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The Embedded Repository: Introducing an Institutional Repository to a New Audience Via Location-Aware Social Networking

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Abstract

The authors report the outcome of a partnership between a university marketing and communications department and a university library. The research aimed to determine whether providing links to institutional digital repository content on location-based social media is a viable marketing approach. Foursquare tips were added to locations on the Texas A&M University campus with links to repository content. The authors subsequently monitored repository traffic using Google Analytics to determine how many users were being referred by the Foursquare service. Research indicates that users will click through links on Foursquare to visit the institutional repository, and that they will explore further once they are there. This was an initial exploration. More data will be needed to determine precisely the best way to market services through location-based or location-aware services.

Keywords: institutional repositories,social networking, marketing, location-based services

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Introduction

Libraries are no longer the primary or even the preferred place for faculty and students to do research (Schonfeld & Housewright, 2010; De Rosa et al., 2005). In the current media-rich environment, academic libraries must compete for the attention of their once loyal users and find new ways to promote their services. Academic libraries are increasingly using social media such as Facebook and YouTube to share information about services and collections and, perhaps more importantly, to build a sense of community with users of those services and collections. There is growing recognition of the need to establish marketing programs for academic libraries that reach out to users in their own spaces. The challenge is to do so with authenticity.

Given that libraries are no longer the primary and preferred source for scholarly information, there is a need to reach people in their already existing environments and networks. Yet, as Lippincott (2008) reports, though libraries realize their users are using mobile technologies, they have been slow to plan and implement mobile services. At the same time, libraries have been implementing and supporting institutional repositories, hailed as "essential infrastructure" (Lynch, 2003) for the academy. Many have lamented the slow uptake among faculty-contributors (Mark & Shearer, 2006; Salo, 2008; Foster & Gibbons, 2005; Westell, 2006). As noted in The Survey of Institutional Digital Repositories, 2011 Edition, most repository marketing efforts target faculty as potential contributors and do not focus efforts on promoting repository collections to "other scholars and other interested parties worldwide" (Primary Research Group, 2011). Marketing and promotion efforts should focus both on increasing new and returning contributors and also on raising visibility of the service and the university. Social media have the potential to be used to recruit content for and to promote the research contained in digital institutional repositories, introduce a community to repositories, and help strengthen a sense of community.

Literature Review

The authors researched the literature to learn whether other academic institutions had successfully integrated scholarly resources into their institutions' social media strategy and whether social media might be a viable promotion tool for a digital institutional repository. Several publications address the varied goals of institutional repositories and how institutions

measure their success. Success measures for institutional repositories include a count of the number of items present—the more the better (Gibbons, 2004). Westell (2006) proposed a list of indicators of success for repositories that focus more on sustainability of a repository service: "mandate; integration with planning; funding model; relationship with digitisation centres; interoperability; measurement; promotion; and preservation strategy" (p. 213). Tracking item usage or downloads is also important, although doing so presents some challenges (Fuchs, Anderson, Carter, & Helms, 2011). Since libraries traditionally track item usage (circulation), it is important to find parallels (downloads) for locally managed digital resources. Besides determining success of a repository, knowing who the users are can assist libraries in implementing the proper strategies to engage them.

Shreeves and Cragin (2008) include providing open access to an institution's scholarly output, promoting the institution and its researchers, and asserting an institution's stewardship role as goals for repositories. Asunka, Chae, and Natriello (2010) describe how Teachers College of Columbia University built their own digital repository system, which integrated interactive tools such as content tagging to address a perceived lack of interest in traditional repository systems.

