

How 'social' are New Zealand public libraries?: An evaluation of the  
use of social media for relationship marketing

by

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# 1 ABSTRACT

## INTRODUCTION:

The use of social media by businesses to communicate with their customers and to encourage repeat business is growing. Are New Zealand public libraries strategically employing social media in order to develop relationships with their users for the purpose of marketing the library?

## AIM:

To determine which New Zealand public libraries are using social media. Also to determine the extent to which some New Zealand public libraries are optimizing their use of social media to create relationships with their users.

## METHODS:

Four public libraries in New Zealand were selected, based on their active social media presence on Facebook, Twitter and blogs. Quantitative and qualitative methods were used to examine the Facebook posts, Tweets and blog posts as well as the comments and library replies. Topsy (Topsy.com) was used to locate some of the Tweets. Information about the library users that communicated with the library using SM was obtained by examining Facebook, LinkedIn, Twitter accounts and user blogs/websites, as well as the search engine Google and the New Zealand White Pages. The use of three social media tools by four New Zealand public libraries in urban areas was examined for evidence of strategy and purpose, particularly in enhancing their relationships with their users.

## RESULTS:

The four New Zealand public libraries in urban centres were found to be using social media, but not always strategically. Each of the libraries applied aspects of social media optimization to use one tool more effectively than the other available tools.

Key words: socialmedia, social media optimization, customer relationship marketing, public libraries

## 2 INTRODUCTION

### 2.1 CHANGING ENVIRONMENT

Public libraries are under threat from many other sources of information, such as the Internet, as people increasingly demand immediate, ubiquitous access to information. Connaway & Dickey (2010) report that, for most users, search engines are the preferred method of searching and the usual starting place (pg. 28). The Online Computer Library Center (OCLC) also reports that, in the United States of America, there has been an exponential increase in the use of Google for searching, an expansion of the use of social media (SM) for communication not just among young people, and an increase in internet access (OCLC, 2010). With the increase of smartphone ownership and capabilities (OCLC, 2010), people are finding accessing the internet easier and more ubiquitous, which has a direct impact on the way in which they expect the library, as an information source, to function. 'Libraries are no longer islands of information, but one among many nodes through which information flows to the users' (Ross & Sennyey, 2008, pg 146).

Library users are accustomed to accessing information from home or any other convenient location, at any time they wish (OCLC, 2005). In 2010, the Research Information Network (RIN) and the Society of College, National and University Libraries (SCONUL) reported that one of the most significant challenges for libraries was a change in the way users access information, and as early as 2006, Fialkoff called Google the 'equivalent of a library' for many library users (pg. 8). '[Readers] now expect immediate 24/7 access to a wide range of such services', therefore libraries must 'innovate and exploit new technologies so that their services keep in step with their competitors not only in the UK but in the rest of the world' (SCONUL, pg. 9).

As a result of these changes in society, public libraries must consider every means of communication, including SM, to connect with their users and in order to compete. Ubiquitous access to the internet, increased use of mobile technology and SM for communication means that not only 'a more compelling Web presence that attracts users' is needed (Ross & Sennyey, 2008, pg. 147),



but also an active and deliberate use of tools, including SM, to communicate with library users.

Research from 2008 indicates that not many library users see social networking and SM as part of their perception of the library (Connaway& Dickey, 2010, pg. 43). Since then, however, the popularity of Facebook has increased exponentially, making it a more popular website than Google (OCLC, 2010; Tsotsis, 2010). SM also can attract library users and bring them back to the library time and time again, building loyalty.

DK, Social Media Strategist for CORE Education and founder of MediaSnackers, UK, describes SM as 'digital dialogue'. The use of SM in marketing is to create and enhance this dialogue and can be considered 'optimized' when conversations are occurring between the library and the user(s) and between user and user. SM may also be used to enhance dialogue occurring between libraries, but this specific type of conversation leads to collaboration and collegiality, rather than the connection at the heart of customer relationship marketing (CRM).

These days, marketing, especially for service-based organisations like libraries, is about building relationships. There has been a move from focusing on the transaction to focusing on the interaction (Kotler & Zaltman, 1971; Grönroos, 1994). Similarly, there has been a shift in the methods used for marketing. Mass media, the basis of traditional forms of marketing, are about broadcasting, sending the message out and hoping the target audience will receive it, while SM is about 'digital dialogue', or speaking and listening to users. These two developments complement each other, making SM an ideal tool for relationship-based marketing and, therefore, for libraries to reach an expanding section of their target audience.

'Marketing is the key to the success of the library and listening to customers is the key to marketing' (Mi&Nesta, 2006, pg. 419). SM can enable libraries to both speak and listen. However, there is limited evidence that New Zealand public libraries have begun to use SM in this way.

