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Published in:
VALA2014 Proceedings

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Recommended citation(APA):

Abbott, W., Donaghey, J., Hare, J., & Hopkins, P. J. (2014). The perfect storm: The convergence of social, mobile and photo technologies in libraries. In *VALA2014 Proceedings* VALA - Libraries, Technology and the Future Inc. <https://www.vala.org.au/vala-2014-proceedings/713-vala2014-session-7-abbott>

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The perfect storm: The convergence of social, mobile and photo technologies in libraries

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Abstract:

The intersection of mobile and photographic technologies with social networks has produced platforms such as Instagram. The way libraries are using these platforms has not been investigated in depth. This research aims to discover trends in the use of Instagram by libraries, reporting on selected libraries' experiences and intentions behind capturing and sharing images on Instagram. Recommendations will be made on how librarians can transform relationships and engagement with their communities through mobile photo sharing, taking advantage of 'the perfect storm' of technological convergence.

Introduction

Photo sharing is not new. Since the introduction of handheld cameras and modern film processing techniques, taking and sharing photos has become ubiquitous. In 1948, the launch of Polaroid photography was a game changer, enabling pictures to be taken and shared within minutes. Digital photography has been even more transformative, making photos “more public and transitory, less private and durable, more effective as objects of communication than of memory” (Van House 2011, p. 133). Digital photo sharing has shifted from curating collections of images to sharing photos immediately and frequently with a community of users.

New trends are emerging due to the popularity of photo sharing practices. For example, “citizen-reporting”, in which images or footage taken on personal devices are commonly used in news reports. Celebrities and politicians have become embroiled in scandals, exposed through photo sharing networks. New words are evolving in the vernacular to describe photo sharing fads (for example, the “selfie”). This instantaneous sharing of photos from a mobile personal device has created the ‘perfect storm’ of technological convergence.

The intersection of smart phones and social networking sites has taken photography to a new playing field, as demonstrated by the success of Instagram. Purchased by Facebook in April 2012 for one billion dollars, Instagram has 150 million active users (*Instagram today: 150 million people* 2013). Among those 150 million users are politicians such as Barack Obama, celebrities such as Beyonce Knowles and Oprah Winfrey, and major brands like Nike, MTV and Gucci. According to a report from Nitrogram (Instagram analytics service) “all brands are on Instagram (through hashtagged photos) but 30% of top brands aren’t leveraging that presence yet” (Davout 2013, p. 6). The same can be said for libraries – customers are sharing images of a library on Instagram whether the library has a profile or not.

This paper will explore the early forays of libraries into Instagram. It presents the results of a research project analysing library Instagram profiles to demonstrate how mobile photo sharing is being used as a communication tool and to build relationships with users. The aims of the research were:

1. To discover trends in the use of Instagram, through a content analysis of a selection of Australian and international library Instagram profiles.
2. To survey and analyse selected libraries’ experience in their use of Instagram and photo sharing.
3. To explore the intention behind capturing and sharing images on Instagram through a direct dialogue with the individuals responsible for library Instagram profiles.

Literature Review

Social photo sharing apps like Instagram – whether used for personal or professional means – are yet to receive much attention in the academic literature. Thus, this review will explore the literature on photo sharing, contextualising contemporary photo sharing not as a revolution but as a culmination of existing photographic, mobile and social developments: the perfect storm.

Photo sharing in the pre-digital era was characterised by what Chalfen (2008) calls 'Kodak Culture'. This describes photography of traditional subjects such as special events and holidays, which were typically only shared after the event and only with the people in the photos or others known to the photographer.

After the mass-commercialisation of photography in the 1950s, the next major shift in the culture of photo sharing was the arrival of digital photography (Murray 2008). The decreasing cost of digital photography technology led to the first camera phone in 2000. Van House (2009) and Van House et al. (2005) suggest that the ubiquity of camera phones is changing what we consider photo-worthy and has seen a rise in the use of digital photography as a form of self-expression. As Van House (2011) comments "ready access to network technologies such as laptops and smart phones and ubiquitous wifi means that images may be viewed, uploaded, emailed, posted online and so forth immediately after making" (p. 128).

Kindberg et al. (2005) have defined broad practices of camera phone use which "suggest that camera phones enable new forms of interaction, and are not simply extensions of already existing devices such as mobile phones or digital cameras" (p. 7). This marks the changing behaviour of camera phone usage as pivotal to contemporary mobile photo sharing.