How do libraries make their own campus communities aware of the resources available to them in their institutional repositories? Common ways libraries promote their repositories include linking to the college or university website, creating a repository brochure, and issuing press releases about the institutional repository (Primary Research Group, 2011). Mark and Shearer (2006) also mention presentations at departmental meetings and writing articles for campus newspapers or newsletters. These traditional methods of communicating about library resources are being transformed in some cases, as librarians are getting out of their traditional roles and working more closely with users in the users' own environments. This concept of "embeddedness" is gaining popularity as a means to reach out to users. According to Kesselman and Watstein (2009), "with the dramatic increase in electronic resources and technological capabilities, bringing the library and the librarian to the user, wherever they are—office, laboratory, home or even on their mobile device—is at the forefront of what it means to be embedded" (p. 385). For all the technological investments in the more than 2000 digital institutional repositories listed in OpenDOAR, the Directory of Open Access Repositories (University of Nottingham, 2010), there are few mobile interfaces available for them. Ball State's Digital Media Repository is one example of a mobile interface for digital collections in ContentDM (Ball State University, n.d.).

The University of Minho developed a promotional strategy to engage the local community while developing DSpace add-ons to engage in the global repository community. In regards to its promotional plan, they said, "We found that sometimes the best way to reach our target audience is not to aim our discourse directly at them, but instead to flood the surrounding channels that nourish their information needs" (Ferreira, Rodrigues, Baptista, & Saraiva, 2008). Similarly, Gibbons (2004) advocates for viral marketing as a means to promote an institutional repository to potential users.

The JISC-funded PERSoNA (Personal Engagement with Repositories through Social Network Applications) project sought to build "a community of trust around repository use" in order to address the low level of participation in the Leeds Metropolitan University repository. It employed "Web 2.0" technologies or social networking tools such as RSS feeds, commenting, tag clouds, and a Facebook presence toward development of a modular repository infrastructure. Although the social aspects would presumably benefit end users, the project goals were tied to engaging repository contributors (Luker & Sheppard, 2009). Basefsky (2009) rightly states that libraries often define the role of institutional repositories too narrowly, and therefore miss out on opportunities to engage the local community. He reports how DigitalCommons@ILR (Cornell University Industrial and Labor Relations School) is viewed not as an institutional repository, but a "communications vehicle useful to our scholars on numerous levels. . . It is an interdisciplinary research and outreach tool focused on workplace issues" (p. 6).

Roy Tennant (2010) blogged that ". . .if we had geographic coordinate data in our systems about the content we hold (and increasingly we do), then a killer app for libraries, museums, and archives would be a 'show me things relating to the area in which I'm standing' application." Guided tours are an obvious use of location-aware mobile services. Smartmuseum software was developed with funding from the European Commission (Smartmuseum, n.d.). It is a recommender system for museum tours. Smartmuseum does not use geolocation, but relies on users to enter the museums they wish to visit. It then suggests collections or objects of interest and tour routes of any length specified by the user. North Carolina State University's WolfWalk delivers a guided campus tour with historical images of the NCSU campus through a location-aware mobile website and via an iPhone application (North Carolina State University, n.d.). PhillyHistory.org also has developed applications for the iPhone, including augmented reality (City of Philadelphia, n.d.).

Social Media at Texas A&M University

Texas A&M University has built numerous programs to maintain a strong sense of community among prospective and current students, parents, alumni, faculty and staff, and the wider community. It is also a leader in social media among universities. With over 270,000 Facebook followers, Texas A&M was the first public university with mobile apps (McDonald, n.d.) and beat Louisiana State University in a race to become the first university to reach 100,000 Facebook fans (Blue Fuego, Inc., n.d.). Continuing to lead academia in social media adoption, Texas A&M launched an official partnership with Foursquare in June 2010. It was the third university behind Harvard and Stanford to enter such an agreement (Texas A&M University, 2010).

Foursquare

Foursquare is one of several location-based social networking services. It launched in March 2009 and, as of July 2011, has about 10,000,000 users (Foursquare, "About," 2011). Users of the service can "check in" at locations (restaurants, retail stores, university buildings) while sharing their location with connections on the service. Users can bookmark locations and comment or leave tips at locations for other users who check in to the same place. "Owners" of locations can also leave their own tips, provide discounts, and otherwise engage their audiences. Foursquare for Universities aims to help higher education institutions connect with students, alumni, visitors, faculty, and staff. As part of this program, users can collect special collegiate badges, including a "bookworm bender" badge for visiting a library after midnight.

