they like the engagement that we provide them."[5] This type of interaction with users is one of Twitter's greatest potential benefits; it allows archivists and users to connect directly, opening up a new avenue for user engagement and access. Theimer's *A Different Kind of Web: New Connections between Archives and Users* presented a series of additional case studies, detailing institutional projects to adopt and use Web 2.0 technologies. She refrained from straying into the realm of the technological determinist, cautioning that the level of "meaningful engagement" gained from social media tools is unproven but emphasizing the potential for outreach and marketing activities afforded by these services.[6]

While case studies provide an important perspective into the organizations using social media in new ways, little research to date has undertaken a systematic examination of the activity of a range of institutions on Twitter, a service that first rose to prominence in 2007.[7] Adam Crymble analyzed the use of both Twitter and Facebook by the archival community. He examined professional archivists as well as archival organizations, the focal groups of his study. Crymble collected information from 104 organizations on Facebook, 64 organizations on Twitter, and 27 practicing archivists on Twitter.[8] The study found that more than half of the archives abandoned their Facebook pages and that active Facebook pages were updated infrequently compared with Twitter accounts of the same organizations. Responding to Crymble's call for additional research in this area, my current study focuses on a smaller subset of archival institutions on Twitter and looks to archival access as a lens through which to study social media activity.

Similar to archives' shift to focus more on users, the library literature displays a trend toward increased online engagement. In 2006, Chowdhury et al. envisioned a library that mobilized digital content in community-based, interactive ways.[9] Reimagining Ranganathan's Five Laws of Library Science, the authors proposed their Library 2.0 principles, beginning with the notion that "Community knowledge is for use."[10] Building on these ideas, a comprehensive theory of digital libraries emerges in which local institutions foster community knowledge while exploiting the affordances of the global network to connect internationally. Lankes et al. drew upon conversation theory to advocate for library involvement in the emergent global network, asserting that "if libraries are in the knowledge business, they are in the conversation business."[11] Although this piece is about libraries, it could just as easily focus on archives in

its questions about and recommendations for community engagement around digital resources. The authors envisioned library systems as part of, not separate from, globally networked systems. Warwick et al. similarly pointed to the proliferation of digital environments as an opportunity for libraries. Concluding that users still need information professionals in both online and offline contexts to help navigate information resources, the authors implicitly looked back to users for guidance on what resources are most important and how best to facilitate access.[12] Community input can increase access because if the users have a say in what is available digitally, they are more likely to use and support these resources.[13]

Other libraries and cultural heritage institutions have looked at a range of Web 2.0 tools and communities to engage with users and strengthen their collections. One of the most successful of these projects is the Library of Congress's Flickr Project. During this project, the library placed historic images on the popular photo-sharing site and solicited user-generated tags. Ultimately, the project has proven a success, with the library declaring that "the benefits appear to far outweigh the costs and risks."[14]

Findings from the Online Computer Library Center (OCLC) support this perspective and assert that vandalism is rare on cultural heritage sites.[15] On Twitter, some followers of archival institutions (indeed, of all accounts on the site) are spam bots, dummy accounts, or people for whom the Internet presents an opportunity to disregard social norms that exist offline. However, to limit access to archival photographs and prevent motivated users from adding helpful metadata would be too reactionary. Successful archival engagement online requires interested users, but also archivists who help set standards and demonstrate how to use new tools and services to improve user experiences. A follow-up OCLC research survey of managers of cultural heritage institutional websites found that 61% of respondents reported no instances of users attempting to add inappropriate content to cultural heritage sites.[16] These preliminary results and limited examples demonstrating widespread misuse of user-generated content systems in archives indicate that archival institutions can feel confident interacting with users in digital environments and soliciting user-generated content and feedback in digital projects.

The archival and library communities have been calling for increased online engagement, experimenting with new ways to connect with users, and using services such as Twitter. Meanwhile, the characteristics of these networks are being investigated by social computing researchers, and the business literature has revealed some insights on the user community. Anne Adams and colleagues examined the potential for social empowerment through the use of new technologies. Focusing on systems designed *for* libraries rather than those used *by* libraries, Adams et al.'s qualitative study revealed that reception was

most positive when the user community was involved in the entire development process.[17]

   The business literature has pointed to Twitter as a cornerstone online community for companies seeking to develop a social media strategy.[18] Sean Silverthorne explained that businesses can create a positive presence in social media communities by "solving social failures in the offline world."[19] Archival institutions can learn from this advice as well, thinking about the gains in remote access and promotion within reach on services like Twitter but harder to accomplish offline. Jansen et al. described Twitter as an excellent community to examine word-of-mouth communication. Although focused on business, this article pointed out some of the challenges archival institutions may face on Twitter. Using word of mouth as a method to increase awareness and spread information is hard to quantify, but the authors framed the benefit of examining what customers (think "users") are saying about a particular brand (think "archives").[20] If archival institutions on Twitter can understand what people are saying about them and issues relating to them, they can better respond to user feedback. Furthermore, institutions can use Twitter to interact directly with users, both helping individuals who contact the archives and demonstrating through a public feed that the institution knows how to engage meaningfully in digital environments.