## 2.2 PROBLEM STATEMENT

Several sources both within and without the information sciences (Cole, Graves & Cipkowski, 2010; Dyer, 2010; Hedin, 2010; Lillevig & Stevens, 2010; J. Robinson, 2007; L. Robinson, 2010; Stanley, 2010) recommend a paradigm shift from traditional marketing to relationship marketing using SM, that is, creating a marketing plan which strategically uses SM to reach, attract and retain users. Many sources have examined the use of SM in libraries, but few sources have examined libraries' use of SM for relationship marketing; these items are far more prevalent in business. Therefore the questions of how many libraries are doing this and how well remain unanswered.

The purpose of this study was to evaluate the use of SM tools, in particular, Facebook, Twitter and blogs, in New Zealand public libraries. The study investigated whether or not public libraries are using these specific SM tools and how well they have optimized their use of SM to market library services by creating on-going relationships with their users.

## 3 LITERATURE REVIEW

Marketing in libraries has been under discussion for many years.

### 3.1 THE ROLE OF MARKETING IN PUBLIC LIBRARIES

Fialkoff (2006) called librarians 'lousy at marketing' (pg. 8). However, marketing is a recognised part of managing a library, and 'should be accepted as one of the functions of a manager...and as a management philosophy' (Owens, 2005, pg. 5-6).

The inclusion of marketing in library and information services (LIS) has been traced from the 1970s to the present (Owens, 2005; Shontz, Parker & Parker, 2004) and the literature demonstrates a growing recognition of the place of marketing in the management of libraries, even though some have seen it as contrary to the public library's position as a public good. Giuliano (2009) even advocates teaching marketing in library and information science university courses.

Because libraries are service-based, rather than product-based (Adeyoyin, 2005, pg. 505), it has been suggested that, for libraries,

Kotler's original 'marketing mix' (Kotler & Zaltman, 1971) should be replaced by 'relationship marketing' (Grönroos, 1994; Owens, 2003; Kotler & Zaltman, 1971), 'an interactive process in a social context' (Grönroos, 1994, pg. 9). For a library to successfully implement a marketing plan, a target audience and their needs must be identified, then 'the goods and services to satisfy them' must be created (Kotler & Zaltman, 1971, pg. 5), and in order 'to understand customers' needs, a library must foster ongoing dialogue with its patrons' to create good customer relationships (Baker & Wallace, 2002, Chapter 7). This is where the use of SM can be beneficial.

The need for libraries as organisations to think strategically and plan their interactions with targeted groups of library users in order to exchange values and achieve organisational goals (Kotler & Zaltman, 1971) has not changed. However, the means of interacting with a particular segment of library users has been transformed due to technological developments, in particular, the increasing use of SM and ubiquitous access to the internet.

### 3.2 BARRIERS TO SUCCESSFUL MARKETING IN LIBRARIES

Three significant attitudes interfere with library managers excelling at marketing. The first is a gap in the understanding of what marketing includes. Many equate it with selling products, but because marketing in libraries is service-based, rather than commercial, differences arise. Marketing in public libraries involves identifying specific users and their needs (segmenting), developing and promoting services appropriate for these users as well as establishing and enhancing good public relations in order to remind users of the value of the library and ensure repetitive use. For a service organisation like a library, marketing places the emphasis on the relationship, or the 'conversation', between the library and its users and on the recognition of the library as an information and service provider.

Library managers are often blinded by the historic status of libraries in their communities. They have been '[misled] by the large number of patrons passing through the building and comforted by past successes' (Ross & Sennyey, 2008, pg. 146) into thinking that there was little need to promote the

library's services or to engage with their users. Some, in the past, have thought that the benefits of the library are themselves an attraction (Kotler & Murray, 1975), but more recently, it has become evident that libraries must promote their services and create 'brand recognition'. '[Librarians] need to market their services and resources with higher visibility' because users are often unaware of them (Connaway & Dickey, 2010, pg. 18), and because now there is direct competition from the internet. One method of creating higher visibility is through having a strong web presence.

Finally, there is the reluctance to see the need for applying a 'business model' to a non-commercial enterprise. However, the precedent of public libraries following good business practices has been traced clearly by Roy (2003, pg. 217) who encourages the inclusion of marketing in library manager competencies (pg. 227) and Baker and Wallace (2002) who detail ways of including marketing in the management of public libraries. Specifically, library managers need to be aware of the opportunities to create positive, enduring relationships with their users, by whatever means available.

As leaders of a service organisation under threat, library managers need to understand the tools that successful businesses are using to market themselves. They 'must use modern tools of communication to reach their consuming publics' (Kotler & Levy, 1969, pg. 15) to target their audience and to create relationships.

### 3.3 MODERN TOOLS IN THE LIBRARY- LIBRARY 2.0 AND SOCIAL MEDIA

The phrase 'Library 2.0' is still evolving, although the meaning revolves around the concepts of participation and collaboration (Holmberg et al., 2009). Articles about Library 2.0, like those about Web 2.0, tend to be future-focused and conceptual (Maness, 2006).