Just as researchers found photo sharing behaviour was changing around the use of camera phones, a number of authors have noted a shift taking place through the use of social media such as Flickr, launched in 2004. Most significantly, by sharing photos beyond one's immediate social and family group, Flickr signals a move away from the 'Kodak Culture' as defined by Chalfen (Miller & Edwards 2007; Murray 2008; Palmer 2010; Van House 2009).

Libraries' use of Flickr is one of the few aspects of photo sharing that has been addressed in the information management literature ('Ten best practices for Flickr & libraries' 2007; Coalwell 2006; Forsyth 2010; Fredrick 2008; Kalfatovic et al. 2008; King & Brown 2009; Stephens 2006; Strong & Dunnington 2009). Most articles do not move beyond making recommendations for use, such as sharing promotional material and marketing events at the library. Of interest is the assertion made by Stephens (2006) that:

Flickr makes the library human. The power of images is strong. Combining images, some Web 2.0 slickness, and the ingenuity of librarians, it is easy to put a human face on the library's online presence. Combine Flickr with your library's blog and engage your users in conversations that use words and images.

This humanising of the library is echoed in Phillip's (2011) article about the use of Facebook by academic libraries: "...if Facebook can help cultivate a brand that expands beyond books, students may discover that the library is more relevant and approachable than they previously perceived, and a valuable part of their personal networks" (p. 512). While Facebook is not solely a photo sharing service, its relevance to this discussion is as a social media tool that is used for marketing libraries, sometimes in a visual way.

While academic literature is yet to address Instagram, the popular press has actively discussed its strengths and weaknesses. Discussion has largely focussed on the

way Instagram has provided a platform for everyone to share their photography skills. Where opinion differs is whether this is viewed positively or negatively: some commentators see this as a “democratisation” of photography that empowers amateurs (‘The Instagram effect’ 2012; Ingram 2012; Rubel ; Taylor 2012), while others see a stream of low-quality, self-serving images (Bevan 2012; Greenfield 2012; Grolleman n.d.). However, Instagram’s legacy can already be seen in the number of other photo sharing platforms that have introduced the use of Instagram-style filters to their services (Facebook, Twitter and Flickr to name a few): “A photo service or app that doesn’t have filters will seem like popular companies without Twitter or Facebook links on their homepages; something will be missing” (Taylor 2012, para. 7).

A few library blogs have looked at the *how* libraries can use Instagram, such as promoting events, sharing pictures of staff and highlighting the collection (angiemsolis 2012; Kroski 2012; Tairi 2013).

Research methods

To investigate current practice on the use of Instagram by libraries world-wide, the authors gathered primary data through three instruments including two online surveys and an Instagram analytics application, Nitrogram.

Seventy-four libraries internationally were found to be using Instagram. Email contact details for sixty-five of these were identified. A survey covering general use, management and benefits of library Instagram profiles was distributed via email to those libraries. Twenty-nine responses were received representing a 45% response rate. In this first survey, respondents were asked to indicate if they would be willing to participate in a follow up survey. Fifteen libraries agreed.

The follow up survey asked respondents to comment on their intentions in sharing three particular images from their own Instagram profiles. The images selected for comment were chosen from the ten most ‘liked’ images from that library’s Instagram profile. Ten of the fifteen libraries responded. The responses from both surveys were qualitatively analysed for trends and patterns across sectors. The survey instruments are available on request from the authors.

Nitrogram, an Instagram analytics tool, was used to independently gather data on the activity of twenty libraries’ Instagram profiles over two months. The Nitrogram data gathered for each Library’s Instagram profile included the numbers of images shared by the library, and their associated likes, followers, number of comments, hashtags, captions and locations.

To discover the trends and patterns in library use of Instagram the top ten photos for each library (as determined by number of likes) from the Nitrogram data were categorised according to ‘intention’. Previous research by Van House et al. (2004) and Kindberg et al. (2005) categorised images to discover the practices of camera phone users. Van House et al. (2004) defined a social use focusing on self-expression and self-presentation, while Kindberg et al. (2005) included two broad categories: *affective* and *functional*. Van House et al.’s (2004) concept of self-expression and self-presentation and Kindberg et al.’s (2005) functional and affective

categories were adapted and implemented for this research. Full definitions are presented in Table 1.

Table 1: Intention categories

Image Categories	Intention of image and caption
Functional	Aid the accomplishment of a particular task.
Affective	Convey a sentiment or emotion.
Identity	Support the construction of an identity either through self-presentation or self-expression.