   Bongwan Suh and others completed a large-scale analysis of Twitter, specifically looking for patterns around the "retweet" functionality in the service. Using a dataset composed of 74 million tweets, the authors found that the presence of URLs and hashtags[21] positively correlated with retweetability. Additionally, they found that the number of past tweets did not correlate with retweets, but the number of followers and followees did have an effect.[22] This suggests that Twitter users may want to focus on writing high-quality tweets to build networks and encourage additional retweets. Although the authors did not clearly define what constitutes a quality tweet, this quantitative finding speaks to the observation of Lauren Ostveen,[23] who noted that she uses retweets to promote similar accounts and build connections between users of these accounts.

   Additional studies pointing to other dimensions of Twitter contain relevant findings for archival institutions considering using the service. Honey and Herring's random sample of public Twitter posts over the course of one day found that 31% of tweets that addressed a user with the "@" symbol received a reply.[24] However, they pointed to the lack of visibility of users' past tweets as an ongoing barrier to long-term collaboration or ongoing conversation. Codgill et al. analyzed digital backchannel conversations, a different method of thinking about some types of conversations on Twitter. The term "digital backchannel" refers to comments from online networks that take place outside of formal communication spaces such as lectures or workshops and can facilitate

discussions about events between spatially and temporally dispersed individuals. The authors suggested that digital backchannel conversation can be constructive for certain types of events, where the norms are clear and commentary by attendees in a backchannel on a site like Twitter does not get too personal.[25] In the data gathered for this project, backchannels appeared in some accounts, providing commentary on events that took place at some institutions.

Based upon a high-level understanding of Twitter, different types of communication taking place using the service, and the archival community's efforts to engage with Web 2.0 technologies (specifically Twitter), the following research questions emerged:

1. What types of activities do archival institutions engage in on Twitter?
2. Do these activities align with other archival functions, enriching access and interaction with archival materials?

As social media platforms including Twitter have exploded in popularity, cultural institutions have flocked to these online communities to establish their presence and experiment with new forms of user engagement. What do these new ways of communicating with archives mean? Do they collapse or reinforce power dynamics between user and institution, highlighting major issues in the field?

Methods

Definitions

First, I provide a few brief definitions to ensure consistency of meaning and to introduce the language of Twitter:

- Tweet: A post on Twitter, up to 140 characters in length
- Hashtag: A form of user-generated metadata on Twitter, consisting of a string of characters preceded by the "#" symbol. Users can insert hashtags into tweets.
- Active account: For the purposes of this project, an active account is any account managed by an archival institution that tweets at least once a week.
- Twitter network: All other users interacting with the original Twitter account. This includes followers, accounts being followed, and other users who may see the account referenced in tweets.
- @: The "at" sign is used on Twitter to signify a reference to a specific account. When used in a tweet, placement of "@" before another username creates a link to the account being referenced.

Sampling and Selection Criteria

My goal was to give an overview of archival institutions using the service during the data collection period. Therefore, I selected the institutional Twitter accounts for this study from 3 sources: (1) "Archives on Twitter," a list of more than 300 archival institutions with Twitter accounts compiled by Kate Theimer;[26] (2) a desire for diversity in archival accounts based on geographic location as well as different types of archives, universities, governments, private corporations, and local archives; and (3) my own assessment of the general frequency and perceived quality of the updates (see Table 1 for a complete list of institutions). This process generated 34 accounts to follow (see Appendix 1 for a complete list of the accounts followed for this project).

Table 1. Sampled Institutions by Type and Country

Institution Name	Type of Institution	Country
National Archives of Australia	Federal government	Aust.
Archives of Ontario	Provincial government	Can.
CBC Digital Archives	Institutional/nonprofit	Can.
Nova Scotia Archives	Provincial government	Can.
Vancouver City Archives	City government	Can.
BBC Archive	Institutional/nonprofit	U.K.
Institute of Archaeology, University of Oxford	University SC/A	U.K.
London Metropolitan Archives	City government	U.K.
Archives and Special Collections, University of Strathclyde	University SC/A	U.K.
Tyne and Wear Archives	County government	U.K.
University College London Special Collections	University SC/A	U.K.
National Archives	Federal government	U.K.
Archives of American Art	Institutional/nonprofit	U.S.
U.S. National Archives (NARA)	Federal government	U.S.
Bancroft Special Collections Library, UC–Berkeley	University SC/A	U.S.
George Bush Presidential Library and Museum	Institutional/nonprofit	U.S.
Jimmy Carter Presidential Library	Institutional/nonprofit	U.S.
Coca-Cola Archives	Corporate	U.S.
Georgia College Special Collections	University SC/A	U.S.
George Mason University Special Collections and Archives	University SC/A	U.S.
Internet Archive	Independent institution/nonprofit	U.S.

Institution Name	Type of Institution	Country
Indiana University–Bloomington Archives	University SC/A	U.S.
Jewish Women's Archive	Institutional/nonprofit	U.S.
Library and Archives of the Commonwealth of Virginia	State government	U.S.
Minnesota Historical Society	State government	U.S.
National Security Archive	Independent institution/ nonprofit	U.S.
New York State Archives	State government	U.S.
Oregon State University Archives	University SC/A	U.S.
Portland Archives	City government	U.S.
South Carolina Archives and History Center	State government	U.S.
Special Collections Research Center, Swem Library at the College of William and Mary	University SC/A	U.S.
Teddy Roosevelt Digital Library Initiative	Institutional/nonprofit	U.S.
University of Michigan Computer and Video Game Archive	University SC/A	U.S.
U.S. National Archives (NARA)—secondary account	Federal government	U.S.