The Texas A&M University Foursquare presence grew to 5,000 friends by January 2011 (Texas A&M University, 2010). In an effort to further expand the user base on Foursquare, the University's Marketing and Communication department launched a Social Media Scavenger Hunt in January 2011, with three goals in mind:

1. Promote sponsors of the Foursquare program.
2. Integrate multiple social media platforms while growing Foursquare and Twitter followers.
3. Encourage students to explore the campus of Texas A&M University in new ways (Joly, 2011).

The scavenger hunt culminated in Foursquare Friday, during which students who had earned their collegiate badges were awarded prizes. Facebook and Twitter were the primary promotion tools,

providing clues to the check-in spots where students would have to show they had checked in and provide a valid student ID (Texas A&M University, 2010).

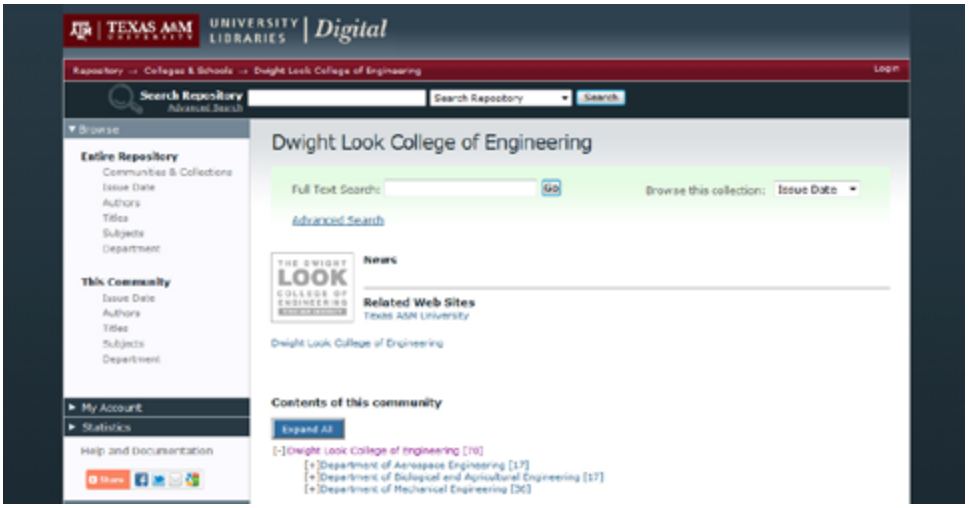
Foursquare and the Texas A&M University Libraries

Marketing and Communications wanted to use the Foursquare service to further their social media strategy, but while their strategy was successfully building community, they were struggling to tie scholarly or academic resources into the Foursquare program. To provide this academic "hook," the Libraries worked with Texas A&M University Marketing and Communications team to promote holdings in the Texas A&M Digital Repository on Foursquare. The Libraries hoped to leverage the popularity of the University's social media to bring more viewers into a resource that is not usually promoted heavily, while providing the Marketing and Communications team with the scholarly focus they sought.

Items in the Texas A&M Digital Repository are organized into collections and communities that roughly follow the organizational structure of the University. For example, the Department of Mechanical Engineering is a sub-community within the broader Dwight Look College of Engineering community. Works by mechanical engineering faculty are arranged into collections within the departmental sub-communities (Figure 1).

For this project, communities, collections, and people in the digital repository were matched to campus academic buildings. These matches were made based on where contributing

Figure 1:Repository Community Structure for the Dwight Look College of Engineering



faculty members' offices, classrooms, and research labs are located or were based on the kind of research or teaching done in a particular building. For example, the Department of Educational Psychology is located in Harrington Tower, so the repository's Educational Psychology collection was matched to that building. The Libraries wrote descriptions of each collection and provided these, with corresponding repository URLs, to University Marketing and Communications. The Marketing group then added tips to check-in locations in Foursquare for each building with identified repository content of potential interest. This work was done during the first week of March 2011. Example tips are shown in Figures 2 and 3.