The photo, caption and hashtags of each photo were considered in the categorisation. The responses to the follow up survey were also used to validate the categorisation of the intention of an image. To mitigate subjectivity in the categorisation process, the assigned category for each image was agreed on by two authors.

Findings

Demographics

The charts below present a summary of the libraries that completed the survey by region, type of library and numbers of followers.

Figure 1

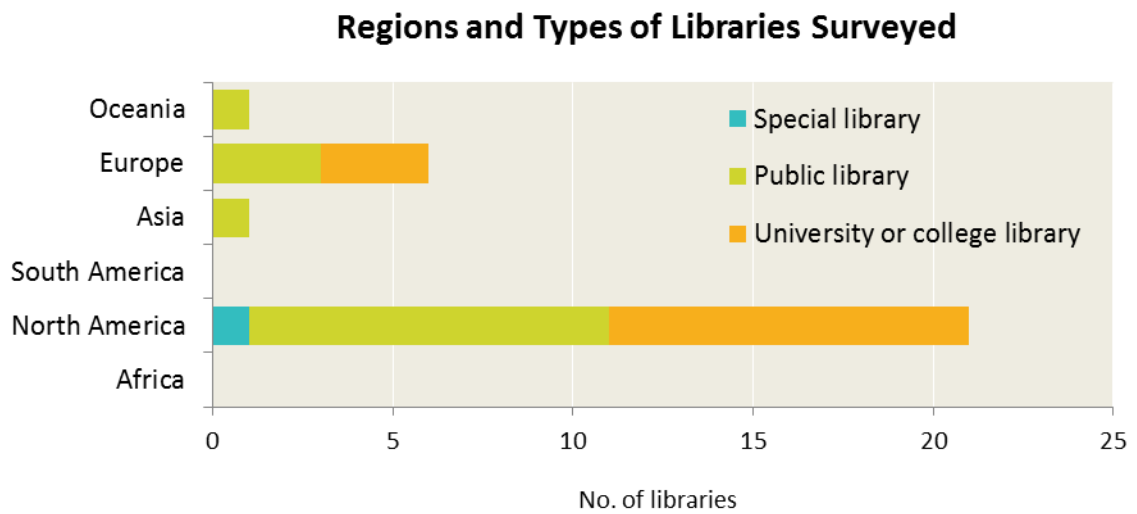
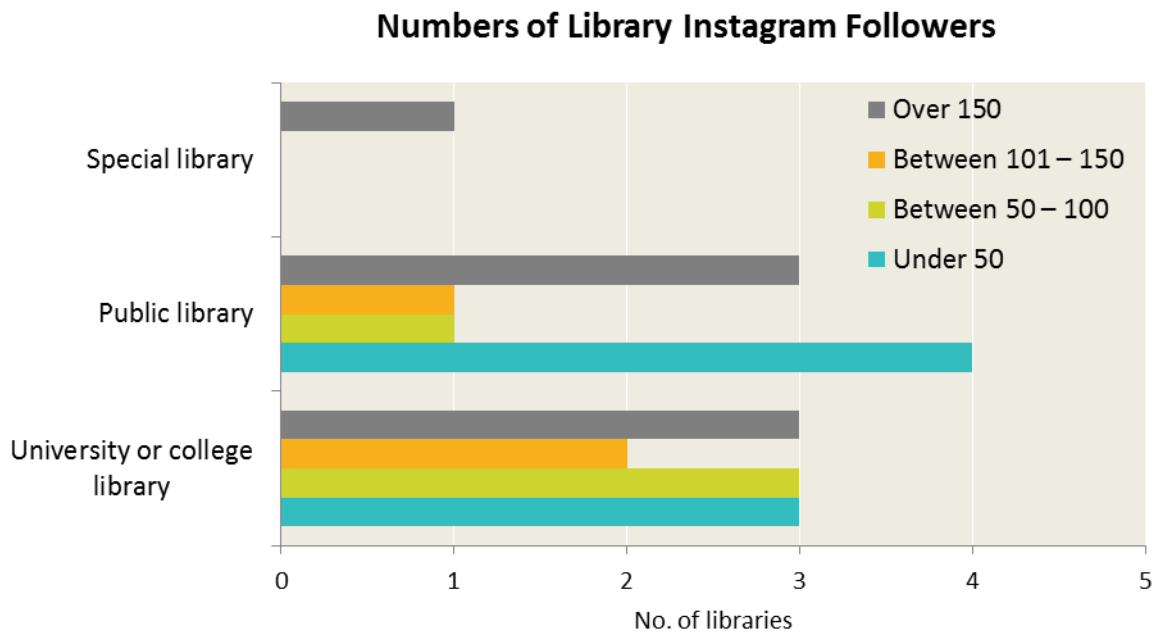