In addition to the institutional network of accounts that are the focus of this study, a number of individuals and professional associations related to archives maintain active Twitter presences. Crymble[27] included practicing archivists in his sample, and professional associations including the Society of American Archivists also have accounts. These types of accounts contribute to a larger ecosystem of archives-related activity on Twitter but were out of scope for the present study.

I considered a number of factors when selecting accounts. Although language barriers prevented including tweets in languages other than English, I did include accounts from countries outside the United States (see Figure 1 for the distribution of countries in the sample). Before data collection began, I screened each account to determine that it was active so it would yield adequate results. Despite this vetting, 3 accounts tweeted at a rate of less than once per week, posting fewer than 5 updates during the time frame of data collection. The low rate of updates for these few accounts did not negatively impact the overall quality of the dataset. The 1,880 tweets collected during the month-long period represent a small but usable sample of the activities of archival institutions on Twitter. The number of followers of each account was not gathered along with other data, as this number varied during the period of data collection and was outside of the scope of analysis.

I selected October 2011 for this study because October is Archives Month.[28] In addition to this campaign led by the Society of American Archivists, active archivists using Twitter declared October 6 a "Day of Digital Archives," encouraging the use of the hashtag #digitalarchivesday in the archival community on Twitter.[29] These two events, one spanning the entire month and one focused on a single day, provided an opportunity to examine the extent to which different institutions utilize or do not acknowledge these types of campaigns, missing an opportunity to engage with a larger community of interested users all searching for updates using a single hashtag. During the month of October, the project followed the Twitter accounts of 34 archival institutions.

Collecting data from Twitter for offline analysis is a challenge I confronted in the early stages of this project. No suitable off-the-shelf program offers the functionality afforded through creative use of Excel. Software applications such as The Archivist and TwapperKeeper[30] do not allow users to track and save tweets from specific accounts, instead providing access to the results of a Twitter search. While the Library of Congress made a much-publicized announcement in April 2010 that it would be working with Twitter to provide access to older tweets, building a platform to provide this access while continuing to deal with an ever-growing number of updates per day has proven harder than initially expected.[31] Until the library's platform is operational, users seeking to gather and analyze tweets from specific accounts will continue to use "hacks" to construct usable datasets for small-to-medium-scale analysis of Twitter accounts.

I selected a data collection method that involved using constructed URL queries to pull tweets into Excel using the Web Data Connections functionality. This allowed me to capture information from selected accounts. By directing Excel to display an RSS feed, with tweet contents, links, unique URLs, and timestamps, much of this collection was automated. (See Appendix 2 for a more technical discussion of the data collection challenges of this project.)

Analysis

I used both quantitative and qualitative methods to analyze the 1,880 tweets gathered from the sample institutions during the target month. The dataset was initially analyzed and coded according to a number of structural criteria, objective traits that could be identified in each update. "Structural criteria" refers to functionalities that are part of the Twitter system, such as retweets, hashtags, and uses of "@" to reference other users in an update. I generated descriptive statistics to provide an initial window into the dataset and to determine overall patterns of behavior at the sample institutions. Returning to the data, I conducted content analysis on each tweet, reading the update and placing it in one of 6 categories (a detailed description follows).
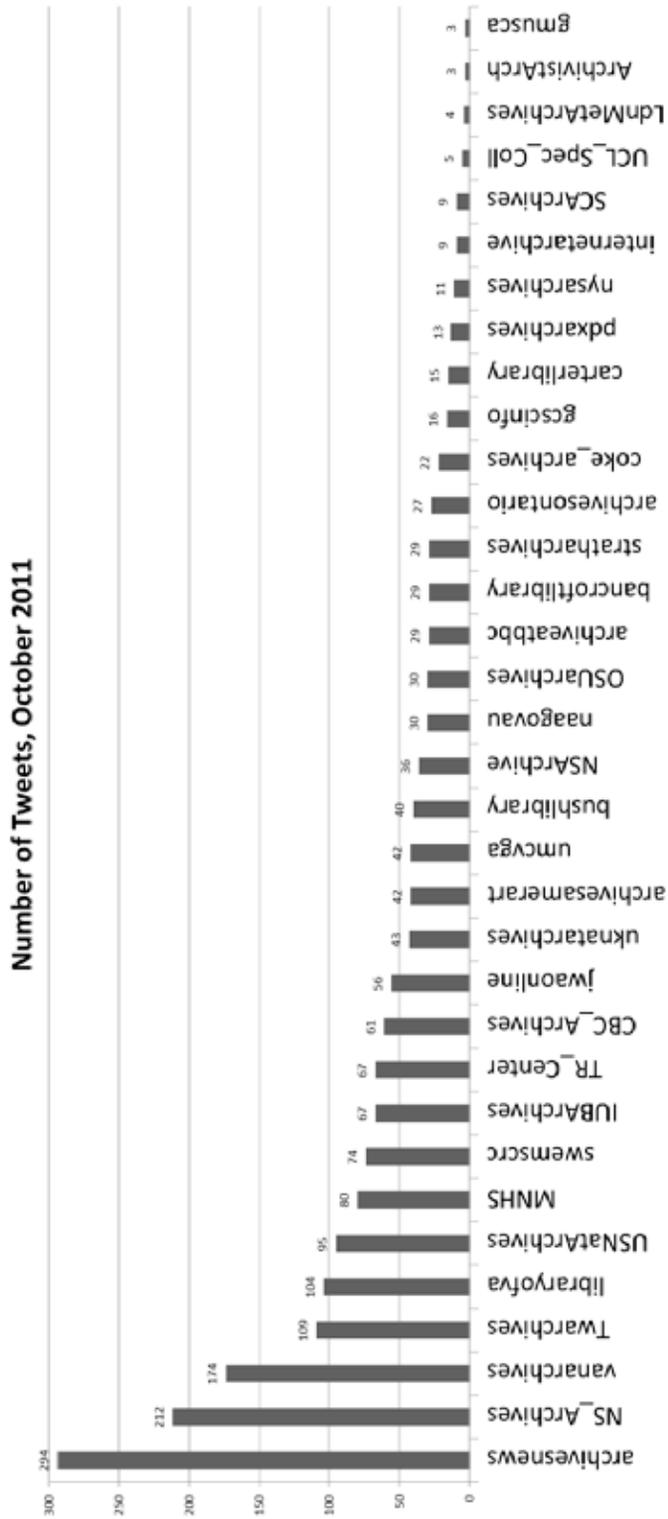
Increasing Access in 140 Characters or Less:
Or, What Are Archival Institutions Doing on Twitter?