Figure 2: Foursquare Tip for the Harrington Tower

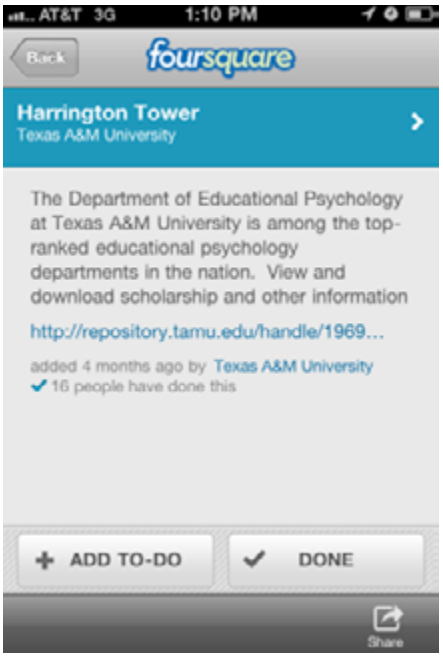
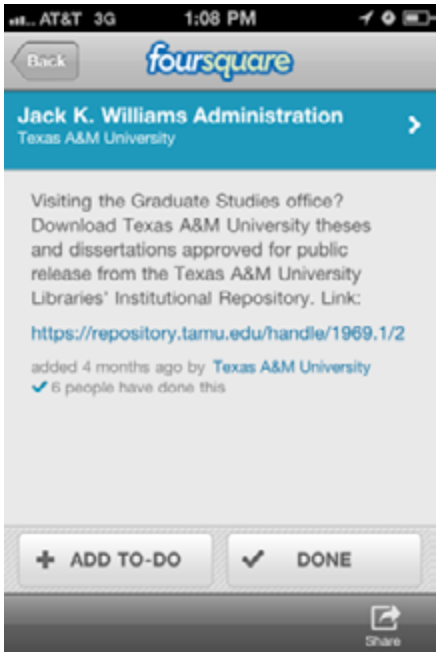


Figure 3: Foursquare Tip for the Jack K. Williams Administration Building



The libraries provided 13 of the total 38 tips associated with Texas A&M University's Foursquare account, and those 13 tips directed users to repository collections. The tips were not promoted via any means other than the Foursquare service itself. Over the following weeks, the repository manager studied repository traffic sources using Google Analytics to determine the impact of the Foursquare tips on repository usage. To avoid inflating the number of Foursquare check-ins, the authors refrained from checking in at any campus locations with repository-related tips and did not discuss the project with colleagues in the libraries or in Marketing and Communication.

Findings

The Texas A&M Digital Repository uses Google Analytics to track repository usage. Not surprisingly, the majority of traffic originates from search engines such as Google, Scirus, and Yahoo. Table 1 is a comparison of traffic sources to the repository in March 2010 and March 2011. Over the course of one year, traffic from search engines decreased 3.87%, and increased from referring sites 3.46%. Overall, traffic did not change significantly.

Table 1: Repository Traffic Sources

	March 2010	March 2011
Overall Visits	16,899	16,872
Search Engines	64.81%	60.94%
Referring Sites	18.91%	22.37%
Direct Traffic	16.16%	16.68%
Other	0.11%	---

In March 2011, when repository tips were added to Foursquare check-in locations, foursquare.com was the 27th most frequent traffic source for the Texas A&M Digital Repository and 20th among referring sites. The total number of visitors to the repository from the Foursquare site in March 2011 was only 31 (Table 2), but there were striking differences in how those visitors interacted with repository content. They tended to stay longer on the site (Figure 4), and visit more repository pages than visitors from other venues (Figure 5). In fact, although foursquare.com accounted for only 31 visits, it ranked 12th in pages per visit among all referring sites (18.68) and 33rd in time spent on the site per visit (08:14).