Figure 2

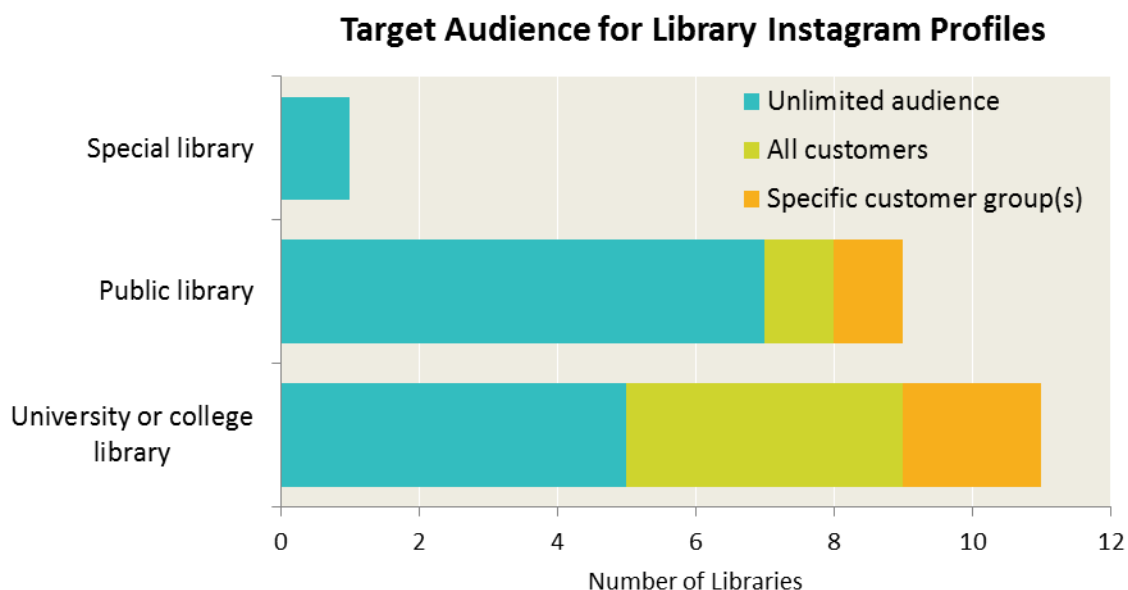


Why libraries are using Instagram

Target audiences

Public libraries were more likely to target anyone with an Instagram profile, whereas university libraries were more likely to target only their customers or a specific customer group (e.g. undergraduates). See Figure 3 below for a summary of target audiences for library Instagram profiles.

Figure 3



Goals

Libraries reported that their goals for the use of Instagram fell into two main categories:

1. Engagement:
 - Connecting with users or being present where their users are
 - Collaborating with users
 - Connecting with a specific user group
2. Promotion and awareness:
 - Showing the value of the library
 - Personifying the library as a whole
 - Focusing on specific campaigns for events, collections and services

Some libraries reported they were experimenting with Instagram for fun and they use it when deemed appropriate, for example, showcasing an event.

Advantages, disadvantages and challenges

Instagram's quick rise to popularity and its consistently high levels of active users has encouraged libraries to delve into Instagram. Several of the libraries found Instagram attractive as their users are ready and willing to engage with them on the platform. The ease of capturing, sharing and engaging with customers through content on Instagram was consistently reported by libraries as a key advantage of the platform. Libraries see the strictly visual medium (rather than text updates like Twitter) as an advantage.

The main disadvantages of Instagram reported by libraries were difficulties experienced with technology and deficiencies in the platform. As a mobile only platform, Instagram is restricted to staff who are willing to use a personal mobile device or who have access to appropriate technology provided by their library. Other

disadvantages mentioned were the inability to integrate with other platforms, inability to support multiple access accounts, difficulty with measuring engagement, and poor search capabilities.

In terms of the generation of content within the platform, some respondents felt that consistently creating engaging and meaningful images was a challenge. Although, not a disadvantage with Instagram itself, time management was also highlighted as an issue. Most of the survey respondents who reported this were managing the library's Instagram profile alone. Only one of the libraries surveyed is no longer using Instagram, reporting that it became too time-consuming.