543

Number of Tweets, October 2011

Account	Value
archivesnews	294
NS_Archives	212
vanarchives	174
Tvarchives	109
libraryofva	104
USNatArchives	95
MNHS	80
swemscrc	74
IUBArchives	67
TR_Center	67
CBC_Archives	61
jwaonline	56
uknatarchives	43
archivesamerart	42
umcvga	42
bushlibrary	40
NSArchive	36
anngovan	30
OSUarchives	30
archiveatbbc	29
bancroftlibrary	29
stratharchives	29
archivesontario	27
coke_archives	22
gcscinfo	16
carterlibrary	15
pdxarchives	13
nysarchives	11
internetarchive	9
SCarchives	9
UCL_Spec_Coll	5
LdnMetArchives	4
ArchivistArch	3
gmusca	3

FIGURE 1. The number of updates per account went from 294 to 3.

Findings

This dataset represents a small slice of the archival community's activity online, but even a dataset of this size demonstrates the diversity of approaches archival institutions take on Twitter. Some accounts attempt to replicate the formality of the parent institution, primarily tweeting links to content relevant to their collections and refraining from engaging with other Twitter users. Others engage far more informally with the Twitter community, having conversations with users consisting of a few updates in a row about a particular topic or issue. A third main approach, which I did not expect at the beginning of the project, is the amount of event promotion archives do on Twitter. Most accounts engaged in each of these 3 broad categories of activity during the course of the month.

The 34 accounts generated a total of 1,880 tweets during October 2011, representing an overall average of 55.3 updates per account. However, this does not begin to describe the variation represented within this dataset. The median number of updates in the dataset is 33, which more closely represents the typical number of updates for an account. Figure 1 shows the number of updates for each account.

Table 2 provides a summary of the structural categories of the dataset. Retweets (updates containing the letters "RT" followed by content originally posted by a different user) comprised 20.11% of all updates. Other Twitter users were mentioned using the "@" symbol in 42.02% of updates. Hashtags, keyword markers used on Twitter, were included in updates 39.57% of the time. More than two-thirds (68.67%) of tweets in the dataset contained at least one link, usually shortened to conserve space within the 140 character limit for updates on Twitter. Each of these categories is nonexclusive, meaning that a single tweet could contain all four traits. These findings are encouraging, echoing some of the analysis completed by Suh et al. In that article, the authors suggested composing high-quality tweets and retweeting relevant content to build a strong Twitter network and increase the chances that tweets will be retweeted in turn.[32] The results in this dataset indicate that the institutions in the sample are engaging meaningfully on Twitter and using the service's features to share/retweet content and communicate with other users on the site.

Table 2. Structural Categories (*n* = 1,880)

Category	Number of Updates	Percentage of Total Dataset
Retweets (RTs)	378	20.11%
Mentions (@)	790	42.02%
Hashtags (#)	744	39.57%
Links	1,291	68.67%

Increasing Access in 140 Characters or Less:
Or, What Are Archival Institutions Doing on Twitter?

545

In addition to the structural categories, each update was coded into 1 of 6 categories through content analysis: Administrative Updates (i.e. information about hours), Links to Institutional Site Content, Link Sharing from Other Sites, Interacting with Twitter Users, Event Promotion, and alternative Social Media-focused Tweets (i.e., links to an institutional account on YouTube or Flickr). These were exclusive categories created to identify the types of activity each sample institution undertakes on Twitter. Table 3 summarizes these categories. The top two categories were "Link Sharing from Other Sites" and "Event Promotion," together representing more than half of all updates. These results suggest that archival institutions are engaging in a range of activities on Twitter, not simply broadcasting their content without additional interaction.