What is Web 2.0? According to O'Reilly (2005) who began to define Web 2.0 in 2004 with Batelle, some of the basic characteristics identified include being service-based; adding by participation; user-controlled and -developed; based around small groups; and exploiting collective intelligence. Most people

define Web 2.0 tools as those that encourage collaboration over individualism and use terms like 'the read-write Web' to describe Web 2.0.

Since 2007, reviews or summaries of Web 2.0 software use in libraries have been available (McDermott, 2007; Stephens & Collins, 2007; and Rutherford, 2008b). However, these mostly examine the tools themselves or give an overview of their use. Tripathi (2009) examines the adoption of Web 2.0 tools in academic libraries and highlights the need to select the tools strategically. Additionally, these sources cite the possibility for assisting access and collaboration in public libraries (Baumbach, 2009), for transforming education (Brown & Hill, 2009), or in terms of transformational change and paradigm shifts (Byrne, 2008).

Others examine the implementation of Web 2.0 tools in specific situations. All of these are overviews of the use of Web 2.0 tools with particular foci – science, library management, medicine – and tend to cover similar ground. McLean (2008), for example, examines the effect of the adoption of Web 2.0 tools in nine specific libraries in America, documenting the successful implementation of Web 2.0 tools. Her work, however, is mostly descriptive. Similarly, Humble (2010) describes the Web 2.0 tools used in libraries in Texas.

Several papers have reviewed the Web 2.0 tools being used in different library settings, academic and public. O'Dell (2010) has found that science librarians are beginning to use the tools to support scientific research, particularly in access to content, organisation of information and promotion of scientific discoveries. Rethlefsen et al. (2007) surveys the use of Web 2.0 tools in the medical library environment, coming to the same conclusion as others – librarians need to use these tools in order to do their jobs well and to remain relevant in information organisation and access. Click and Petit (2010) advocate the use of Web 2.0 tools for transferring knowledge, particularly information literacy.

As is evident, papers about Web 2.0 in libraries tend to be limited to those discussing ways to use a particular tool, such as Flickr (Forsyth & Perry, 2010), specialised examinations of specific aspects such as text-mining of 'tweets' (Banerjee et al., 2009), or case studies (Greenhill, 2008),

occasionally about the adoption of Web 2.0 technology (MacKenzie, 2008). Papers about Web 2.0 in New Zealand libraries are limited, with only one paper found (Chawner, 2008). This surveys the Web 2.0 tools being used in New Zealand libraries and makes significant recommendations for library managers in regards to training.

SM is sometimes used interchangeably with Web 2.0. However, 'social media is a new set of communication and collaboration tools that enable many types of interactions that were previously not available to the common person' (Brogan, 2010). The emphasis here is on people and interactions, rather than on tools and transactions. Significantly for libraries, 'social media and Web 2.0 come together whenever one of these new technologies has as its primary goal to enable communities to form and interact with one another – to converse' (Safko & Brake, 2010).

SM represent a sub-group of Web 2.0 tools for reaching a growing segment of the library's target audience. Through SM, brand loyalty can be built, and this attraction and retention of users creates a 'relationship so that the economic goals of that relationship are achieved' (Grönroos, 1994, pg. 9).

Rogers (2009) has explored the current uses of SM and Web 2.0 technology in American libraries, both academic and public, and claims that often they are simply reiterations of existing services or sources. Like Robinson (2007), he advocates the use of these tools for the promotion of the library, rather than attempting to out-do competitors, and although his survey results indicate that personal communication with users was valued by them, Rogers does not specifically discuss the use of SM tools for relationship marketing. The value of personal communication been shown in other organisations (Craig, 2010; Safko & Brake, 2010; Qualman, 2009), which suggests that any tools, including SM, which can encourage opportunities for 'conversation' should be utilised.

One of the more comprehensive studies of Web 2.0 tools was completed recently by Chua and Goh (2010) who studied the use of Web 2.0 tools in a detailed manner, comparing North American libraries to those in Europe and Asia, and found that both academic and public libraries in North America were

more likely to have implemented Web 2.0 tools than those in Europe or Asia. Significantly, the tools they examined included SM, such as blogs, social networking and instant messaging, and they linked the use of these Web 2.0 tools to higher quality of service and web presence, hinging on the development of a connection between the users and the information managers. Thus, a use of SM correlates with enhanced relationships.

MacKenzie (2008) recommended the use of SM to engage users and for collaboration between information managers in Australian regional libraries (2008), but research has found that libraries are using new tools in old ways, simply transmitting information, rather than creating relationships. Stuart (2010) demonstrates that libraries worldwide have neglected the 'social' side of microblogging and often fail to personalise their Tweets or maintain their accounts, creating a poor relationship with their users. It is evident that libraries are still wrestling with the strategic creation of a 'digital dialogue'.

Rutherford (2008b) enumerates the issues that can arise in using SM tools in American and New Zealand libraries. She clearly identifies the need for the strategic implementation of SM, taking into consideration library budget, values, mission and the willingness of staff to attempt new things. Rutherford (2008a) also goes a step further and examines the use of social software, or SM, and its impact. The study is small but significant in being one of the first empirical studies of SM in libraries. She found that the seven participants felt strongly about the communal nature of the software and its ability to attract library users. However, the study focused on the change to a more user-centred library service and marketing the library to the users was not examined specifically.