How libraries are using Instagram

Management

Over half of surveyed libraries had policies and guidelines for the use of Instagram with content guidelines and the posting schedule most widely reported as inclusions. Three libraries indicated their policy included provisions for interacting with followers and the use of hashtags. Two libraries indicated they used a generic social media policy to govern their use of Instagram and two public libraries indicated they followed standard photo release guidelines. Only two participants indicated the gathering of statistics was part of their policy.

There was an even split between individual or team responsibility for managing the Instagram profile. Teams were reported as small: usually two people. One respondent indicated that it was familiarity with the app that determined involvement, while another respondent indicated their profile was partly managed by their Head of Conservation Services "who happens to be very social media savvy".

Less than half of those responsible for their library's Instagram profile had undertaken training. The training tended to be general social media training rather than specifically for Instagram or photography.

Amongst university libraries, all except one reported that staff use personal equipment; whereas, in public libraries there was a split with slightly more using employer-provided equipment.

The majority of libraries were using other tools to edit photos before uploading to Instagram, suggesting its limitations in editing capabilities. Technology used to edit images included apps to add text and more advanced editing tools such as Snapseed and Photoshop.

Most libraries promote their Instagram profiles on their library websites and via other social media channels such as Facebook and Twitter. A unique example reported by a university library respondent involved liking other profiles' images. "Our main mode of promoting our profile is by liking photos that people take in our library and on our campus." Another university respondent said that they "follow students who are already on Instagram and hope they'll follow us back".

One library uses Instagram in a different way by inviting customers to share Instagram pictures of what and where they were reading and occasionally reposting these images within Instagram.

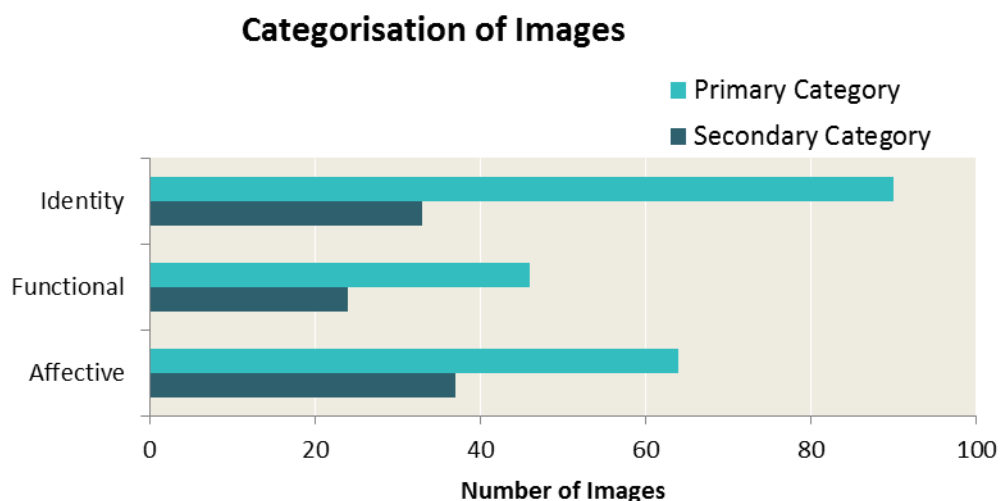
Despite the furore over changes to Instagram’s terms of service in January 2013 (*Thank you, and we’re listening* 2013), 17% of libraries indicated that they had not read the terms of service. One library reported that the terms of service had affected their use of Instagram. The Library was using the Instagram application programming interface (API) with their home-built application and had to “abide by the terms of service” in order to use it. Instagram has a separate agreement for the use of the API which includes the terms of use that general users are subject to.

Types of photos

As described in the methods section, the top ten photos for each library (as determined by number of likes) from the Nitrogram data were categorised according to ‘intention’ as defined in Table 1.

The content analysis of the images revealed that most images fit more than one intention category. As a result, most images were assigned both a primary and secondary intention. While the content of the top ten most popular images from each monitored library varied, the intention behind them was very similar. That is, many libraries are constructing an identity either through self-presentation or self-expression.

Figure 4



It appears that libraries were using images classed as functional less frequently than images that were classed as identity and affective. Functional images included general event promotions and Instagram-based competitions or events, such as ‘instawalks’. Often ‘identity’ images were also assigned an ‘affective’ category, such as the following example from the Park Library. This perhaps demonstrates that engendering an emotion about the library is closely linked to a library’s identity; an idea that could benefit from further research.

Figure 5: Image from The Park Library's Instagram profile. This image was classified as 'functional' and 'affective'



One pattern that emerged is the use of narrative to elevate a functional image to an expression of identity. The following example from Bundaberg Library not only *functions* to remind followers that the library holds events, but in showing the number of people in attendance having a good time presents the library as a fun place to be.