Table 3. Content-based Categories (*n* = 1,880)

Category	Number of Updates	Percentage of Total Dataset
Administrative Updates	70	3.72%
Links to Institutional Site Content	396	21.06%
Link Sharing from Other Sites	543	28.88%
Interacting with Twitter Users	275	14.64%
Event Promotion	518	27.55%
Social Media-focused Tweets	78	4.15%
Total	**1,880**	**100.00%**

The method employed, content analysis and coding, is inherently subjective. In some cases, updates could have fallen into more than one category. For example, some tweets mentioned another user but also included a link to other site content. The aim of this round of analysis was to identify the primary activity embodied in a given tweet. These categories represent the behavior of the sample archival institutions on Twitter.

Highlights from the Dataset: Archival Stories in 140 Characters or Less

In addition to the summary measures of the dataset, a number of compelling stories lie within the individual accounts and specific updates. The following section consists of a series of examples meant to illustrate the diversity within this dataset; there are more digital stories in the 1,880 collected tweets than there is room in a single article.

HIGH-VOLUME TWEETERS

First, I examined the feed from the 5 sample accounts that posted updates more than 100 times during the month of study: the National Archives and Records Administration (@archivesnews), the Library and Archives of the Commonwealth of Virginia (@LibraryofVA), the Nova Scotia Archives (@NS_Archives), the Tyne and Wear Archives (@TWArchives), and the Vancouver City Archives (@VanArchives). These accounts represent a range of archival institution included in the sample—the official account of the U.S. National Archives, the Virginia State Library and Archives, the Provincial Archives of Nova Scotia, the archives for the former English county of Tyne and Wear, and the Vancouver City Archives. While these government institutions range widely in size, they share a high rate of posting throughout the study period. While the Vancouver City Archives and the U.S. National Archives filled many updates with links to content both on their sites and from across the Internet, the Archives of Nova Scotia interacted with many Twitter users directly. In fact, 80% of this account's tweets included at least one "@" mention of another Twitter account. The Library of Virginia live-tweeted a lecture on October 18; this event accounted for over half of its updates for the entire month. Finally, the Tyne and Wear Archives was active in a variety of ways, including its use of Twitter to announce additions of digital images to the institution's Flickr account. Each of these high-volume accounts employs a different strategy on Twitter and, as a result, is able to generate vibrant interactions and establish a positive presence in the Twitter user community.

SPECIAL EVENT: DAY OF DIGITAL ARCHIVES

On October 6, 2011, an online awareness campaign called "Day of Digital Archives" took place, generating a flurry of blog posts, Twitter updates, and other content with the goal of "[raising] awareness of digital archives among both users and managers."[33] As a result of the initiative, the hashtag #digitalarchivesday was used more than 800 times on Twitter, and the event was the subject of numerous blog posts by practicing digital archivists. In this project's dataset, #digitalarchivesday was used 21 times, representing just over 1% of all updates for the 34 sample accounts. Only 4 accounts, @bancroftlibrary, @UKNatArchives, @USNatArchives, and @vanarchives, composed updates using the #digitalarchivesday hashtag. As shown in Figure 2, 17 instances of the hashtag appeared in the dataset on October 6, with a few additional uses in the days before and after the event. In the entire sample, October 6 saw 98 updates posted to Twitter from the target accounts. These 17 tweets represent 17.35% of the total updates for the day.
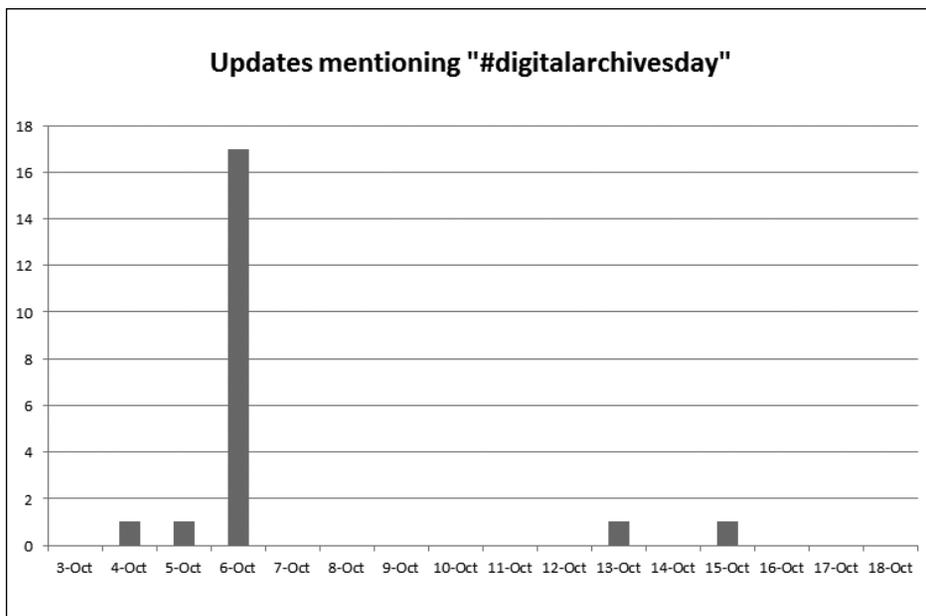
Increasing Access in 140 Characters or Less:
Or, What Are Archival Institutions Doing on Twitter?

547

FIGURE 2. Mentions of #digitalarchivesday in the dataset occurred during the first two weeks of the month.