Although research has been conducted on marketing in libraries and literature exists on Web 2.0 tools in libraries, little has been written about the use of SM for marketing in New Zealand's public libraries. Several studies have looked at SM in American libraries. Vogel and Goans (2005) have examined the use of blogs in an academic library; Fernandez (2009) has evaluated SM in marketing libraries; and Click and Petit (2010) have looked at possible uses for communicating with users. Only a few researchers have looked at New

Zealand libraries. LeGac (2010) has examined the uptake of Twitter, and Rutherford (2007) has looked at the adoption of social software.

One unpublished thesis was found that discussed blogs and marketing in New Zealand public libraries. Kercher (2008) examined the use of blogs in Australasian libraries and highlighted the potential for their use in relationship marketing. More recently, a series of articles by Pewhairangi (2011a, b, c) has drawn attention to the use of SM by New Zealand public libraries. She found that New Zealand public libraries seem to be in the initial stages of implementing SM, rather than strategically incorporating its use. As this increase in recent literature shows, researchers are beginning to realise the need to examine SM use for marketing in New Zealand public libraries.

### 3.4 SOCIAL MEDIA AND MARKETING

In the business world, SM has been touted as the latest, greatest marketing tool (Brogan, 2010; Qualman, 2009; Safko & Brake, 2009; Sterne, 2010). In 2008, Dairy Queen established their Facebook Fan Page; as of October 2010, this page has almost two million fans. In 2010, Telecom XT used Twitter to address the concerns of people using XT when the network crashed. Businesses are beginning to understand the value of effectively used SM; libraries seem not to.

Twitter, for example, is attracting interest among users and researchers alike. The research ranges from a narrowly focused study of the information gained from closely examining the words use in a person's tweet (Banerjee et al., 2009) to a very general overview of Twitter and its functions (Weaver, 2010). Jansen et al. (2009) examined the impact of Twitter, and other microblogging, on customer perception of a brand and influence on purchases. They found that microblogging is a powerful method of reaching customers, as well as creating and maintaining relationships with them.

Because SM exploits the strengths of the 'read-write web' and facilitates 'digital dialogue', it is particularly suited to being used in CRM. Businesses all over the world seem to be using SM in this way, but there is little evidence of the adoption of SM for CRM in New Zealand public libraries.



## **4 FOCUS OF STUDY**

The social networking site, Facebook, and the microblogging site, Twitter, were chosen for this study as they were the most popular tools of their kind at the time the research was completed, according to eBizMBA(<http://www.ebizmba.com/>). Weblogs, or blogs, were included as a third SM tool. All of these tools have a wide audience and are already being used to converse about businesses and organisations. For example, Facebook has more than 350 million users globally, and hundreds of businesses now have their own Facebook pages; Twitter has over 15 million active users; and '70% of bloggers are organically talking about brands on their blog' and many of these are reviewing products or services they use (Hird, 2010). These numbers mean that New Zealand public libraries cannot afford to be absent from SM sites; they must be participating in the conversations about them, conversations that probably already exist.

Each of these tools allows an organisation to interact with its clients in different ways. Facebook encourages the sharing of more than just text; Twitter allows for frequent but brief posts and links to websites; and blogs allow for lengthier 'speeches' that may or may not be commented upon. Facebook is used to create a social network, and one must be a member of that networking group to use it. Blogging is unique in this study as a specific blogging tool was not selected. This is because of the wide range of products that people can use to blog. Here, a specific blogging tool was not studied, instead the focus was the action of blogging. However, the conversation occurring via comments was considered.

RSS feeds and wikis are popular Web 2.0 tools, the former allowing users to personalise the information they receive and the latter allowing for collaborative knowledge to be built. However, neither tool has the creation of 'digital dialogue' as their central purpose. As a result, they were not included in this study.

## **5 RESEARCH QUESTIONS**

The study was intended to examine the extent to which SM interactions are 'optimized', using social media optimization rules (adapted for libraries) as a tool for evaluation. This led to four research questions:

1. To what extent is the library 'participating' in online discussion or 'digital dialogue'?
2. Who is using SM to communicate with the library and how responsive is the library in these interactions? Are the libraries rewarding engagement?
3. How 'authentic' are these interactions and what effect does authenticity seem to have on the interactions?
4. What are the apparent purposes of the library use of SM?

## **6 ANALYTICAL TOOL**

Using a pragmatic paradigm, this study looked at the consequences of the implementation of social media optimization (SMO), using several methods of research to complete the investigation. It was based in the real actions of New Zealand public library managers, with the aim of providing useful advice for other public libraries.