Table 2: March 2011 Repository Traffic

	All Visits	All Referring Traffic	Foursquare.com
Visits	16,872	3775	31
New Visits	82.49%	72.58%	9.68%

Figure 4: Average Time Users Spent on Site by Traffic Source, March 2011

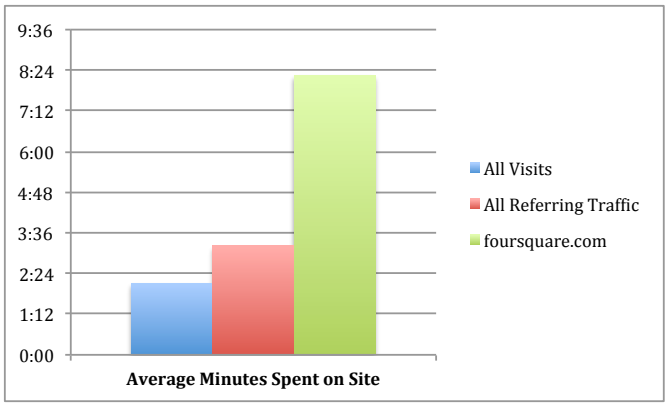
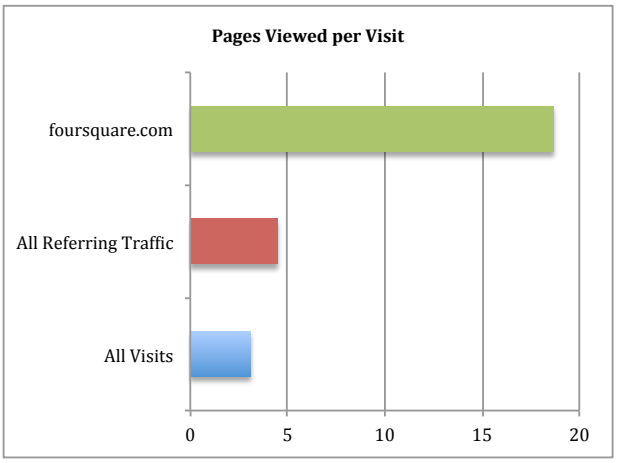


Figure 5: Average Pages Viewed Per Visit, March 2011



Discussion

Overall, the Foursquare traffic was not exceptionally high, but there are differences in traffic patterns. It is not clear whether visitors from the Foursquare site understood what they were viewing, but the usage statistics show they did spend more time exploring the site than typical visitors did. Why are the traffic patterns so different for referrals from Foursquare? One possibility is that it has to do with the age of the referred.

> ". . .[Y]oung people scan online pages very rapidly (boys especially) and click extensively on hyperlinks – rather than reading sequentially. Users make very little use of advanced search facilities, assuming that search engines 'understand' their queries. They tend to move rapidly from page to page, spending little time reading or digesting information and they have difficulty making relevance judgments about the pages they retrieve" (Centre for Information Behaviour and the Evaluation of Research, 2008, p. 14).

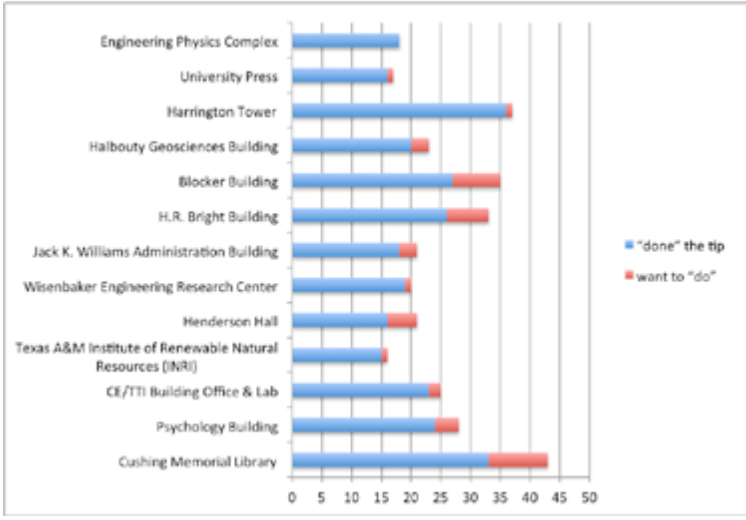
Another possibility is that the Foursquare users are simply more engaged in the University and more interested in exploring the resources it offers. The results suggest that users of the Foursquare service will look at the tips and click on links provided, suggesting that this is one way to integrate institutional repository collections into existing location-based social networking services. This also points to the potential for repository managers and libraries to be usefully embedded in this type of service. This admittedly small study may also serve as a model for libraries to interact more closely with university marketing and public relations departments. Texas A&M Marketing and Communications already has an established and engaged audience through social media, so, in partnering with them, the Libraries was able to take advantage of an already-engaged audience, rather than attempting to build one from scratch.