The Formal Approach: @ArchiveAtBBC

Moving from the community-driven engagement of the #digitalarchives-day hashtag, the @ArchiveAtBBC account is a good example of the more formal approach taken by some institutions in the sample. During data collection, this account tweeted 29 times without mentioning a single other account using Twitter's "@" format. It either linked to its site content or content from other BBC websites almost exclusively. In this situation, given the existing BBC "brand," which far predates Twitter, this approach works. The BBC Archives has a large collection of high-quality digital content; simply broadcasting it attracts a crowd of followers nearly 20,000 strong.[34]

Direct Interaction with Users: @SwemSCRC

The account for the College of William and Mary's Swem Special Collections Research Center, @SwemSCRC, consistently engaged with users across Twitter. In addition to linking to pages highlighting items from its collection, this account retweeted 12 (16.2%) posts and referred to another user with the @ symbol in 56 (75.6%) of its 74 updates in the sample time frame. As an account from a smaller institution with a mission tied to "the teaching and research missions of the College of William and Mary . . . providing services, collections, staff and facilities that enrich and inform the educational experience,"[35] expansion into social

media services like Twitter might not seem like a necessary activity. However, the amount of engagement with other users and promotion of relevant digital materials generates Web traffic and interest in digital materials that are already on the library's website. In addition, the Swem Library uses its account to help orient new users and prepare them for a first visit to the archives. An update from October 4, 2011 reads: "Want to begin your research before coming to our reading room? Check out these video tutorials about finding our material."[36] This update links to a video tutorial created for new users and contributes to an overall effort by this institution to encourage use of its collections and engage in conversations with users online.

Event Promotion: @archivesnews

Twenty-eight accounts in the sample for this project used Twitter to spread the word about lectures and events being held in the host institution and/or at affiliated institutions. One account that typifies this approach is @archivesnews, maintained by the U.S. National Archives and Records Administration (NARA). This account is the second NARA account on Twitter, serving as a complement to the @USNatArchives account and tweeting different types of information. While the @USNatArchives account linked to NARA Web content in 43 (45.3%) of its 95 posts, @archivesnews devoted a similar number (128, or 43.5%) of its activity to event promotion. Most of these events were lectures and exhibits either at the National Archives in Washington, D.C., or at one of NARA's satellite locations across the United States. Although it might seem ineffective to promote events across the country when a majority of the account's followers will not be able to attend any of them, this type of activity demonstrates NARA's commitment both to engaging with users of the United States government's archival materials, but also to social media as an outreach strategy.[37]

Showcasing Twitter Proficiency: @bancroftlibrary

Some accounts in the sample displayed a sophisticated knowledge of Twitter community norms. The University of California, Berkeley's Bancroft Library used the "MT" format in some of its updates (see Figure 3). Rather than a retweet or full repost of another user's update, an MT signifies that the reposted content has been modified, usually to allow for response while preserving the meaning of the original post. On October 20, 2011, @bancroftlibrary posted the following tweet "Nice! MT @californiamag: @bancroftlibrary You may be interested in our story on Goldberg's mysterious Barodik here: http://t.co/ZazC3E1D."[38] The different elements of the tweet showcase the account administrator's understanding of the platform and how to craft a tweet tailored to a perceived audience.

Increasing Access in 140 Characters or Less:
Or, What Are Archival Institutions Doing on Twitter?

549

Initially, the user @californiamag, UC–Berkeley's alumni publication, tweeted a link to a story and a reference to the Bancroft. This mention would be visible to the manager of the @bancroftlibrary account. After checking the link, which was automatically shortened to fit into the 140-character limit for tweets, the account manager saw that the referenced article recounts a user's experience at the Bancroft Library. To complete this interaction, the account manager modified the original update, including the link but possibly removing additional contextual information, added a short note of approval, and rebroadcast the link to @bancroftlibrary's followers. This process of sharing content from closely affiliated accounts deepens the connection between these accounts, sending some of @bancroftlibrary's followers to @californiamag's content. This signals to @bancroftlibrary's followers that this is a high-quality account because its account manager can seek out and repackage information within the system, and it shares interesting and relevant content. While not directly related to the Bancroft Library's collections, this type of activity is one example of a strategy to diversify the types of updates in an archival Twitter account while still remaining relevant and appealing to followers, some of whom may be interested in reading the original article.

Tweeting from a Corporate Archives: @coke_archives

The account from the Coca-Cola Archives was the only corporate archives included in the sample. The @coke_archives account primarily posted links to digital archival content from the Coca-Cola website, but also reached out to users who post about Coke and posed trivia questions to its followers. These types of activities make sense because a company such as Coca-Cola has a broad and

FIGURE 3. This screenshot shows the @bancroftlibrary tweet from October 20, 2011.

coherent marketing strategy, of which digital archival content is but one piece. Coke is a very popular brand internationally, and historic advertising materials appeal to people who grew up drinking Coca-Cola products. On October 28, the account linked to a virtual exhibit on the corporate website, challenging users: "Can you find the 1922 Coke Polar Bear Ad in the Virtual Museum? Go! . . . http:// fb.me/RpB51U3n."[39] The Coca-Cola Archives works to harness the power of the company's brand to share archival images on Twitter. This approach is appropriate for a corporate archives because the mission of this type of organization is to leverage archival assets to reinforce and enhance the company's image.