Figure 6: Image from Bundaberg Library's Instagram profile. This image was classified as 'identity' and 'functional'



Another pattern identified was the use of attractive outdoor photography as a means of self-expression. The top ten images of three large American university libraries

were entirely of the outside of buildings, often on a beautiful day or accompanied by blooming flowers – as seen in the following image from Duke University Libraries.

Figure 7: Image from Duke University Libraries' Instagram profile. This image was classified as 'identity'



These types of images do not reflect the services or collections of each library, but present the library as a landmark or presence within their communities.

Not surprisingly, another important theme that emerged from libraries using Instagram to construct identity was the use of images of the library's collections, services and spaces; for example, images of archival photographs or cultural heritage material, pictures of book collections and reading areas.

Many of the images that were concerned with constructing an identity for the library were aimed at 'humanising' that identity and inspiring a connection with their community. Examples used to humanise the library included people engaging with a public library's therapy dog to create a welcoming impression and images with text that illustrated the approachability and friendly nature of staff within the library. Examples of community connections included a public library's campaign to save a branch library, photos of graduation ceremonies, support for local sporting teams, and promotion of makerspaces with active and engaged community members.

The image below shared by UCLA Powell Library received many likes, and unlike other images analysed for this research, many comments. What is unique is the way in which the library used the caption to connect with their audience by acknowledging the students' nickname for the library. The respondent from UCLA Powell Library stated "I took a picture of [the fallen tree] and put a Harry Potter spin on it because our undergraduates frequently refer to our library as 'Hogwarts.'"

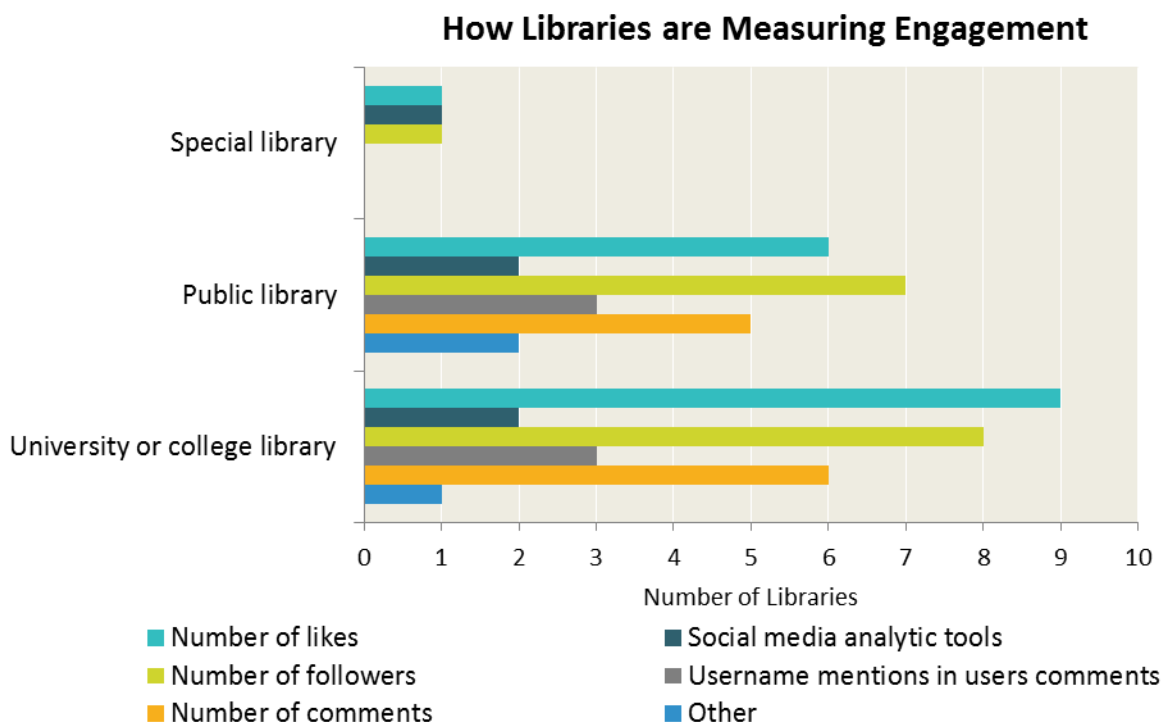
Figure 8: Image from UCLA Powell Library's Instagram profile. This image was classified as 'identity'



Engagement

Most libraries measured engagement through the number of likes for images and the number of followers for their profile. The use of specific analytic tools such as Statigram (<http://statigr.am/>) or Nitrogram (<http://nitrogr.am/>) were not widely used.