### **6.1 SOCIAL MEDIA OPTIMIZATION**

In 2006, Bhargava coined the phrase 'Social Media Optimization' or SMO. He defined this as a way to 'implement changes to optimize a site so that it is easily linked to, more highly visible in social media searches on custom search engines (such as Technorati), and more frequently included in relevant posts on blogs, podcasts and vlogs [blog posts using video].' Bhargava (2006) also originated the '5 rules of social media optimization (SMO)', based around the idea of Search Engine Optimization (SEO). He originally recommended these ideas:

1. Increase your linkability;
2. Make tagging and bookmarking easy;
3. Reward inbound links;

4. Help your content travel; and
5. Encourage the mashup.

By 2009, other significant figures in the use of SM, such as Jeremiah Owyang, Cameron Olthius and Loren Baker, added 11 more rules:

6. Be a user resource, even if it doesn't help you;
7. Reward helpful and valuable users;
8. Participate;
9. Know how to target your audience;
10. Create content;
11. Be real;
12. Don't forget your roots; be humble;
13. Don't be afraid to try new things; stay fresh;
14. Develop an SMO strategy;
15. Choose your SMO tactics wisely; and
16. Make SMO part of your process and best practices.

In 2010, Bhargava (2010) realised that his original rules had become out-dated due to technological changes and revised them to the following:

1. Create shareable content;
2. Make sharing easy;
3. Reward engagement;
4. Proactively share content; and
5. Encourage the mashup.

Although SMO is a relatively new theory, it is beginning to be used around the world to make the use of SM in businesses more effective, although it is sometimes not named specifically. For example, it is clear that the principles of SMO are the basis of Wigmo & Wikström's recommendations (2010) to businesses in the use of SM for marketing, as they have included ideas such as being strategic and transparent. Several business examples also demonstrate the implementation of Bhargava's rules. Fujifilm has a website

for sharing photos called Every Picture Matters ([www.everypicturematters.com](http://www.everypicturematters.com)) which not only has a 'share' button that allows sharing on hundreds of social sites, but also rewards sharing of photographs and stories by featuring them on the home page. This model demonstrates the use of Bhargava's rules for 'making sharing easy' and 'rewarding engagement.' The principles behind SMO can be found in the use of overseas libraries too, such as in Blakeman's recommendations (2010) of the use of SM in British libraries for marketing and advertising, but also within the organisation and in order to keep track of the organisation's reputation. SMO here underlines both aspects of a 'dialogue', speaking but also listening.

SMO is being tested and gaining credibility as a theory as more organisations realise the need for a strategic approach to the use of SM. As a coherent expression of a collection of ideas about SM in marketing, it is an appropriate theoretical framework for this study. It enabled a deeper examination of the uses of SM in New Zealand public libraries.

Both commercial and service organisations are increasingly interested in both sides of the 'digital dialogue'. However, libraries and other service organisations need more and more to focus on encouraging engagement and creating a positive user experience.

## 6.2 MEASURING SM

There are questions about using traditional marketing research, based on quantitative methods, to measure the effect of SMO (Richardson, 2010) because SM metrics only measure particular SM activities quantitatively. For example, Altamirano (2009) examines the level of participation (Rule 8) via the use of Twitter and Facebook by top brands, by enumerating Followers and Friends, but without analysing the quality of relationships.

Many means of measuring SM use qualitatively are available. These can give a more detailed view of the effect of following the rules for SMO. For example, SM metrics can be used to measure 'engagement' or the extent to which interactions are encouraged, enhanced or extended by the use of SM, in other words, the extent to which the 'digital dialogue' is nurtured. In essence, SM

metrics can measure the level of engagement by examining who is reading what is posted and their responses: re-posting, commenting, following, discussing, forwarding, etc. (Brito, 2007). These metrics can allow SM users to monitor the successful implementation of SM by measuring the level of SMO. Measuring SM use can be done with a variety of tools. For example, tools such as PostRank and Tweetbeep can count mentions of an organisation's blog, trackbacks can send alerts that someone else has linked to a blog and Twitalyzer can help measure 'Generosity' or ratio of Re-tweets to Tweets. However, some of these can only be measured by the organisation or person who is posting.

Other qualitative aspects can be measured by SM metrics. SM metrics that are measuring 'dialogue' or 'conversation' are of great interest to this study as they not only measure SMO, but also the building of relationships between the library and the library user. Other aspects that can be measured are 'trust' and 'reputation'. Sterne (2010) argues that the combination of these allows the measurement of 'influence'.

Measuring SM use can be accomplished with a variety of tools. For example, tools such as PostRank and Tweetbeep can count mentions of an organisation's blog, trackbacks can send alerts that someone else has linked to a blog and Twitalyzer can help measure 'Generosity' or ratio of Re-tweets to Tweets. However, some of these can only be measured by the organisation or person who is posting.

Although SM metrics exist and some of them help to measure SMO, measurement tools specifically formulated for calculating SMO have not yet been developed. For this study, SMO rules and existing ideas of SM metrics were used as the basis for developing a tool to evaluate SMO.