THE TARGETED APPROACH: @IUBArchives

The Indiana University–Bloomington Archives took an approach slightly different from other institutions on Twitter by reaching out to the IU community and offering services. On October 12, it tweeted "#IU Student groups: Want to clean out your file cabinets? We—and the SAA student chapter—want to help! http://t.co/rtBdenas."[40] This update contained the hashtag #IU, which was likely to draw some members of the university community who do not follow the @ IUBArchives account. Additionally, the link in the tweet explained that the university's Student Society of American Archivists (SAA) Chapter was beginning a project to gather student group materials for the IU Archives. Use of Twitter in this way hopefully stimulated a positive response, generating awareness of the project and resulting in some donations to the archives.

Discussion

The 1,880 tweets collected, analyzed, and presented in this paper represent only a small slice of the activities of archival institutions on social media, but they provide a window into the myriad approaches these institutions have taken when using social media to broadcast content and interact with users. All accounts posted updates a minimum of once a week, indicating that staff members at these institutions do devote some of their time to social media on a regular basis. Additionally, the rich information contained in each individual tweet speaks to the complexity of the interactions taking place between these institutions and their users online.

This dataset is not without its limitations. For me to perform substantive analysis, sample accounts had to tweet in English. This led to a geographic bias, as a majority of sampled institutions are based in the United States, with the remainder from the United Kingdom, Canada, and Australia.

This project presents an overview of Twitter activity by English-speaking archives. Given the sampling method and data collection limitations, the results

Increasing Access in 140 Characters or Less:
Or, What Are Archival Institutions Doing on Twitter?

551

may be less generalizable but still useful to a linguistically diverse audience. In addition, nearly half of the tweets in the dataset came from the 5 most active accounts in my sample, resulting in an overrepresentation of these institutions' activity in the results. However, these high-volume accounts did not correlate with large institutions. Of the 5 most frequent tweeters, 1 (@USNatArchives) is a large national repository, while the others are managed by smaller state, provincial, and local institutions in the United States, Canada, and the United Kingdom. On Twitter, small institutions are not limited in their posting and can have a large digital footprint.

From the more formal approach focusing on broadcasting information about events and digital content to an informal, conversational approach, each account in the sample lies along a continuum. At the more formal end are accounts such as @LdnMetArchives, @ArchiveAtBBC, @nysarchives, and @CarterLibrary; updates from these accounts primarily consisted of announcements and links to institutional site content. Accounts such as @umcvga, @NS_Archives, and @jwaonline engaged in more direct conversations with other Twitter users, sending messages to them and initiating other conversations. Neither end of this continuum represents the "correct" way for an archives to use Twitter. But this indicates that there are different Twitter strategies, and archivists may want to consider which one best fits their institutions. More research in this area might investigate whether usage of Twitter points to broader institutional approaches to social media at archival institutions.

The behavior of the sample institutions during the Day of Digital Archives offered a unique opportunity to observe institutions participating in a community-driven social media event. The lack of widespread use of the #digitalarchivesday hashtag in the dataset speaks to the difficulty of generating momentum and support for a single hashtag and digital initiative. The more technical literature on Twitter explains that hashtags and mentions provide opportunities to increase visibility in the community. During an event, such as the Day of Digital Archives, interested users are likely to perform a simple search for the hashtag #digitalarchivesday and observe and participate in the ongoing conversation. If archival institutions with digital materials did not participate in this event, like most in this sample, then they missed an opportunity to expand their number of followers, introduce somebody to their collections, and share their institutional perspective on the digital archiving process. However, despite the low participation rate, 2 federal archival institution accounts used the hashtag, a somewhat remarkable occurrence for a grassroots, word-of-mouth event.

The fact that accounts from 2 large federal institutions participated in an online community initiative underscores one of Twitter's most unique characteristics. The nature of the service itself flattens the distance between users and institutions. To find a specific access policy for the U.K. National Archives, one

used to have to either call the institution or visit in person to obtain this information. Now, just by mentioning the archives in a Twitter update one can learn if a reader's ticket is needed to access a certain set of records, as 2 users did on October 6. In response to a question about census records, the @UKNatArchives account tweeted back "@sebthegooner @poppyh There is free access to census in our research & enquiries room (and you don't need a reader's ticket for this)."[41] The immediacy of this type of interaction represents a change from traditional modes of archival access, but ultimately aligns with an evolving archival embrace of new nonacademic users.[42]

For archivists managing Twitter accounts or others considering engaging in social media, the results of this study suggest that the best advice is to experiment and find what works for a given institution. Given the range of approaches taken by different archives, no consensus exists in the community on what constitutes a "good" archival repository Twitter account. Whether engaging directly with users, linking to Web content, making announcements, or promoting events, one main lesson from this sample of tweets and institutions is that active engagement on Twitter means frequent tweeting. Whatever the approach, updating an account only once or twice a week means that followers will be less likely to see an institution's tweets in their stream and therefore less likely to share, retweet, or click a link and visit the institutional website.

Conclusion

So, what are archival institutions doing on Twitter? Based on the sample presented in this article, they appear to be doing quite a bit. This project began by asking whether archival institutions were increasing access to their collections by participating in the community on Twitter. Rather than "access," "accessibility," as defined in the *Glossary of Archival Terminology* is more appropriate: "The characteristic of being easily reached or used with a minimum of barriers."[43] Archival engagement on Twitter aligns with this characteristic. By acting upon the digital refrain to "go to where the users are," archival institutions remove barriers to potential users who might never encounter their collections if not for social media such as Twitter. For institutions that post infrequently or engage less deeply with users, simply establishing a presence on the site is a good first step, but does not yield deeper interactions with users. More frequent updates and active conversation within the Twitter community are required to increase in-site traffic and user engagement with digital materials.