Figure 9



Although libraries may be satisfied with the level of engagement attained by an image on Instagram, only a few respondents indicated they were looking for other types of results such as attending an event in the library or using the collection – actions external to Instagram.

When asked how libraries assessed whether an image had met their expected intention, they mostly reported that likes were the only metric. Respondents felt that their audience demonstrating engagement within Instagram itself, by liking, commenting or reposting the image was enough to indicate an image’s success. There was little evidence that respondents were separating levels of engagement from achieving specific objectives of individual images.

One exception was Birmingham Public Library which shared the following image and made this statement in regards to its intention “Several individuals wanted to know how they could get a copy of the image and many contacted the library to find out more about the photograph collections in our archives.”

Figure 10: Image from Birmingham Public Library's Instagram profile



Another was a public library whose respondent indicated that even though an image had received likes, their objective had not been achieved, stating “Local history posts, esp. including photos, are always popular. Don't believe it directly resulted in someone coming in with photos for scanning, so perhaps not successful in that way (possibly not right audience!)”

An analysis of the hashtags and captions used in the 2493 images monitored using Nitrogram, shows some patterns of use amongst highly-liked and highly-commented images. The use of hashtags for local Instagram user groups appeared commonly amongst images that were above average in comments. These groups typically use a hashtag in the form “igersplacename” (igers is short for instagrammers). Libraries targeting local audiences where there is strong activity with such a hashtag could consider using it occasionally to connect with an already established, online, yet local, community.

posting content. Some libraries reported that they don't always cross-post for fear of boring their followers or that it would depend on the content and the appropriateness for each individual platform. One library responded "It's about striking a balance" when deciding where to share Instagram images, while another respondent said posting across three platforms was common: "three birds with one stone."

The survey respondents were asked if the images they shared across other social media platforms such as blogs and Facebook attracted more engagement than text status updates or shared links. All but one respondent agreed that images elicited more engagement from their audience. One respondent from a university said "Sometimes our blog posts (which we also share on Facebook and Twitter) get just as much engagement as the photos" while another respondent from a university said "Many more likes on Facebook! Partially because images are very student-oriented (rather than a research- related article we might share, for example)".

Research limitations

The authors used a *commercial* Instagram analytics tool (Nitrogram) to meet specific *research* requirements of gathering data on many library profiles. This resulted in some limitations. Firstly, this limited the number of libraries that could be monitored. Secondly, Nitrogram provided the number of comments on a particular photo, but not the comments themselves. Thirdly, Nitrogram did not provide a ratio of likes to followers. The authors would have liked to compare the number of likes across all the libraries surveyed, but to do this the ratio was required. Nitrogram did provide a figure for 'author following at post', but this field was only filled out from the date that tracking began, making it unhelpful for the short period the tool was used.

Only ten libraries participated in the follow up survey regarding their intentions when sharing particular images on Instagram. More responses may have reduced subjectivity in the categorisation of images.

The research did not investigate other drivers of engagement such as competitions or other explicit promotion of library Instagram profiles.

Another limitation was the difficulty in analysing picture captions and comments in languages other than English. Google Translate was used, but was not always helpful especially with hashtags.

Recommendations

Based on the findings of this research, there are two main recommendations for libraries looking to begin using Instagram or improve their existing efforts – be clear in your goals, and be creative.

As for any other new strategy within an organisation, goal setting is crucial to ensure value. The research findings have demonstrated that goal setting is important not only for the overall implementation of Instagram, but at the level of each individual post; that is, at a macro and a micro level. Table 2 outlines some considerations for both macro and micro goals.