### 6.3 COLLECTION TOOL

For a service organisation, such as a public library, it is important to measure aspects such as 'engagement' and the level of 'conversation' to ensure that the use of SM has made the value of the organisation or service visible. Because of this, specific metrics have been chosen to evaluate the use

of SMO. These metrics were selected to acquire a detailed view of the use of SM and determine the extent of SMO.

This study used some of Bhargava's revised rules for SMO and some of the added rules to develop a tool to gauge the optimization of SM used in urban public libraries in New Zealand. In particular, the study examined these rules:

1. Create shareable content;
2. Make sharing easy;
3. Reward engagement;
4. Proactively share content;
6. Be a user resource, even if it doesn't help you;
7. Reward helpful and valuable users;
8. Participate;
9. Know how to target your audience;
10. Create content; and
11. Be real.

Because the mashup is thus far limited in its manifestation in the SM content of New Zealand public libraries, 'encourage the mashup' (Rule 5) was considered less relevant to this study and was omitted.

'Being humble' (Rule 12) and 'stay fresh' (Rule 13) are directed at businesses and entrepreneurs. They are sound advice for anyone running and promoting an organisation, rather than a basis for the strategic use of SM for marketing or engaging in 'digital dialogue' (Singer, 2009). For these reasons, they were omitted. This study rightly predicted that 'Developing an SMO strategy' (Rule 14), 'Choosing your SMO tactics wisely' (Rule 15) and 'Making SMO part of your process and best practice' (Rule 16) were not yet relevant for an organisation, such as a New Zealand public library, that is just beginning to use SM to promote the library. Therefore, these rules were not included in the study.

The remaining rules were consolidated into a more concise list for SMO in public libraries.

1. Participate in the online conversations by creating shareable content and making sharing easy. (Rules 1, 2, 4, 8, 10)

2. Know your target audience. (Rule 9)
3. Reward engagement and helpful, valuable users. (Rules 3, 6, 7, 9)
4. Be real/authentic. (Rule 11)

These four rules formed the theoretical basis for the measurements taken in this study of New Zealand urban public libraries.

**Table 1: Data collection tool overview**

Research question	Measurement	Method
1. To what extent is the library 'participating' in online discussion or 'digital dialogue'?	Posts Comments Tweets Replies Cross-posting Share this buttons Accessibility from various sites	Quantitative  Qualitative
2. Who is using SM to communicate with the library and how responsive is the library in these interactions? Are the libraries rewarding engagement?	Target audience demographics Library responses Fans Followers Comments from users Re-Tweets: Tweets Tweets from others: library Tweets	Qualitative  Quantitative
3. How 'authentic' are these interactions and what effect does authenticity seem to have on the interactions?	Library staff names Library staff photographs Library staff opinions	Qualitative
4. What are the apparent purposes of the library use of SM?	Promotional posts: Non-promotional posts	Quantitative

(See Appendix A: Data Collection Tool for more detail.)

Although using public information, care was taken to quantify the comments and posts, separating the private information that relates to individuals from the posts.

## **7 RESEARCH METHODOLOGY**

This study used both qualitative and quantitative methods to investigate the use of SM in New Zealand public libraries. Although researchers have argued that qualitative and quantitative methods are opposites, Rossman & Wilson (1985) argue that they should be seen as complementary. As Greene & McClintock (1985) describe it, 'the goal... is to strengthen the validity of the overall findings through congruence' (pg. 524). Fichter & Wisniewski (2008) say that 'qualitative and quantitative [methods go]... hand in hand to tell the story' (pg. 56). This combination of methods is known as mixed methods research.

Mixed methods research has been defined as 'the type of research in which a researcher or a team of researchers combines elements of qualitative and quantitative research approaches... for the broad purposes of breadth and depth of understanding and corroboration' (Burke Johnson, Onwuegbuzie & Turner, 2007, pg. 123). It is especially appropriate when the research questions drive the approach.

Molina-Azorín (2011), like Burke Johnson, Onwuegbuzie & Turner (2007), points out the benefits of the mixed methods approach, especially for business management research. He indicates that the study method adds value by producing a more complete answer for particular research questions and enriches the conclusions (pg. 9). Additionally, it is the research method which fits best with the pragmatic approach, as is being taken in this study (Burke Johnson, Onwuegbuzie & Turner, 2007; Feilzer, 2010).

Because SM is new, it does not fit easily into either world view. Quantitative research is often used in marketing to examine the Marketing Mix, and SM metrics encourages the use of quantitative methods to examine SM use. However, here the study evaluated the use of SM in terms of SMO rules which seems to encourage the examination of some aspects quantitatively and some aspects qualitatively in order to determine the effectiveness of SMO (Trochim, 2009). Therefore, quantitative and qualitative methods were combined in order to produce the most substantive results.



## 7.1 ADVANTAGES AND DISADVANTAGES OF THE METHODS

While quantitative measurements can indicate the 'reach' of a product or blog or Tweet as well as give an indicator of traffic, these measurements cannot determine how engaged the user is. For example, if a person is Following a library on Twitter, it is unclear as to whether or not that person is actually reading the library Tweets or how often. These aspects can only be determined through qualitative measurements. Also, although quantitative measurements appear scientific in their accuracy, the correlations can be less than accurate due to interpretation, either by the researcher or, if on a survey, by the subject.