Through creative use of hashtags, a willingness to communicate with users and retweet relevant posts, and the availability of digital archival materials to share with their followers, archival institutions, as represented by the sample chosen for this study, are increasing access to and awareness of their collections.

Increasing Access in 140 Characters or Less:
Or, What Are Archival Institutions Doing on Twitter?

553

From bloggers who use historic images from the Vancouver Archives' digital collection to followers of the U.S. National Archives who learn about interesting events through their interaction with a NARA account, Twitter is home to a range of constructive activities and a potentially meaningful social network for archival institutions.

In addition to its relevance for archival professionals using social media to connect with users, this study demonstrates the additional insight that can be gained with increased data collection capacity. For this project, I made use of the Twitter API to gather data from my selected accounts, collecting more tweets than would be possible without this method (further discussed in Appendix 2). It is my further hope that this project will lead to more work examining the activities of archival institutions on social media platforms and other online communities. Through a deeper understanding of the ways in which institutions engage with users online, the community can learn together and strive to forge deeper connections on social media.

Appendix 1—List of Twitter Accounts and Parent Institutions

1. BBC Archive (@ArchiveAtBBC)
2. Archives of American Art (@archivesamerart)
3. U.S. National Archives (@archivesnews)
4. Archives of Ontario (@archivesontario)
5. Institute of Archaeology, University of Oxford (@ArchivistArch)
6. Bancroft Special Collections Library, UC–Berkeley (@bancroftlibrary)
7. George Bush Presidential Library and Museum (@bushlibrary)
8. Jimmy Carter Presidential Library (@carterlibrary)
9. CBC Digital Archives (@CBC_Archives)
10. Coca-Cola Archives (@coke_archives)
11. Georgia College Special Collections (@gcscinfo)
12. George Mason University Special Collections and Archives (@gmusca)
13. Internet Archive (@internetarchive)
14. Indiana University–Bloomington Archives (@IUBArchives)
15. Jewish Women's Archive (@jwaonline)
16. London Metropolitan Archives (@LdnMetArchives)
17. Library and Archives of the Commonwealth of Virginia (@LibraryofVA)
18. Minnesota Historical Society (@MNHS)
19. National Archives of Australia (@naagovau)
20. Nova Scotia Archives (@NS_Archives)
21. National Security Archive (@NSArchive)
22. New York State Archives (@nysarchives)
23. Oregon State University Archives (@OSUarchives)
24. Portland Archives (@pdxarchives)
25. South Carolina Archives and History Center (@SCArchives)
26. Archives and Special Collections, University of Strathclyde (@stratharchives)
27. Special Collections Research Center, Swem Library at the College of William and Mary (@swemscrc)
28. Teddy Roosevelt Digital Library Inititative (@TR_Center)
29. Tyne and Wear Archives (@TWArchives)
30. University College London Special Collections (@UCL_Spec_Coll)
31. U.K. National Archives (@uknatarchives)
32. University of Michigan Computer and Video Game Archive (@umcvga)
33. U.S. National Archives (@USNatArchives)
34. Vancouver City Archives (@Vanarchives)

Appendix 2—Note on Data Collection

I leveraged the capabilities of the Twitter API (application programming interface) for this project. Through these features of the system, I captured updates from my sample accounts in real time. This approach, or another using the API, is necessary for the types of analysis presented in the article because the Twitter interface is not well suited for reading older updates from accounts. Data was primarily collected through Real Simple Syndication (RSS) feeds that I embedded in Microsoft Excel. Each account received its own tab to facilitate analysis. In the "Data" tab, I indicated "Web" as the source and was able to paste in a constructed URL to pull data from each Twitter account into the program.

Once the data was in Excel, it still required extensive cleanup prior to analysis. A substantial amount of metadata included in the RSS feed, such as language, location, and account description was unnecessary for my purposes. These columns were deleted and the data were prepared for analysis. A sample expression is: *http://api.twitter.com/1/statuses/user_timeline.rss?screen_name=<ACCOUNT _NAME>*

This solution for data collection was not wholly sufficient. For those accounts that tweeted at the highest rate, the given RSS feed I constructed did not capture all tweets; I believe this was due to the Twitter API and the rate at which the RSS feeds were updated. For these accounts, I returned at the end of the month and reconstructed the missing pieces of the dataset using another now-offline service called Twitter API Explorer (viewable via the Wayback Machine, https://web.archive.org/web/20120224024216/http://twitapi.com/explore/users -show). Using this tool, I was able to construct additional API queries and complete the dataset.

I was able to preserve the integrity of my dataset for this project, but not without significant effort. Moving forward, I anticipate a growing need for Twitter analysis tools. Currently, a specific account's past tweets are very difficult to recover beyond a few months. Furthermore, no software solution exists to gather public Twitter updates from a subset of accounts. As Twitter continues to mature and grow, the conversations and communication taking place on the service will become increasingly relevant for analysis months and years after the fact. Without a comprehensive preservation and access solution for this extremely large dataset, the value of Twitter as a subject for research will be diminished.

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Increasing Access in 140 Characters or Less:
Or, What Are Archival Institutions Doing on Twitter?

557

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