This points to a potential for synergy, in which the goals of the University and the Libraries intersect. The goals for institutional repositories (open access and promoting the institution, its faculty, and their research output) and the goals for universities engaging in social media (community building, community engagement, promoting the institution) are similar, and each department can benefit from the partnership. Central marketing departments are already communicating with individuals who are part of the library audience, so it only makes sense to use already existing tools to the Libraries' advantage.

This case study reports the referrals to the Texas A&M Digital Repository from the Foursquare service, and how the traffic from Foursquare differs from referrals from other sites. A limitation of this study is that it does not address why

Foursquare users followed the tips and visited the Digital Repository. The Foursquare service allows a user to indicate they have "done" a tip, or that they "want to do" a tip associated with a check-in location. The authors found that more users reported they had done Digital Repository tips than had actually visited the repository (Figure 6). When Foursquare users chose to share the information publicly, other users would see that they had done a particular tip associated with a location, so self-representation was a potential factor in the difference between the number of users who said they had done a tip and the number of actual visits. Lindqvist, Cranshaw, Wiese, Hong, & Zimmerman (2011) found that Foursquare users elected to check in at certain locations and not others because of what that information might convey about them (p. 2413). It is possible that users of the Foursquare service simply visited the repository later, but a definitive answer would necessitate follow-up with the users who said they did the tips.

Figure 6: Foursquare Users Who Signaled Interest in Repository Tips as of July 2011



Conclusions and Future Research

This exercise generated only a small amount of traffic to the Digital Repository, but the time and effort involved on the parts of University Marketing and Communications and the University Libraries was also minimal. It demonstrated that the Texas A&M community is engaged in location-based social media and is interested

in academic as well as social uses for Foursquare. Integrating the Texas A&M Digital Repository into the University's Foursquare presence provides a way for the Libraries to highlight unique local digital collections and promote the work of faculty to campus visitors and campus dwellers alike. The partnership with Marketing and Communications can enable the Libraries to promote collections and services no matter where a student or faculty member is on campus and mitigates the need to rely on use of a library resource or a visit to a library building to do it.

There is potential for libraries to use social media to promote other services and content as well. Libraries with subject librarians could easily create Foursquare tips pointing to subject guides from subject-specific buildings on university campuses, link to appropriate databases, and much more. The social media environment allows for a new level of embedded library services.

The challenge is ensuring that users are not turned off by the communication. Marketing in general has become more difficult with the advent of the internet, in that consumers have realized they have some control over the messages they see and therefore desire more control over the conversations in which they engage. Media messages are no longer simply a one-way, top-down proposition. As Dave Evans (2008) notes, "interruptions do not result in a sustainable conversation. In their purest form, all conversations are participative and engaged in by choice" (p. 7). In other words, organizations must talk to their audience in an authentic way, treating them more like human beings and less like faceless consumers.

Location-based social media allow for a very simple way to engage users in a specific context, providing them links to information they will likely find interesting based on activities in which they are already engaged. They also allow libraries to save time and money, with the added benefit of an existing infrastructure the audience is already using.

Diane McDonald, Director of Social Media, stated, "The Scavenger Hunt was unequivocal proof that social media and education can roll together and result in strong business growth" (Texas A&M University, 2011). Texas A&M saw success with the scavenger hunt, expanding their social media presence by ten percent on Twitter, and increasing the number of Foursquare followers to 14,622

as of August 1, 2011 (Foursquare, Texas A&M University, 2011). In the process, the Libraries leveraged the social media to introduce the repository service to a new potential audience. The University Libraries will continue to work with the University to update the tips more frequently, add tips to more locations, and continue to market the digital repository through existing university channels while looking for new ways to engage with its community.

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