Qualitative measurements, such as examining the types of mentions of a library blog, can give some indication of a person's opinion, but because it is based in language, the meaning can be misconstrued. Likewise, a rating given to a comment or post can be misunderstood as it is based on a person's interpretation of the rating scale. Also, the rating can be influenced by the beliefs of the person rating the service, who might feel self-conscious about giving a poor mark or about giving a good mark. Qualitative measurements are often seen as too subjective to be reliable. However, qualitative measurements will allow abstract ideas such as ease of use and authenticity to be measured in this study as well as help to discern the characteristics of the target audience.

## 7.2 RESEARCH POPULATION OR SAMPLE

Purposive selection was used to limit the population to those libraries most likely to have access to the internet and be using it to communicate with their users.

The population to be studied consisted of the public libraries in New Zealand Aotearoa. In New Zealand, there are hundreds of public libraries, including all branch libraries. The public libraries included in this study were those who are members of the organisation, Public Libraries of New Zealand (<http://www.publiclibrariesofnewzealand.org>). This organisation presented the location and contact information for libraries in a clear and easily accessible manner and appeared to have a complete list of New Zealand public libraries. Additionally, the contact information for the libraries appeared to be up to date and accurate.

This study focused on the main libraries serving an urban population. Being located in urban areas, these libraries were more likely to be connected to the Internet and have a population of users who were used to accessing information instantly and at any time. These users were likely to be using SM already and would find it a preferred way of communicating with the library. According to Statistics New Zealand, a 'city is a territorial authority area which has a minimum population of 50,000, is predominantly urban in character, is a distinct entity and a major centre of activity within its parent region' (<http://www2.stats.govt.nz>), therefore an urban library should be serving a population of that size or more.

### 7.3 DELIMITATION OF POPULATION

The following libraries, until 2008, were part of the Metropolitan Public Libraries Network, Incorporated ([www.metronet.org.nz](http://www.metronet.org.nz)), the 'society of New Zealand public libraries serving populations of 50,000 or more'. Four of the member libraries, Maukau, North Shore, Rodney and Waitakare) have since been amalgamated into the Auckland Libraries. Using the MPLN list and the Statistics New Zealand definition, these libraries were identified as urban:

- Auckland City Libraries
- Christchurch City Libraries (CCL)
- Dunedin Public Libraries (DPL)
- Hamilton City Libraries
- Hastings District Libraries
- Hutt City Libraries
- Invercargill City Libraries
- Napier Public Libraries
- Nelson Public Libraries
- New Plymouth District Libraries
- Palmerston North City Library (PNCL)
- Porirua City Library
- Rotorua Public Library
- Tauranga District Libraries

- Wellington City Libraries (WCL)
- Whangarei District Library.

The main library of these sixteen organisations was examined for the presence of these SM tools: Facebook, Twitter and blogs. These specific SM tools were chosen for sufficiency and for accessibility and were limited to ensure that the study could be completed in the time available.

**Table 2: New Zealand public libraries using blogs, Facebook and/or Twitter as of 1 April 2011**

Library name	Active Facebook page	Twitter Account(s)	Active Blog
<b>Auckland City Libraries</b>	y	y	y
<b>Christchurch City Libraries (CCL)</b>	y	y	y
<b>Dunedin Public Libraries (DPL)</b>	y	y	y
Hamilton City Libraries	y	n	n
Hastings District Libraries	y	y	n
Hutt City Libraries	y <sup>‡</sup>	n	n <sup>^</sup>
<b>Invercargill City Libraries</b>	y	y	y
Napier Public Libraries	n	y	n
New Plymouth District Libraries	y	n	n <sup>^</sup>
<b>Palmerston North City Library (PNCL)</b>	y	y	y
Porirua City Library	y <sup>‡</sup>	y	n
Rotorua Public Library	n	n	n
Tauranga District Libraries	inactive	n	n <sup>^</sup>
<b>Wellington City Libraries (WCL)</b>	y	y	y
Whangarei District Library	n	n	n <sup>^</sup>

<sup>‡</sup>Not created by library

<sup>^</sup>Not obvious on website or by search engine

\*Has since been created

Of the six libraries using all three forms of SM, four were selected for a deeper examination, using social media optimization (SMO) as a measurement tool. These libraries are Christchurch City Libraries (CCL), Dunedin Public Libraries (DPL), Palmerston North City Library (PNCL) and Wellington City Libraries (WCL). Auckland Libraries was de-selected because they had recently been amalgamated and it was felt that their use of SM needed to be examined after they had had time to establish the new organisational system. Similarly, Invercargill City Libraries was de-selected because it was felt that they were too newly established in their use of SM. Additionally, balance between the North and South Island libraries was sought. Ultimately, two libraries from the North and South Islands were selected, and among these, there is one early adopter of SM (Wellington City Libraries), two later adopters (Dunedin Public Libraries and Palmerston North City Library) and one recent adopter (Christchurch City Libraries). This range was intended to allow SMO to be examined more clearly since one library began to use SM only two years after Bhargava (2006) formulated his SMO 'rules'. In theory, this should have meant that that library would employ SM more strategically.