Table 2: Goal setting

Considerations for setting goals	
Message	MACRO
	<ul style="list-style-type: none"> • What are we trying to say?
	MICRO
	<ul style="list-style-type: none"> • What is the image trying to convey? • Is my caption clear? • Is this the right time? • What hashtags are appropriate? • Is a geo-location appropriate?
Target Audience	MACRO
	<ul style="list-style-type: none"> • Who do we hope to reach?
	MICRO
	<ul style="list-style-type: none"> • How will this image reach the intended audience? • Will it engage the intended audience? • Will it isolate other viewers? • Is this image intended for an audience other than that defined overall?
Engagement	MACRO
	<ul style="list-style-type: none"> • How do we monitor our audience? (e.g., tracking hashtags or geo-locations) • What are people saying about us?
	MICRO
	<ul style="list-style-type: none"> • What am I asking followers to do? (e.g. like, comment, share) • What is the incentive for them to do it?
Evaluation	MACRO
	<ul style="list-style-type: none"> • How do we measure value? <ul style="list-style-type: none"> ○ Number of followers ○ Likes, comments, reposts ○ Hashtags used ○ Other behaviours outside of Instagram ○ Analytic platforms such as Statigram
	MICRO
	<ul style="list-style-type: none"> • How did this particular post perform? • How did a particular hashtag perform?
Use	MACRO
	<ul style="list-style-type: none"> • How will Instagram be incorporated into existing library web presence? (E.g. linked from the library website or Facebook; used as a platform in its own right, or only to feed content into other platforms?)
	MICRO
	<ul style="list-style-type: none"> • Where will this particular image appear? Is it going to show up somewhere out of context?

It is recommended that these considerations are discussed within the wider library team and that they align with existing social media goals, guidelines and policies.

Social media can be unpredictable, but keeping these considerations in mind will give more control over how a post is received. This discussion of macro and micro goal setting is not intended to limit use, but to provide a framework for the creation of timely and effective content.

A creative approach to sharing images is crucial to generate engagement. While it is simple to write a text update on a platform like Facebook or Twitter, creative thought is required to communicate a message visually on Instagram. Rather than rely on the editing capabilities of the Instagram app itself, it is worth exploring some of the other apps that are available for both iOS and Android mobile platforms, such as Snapseed, PicStitch and Overgram. These apps provide more powerful editing tools (such as brightness and contrast control), features to create photo collages, and options to add text or graphic overlays to an image, providing multiple avenues to communicate a message. It is also worth exploring the affordances of the new Instagram video feature, which to date has not been used extensively by libraries.

Having several staff members share the responsibilities for the Instagram account ensures a fresh perspective for each image, and reduces the pressure on an individual to consistently produce engaging content. Where possible it is worth investing in both social media training and creative training (such as basic photography skills) for staff to equip them with skills to generate original and engaging images. Following other users on Instagram is a rich source of ideas as well as discussions around photography, what followers find valuable, and what has been well received by similar audiences.

Ultimately experimentation is important. What is clear from the findings is that Instagram is being used in many different ways to engage an audience. Every audience is different, so different approaches may be needed to find what works for a particular community.

Conclusions

This paper reports on a research project investigating the different ways that libraries are experimenting with photo sharing to engage with their communities. It has focused on the intention behind these efforts to explore the reasons that libraries are utilising apps like Instagram. What emerges is that many libraries are using Instagram as a way of constructing an identity through self-presentation or self-expression. The ease of use of the Instagram app and a willingness of librarians to experiment and be creative in its use has generated a wide range of images that represent the unique identities of public, university and special libraries.

Future research in the area could be undertaken to analyse the composition of photos shared on Instagram and other photo sharing applications with a view to understanding the visual literacy skills of mobile social photography. Further, surveys of followers on Instagram would provide an insight into how the images shared are received and interpreted.

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Image Credits

Figure 13: Image from The Park Library. An example of an image classed as 'functional' and 'affective'

The Park Library (@jomcparklib), 26th April 2013
<<http://instagram.com/p/YiQr6Vqoo4/>>

Figure 14: Image from Bundaberg Library's Instagram profile. This image was classified as 'identity' and 'functional'

Bundaberg Library (@bundylib), 24th May 2013
<http://instagram.com/p/Zro_T5SSsj/>

Figure 15: Image from Duke University Libraries' Instagram profile. This image was classified as 'identity'

Duke University Libraries (@dukelibraries), 23rd May 2013
<http://instagram.com/p/Zp_D6pAw-z/>

Figure 16: Image from UCLA Powell Library's Instagram profile. This image was classified as 'identity'

UCLA Powell Library (@ucla_powell_library), 4th June 2013
<<http://instagram.com/p/aG60ihEQPD/>>

Figure 10: Image from Birmingham Public Library's Instagram profile

Birmingham Public Library (@bplpics), 15th May 2013
<<http://instagram.com/p/ZTRPjmHuoV/>>

¹ A few days prior to the survey being distributed, Instagram launched its video capture functionality which allows users to record and share a 15 second video. This is believed to be in direct response to competition with Twitter-owned Vine. Comments on this new video functionality in Instagram were positive but it is too early to draw any meaningful conclusions.