#### 7.4 DATA SOURCES

This study examined the use of SM as well as the interactions via SM in a snapshot of New Zealand public libraries, looking at data collected within one calendar month in 2011. Data was collected from the blogs, Twitter accounts and Facebook accounts of the population described in the previous sections.

The following data was examined:

From 1 April 2011 – 30 April 2011:

- Comments/Posts/Tweets per day;
- Presence of Add This buttons;
- Facebook: Comments, Likes, Fans, Events;
- Twitter: Tweets, Followers, Re-tweets, 'Generosity' (ratio of Re-tweets to Tweets); Signal to Noise ratio (Tweets with @, #, 'via' or URL versus those without);

- Blog comments, polls;
- Library responses (Replies, Thank Yous, Implementation of suggestions), and
- Photographs and names/usernames of library staff involved in using SM.

Information about the library users who chose to use SM to communicate with the library was collated using information from Facebook accounts, Twitter profiles, user blogs and websites, LinkedIn profiles and the search engine Google.

## 8 FINDINGS

### 8.1 PARTICIPATION IN ‘DIGITAL DIALOGUE’

**Table 3: Frequency of SM use**

	Wellington	Palmerston North	Christchurch	Dunedin
Total Facebook comments	39	10	140	17
Facebook comments/day	1.300	0.333	4.667	0.567
Total Tweets	172	14	97	62
Tweets/day	5.733	1.067	3.230	2.033
Total blog posts	78	1	92	N/A
Blog posts/day	2.600	0.033	3.100	0.000

All of the libraries are using Facebook and Twitter actively. However, PNCL and DPL have minimal and no activity on their blogs. CCL has more activity on their Facebook Wall than on their Twitter feed or blogs. WCL, in contrast, has significantly more activity on their Twitter feed than on their Facebook Wall or blogs.

**Table 4: Unique\* posts per SM tool**

	Wellington	Palmerston North	Christchurch	Dunedin
Facebook	0 out of 39	10 out of 10	8 out of 140	0 out of 17
Twitter	141 out of 246	53 out of 53	13 out of 97	62 out of 62
Blog(s)	78 out of 78	1 out of 1	92 out of 92	Not applicable

\*Not cross-posted from another platform

**Table 5: Cross-posting**

	Wellington	Palmerston North	Christchurch	Dunedin
Cross-posts from FB to Twitter? (#)	0	0	0	17 out of 17
Cross-posts from FB to blog? (#)	0	0	0	0
Cross-posts from Twitter to Facebook (#)	0	0	0	0
Cross-posts from Twitter to blog? (#)	0	0	0	N/A
Cross-posts from blog to Twitter? (#)	78 out of 78	0	84 out of 92	0
Cross-posts from blog to FB? (#)	39 out of 78	0	92 out of 92	0

By examining the unique posts and posts that occur on more than one platform (cross-posts), the source and direction of information flow can be seen clearly. Both WCL and CCL are using similar models, using their blogs as the source of the information flow. WCL uses Tweetdeck to cross-post all of their blog posts from all four blogs to Twitter and then tweets additional posts. CCL, on the other hand, uses HootSuite to cross-post most of their blog posts to Twitter. CCL also cross-posts all of their blog posts to Facebook, while WCL only cross-posts some. DPL generates all of their 'noise' from Facebook and directs it to Twitter. PNCL is the only one generating all of their 'noise' uniquely, on every SM platform.

**Table 6: Accessibility of content**

	Wellington	Palmerston North	Christchurch	Dunedin
Links to Slideshare	yes	no	no	no
Links to Vimeo content	no	no	no	no
Links to YouTube content	yes	yes	yes	yes

All of the libraries are linking to YouTube videos, most of which are not created by the library that is posting. Only WCL has a single link to a presentation on Slideshare ([www.slideshare.net](http://www.slideshare.net)). Although the libraries are creating content on the three main SM platforms, there is limited evidence of creating or sharing other online content.

**Table 7: Ease of sharing**

	Wellington	Palmerston North	Christchurch	Dunedin
Add This buttons on blog	News-RSS only	Facebook, Twitter, Blog, email, RSS	Facebook, Twitter, email, RSS	N/A
	Business -RSS only		Kids blog - Facebook, Twitter, email, RSS	
	Teens- Facebook Like, Twitter Re-Tweet			
	Kids-none			
Add This buttons on the website	Facebook, Twitter - leading to a multitude, but blue on blue	Facebook, Twitter, Blog	Facebook, Twitter, RSS, Flickr	Facebook, Twitter Flickr, YouTube
Content shareable through shortened URLs	Yes	Yes	Yes	Yes
Content shareable through cutting and pasting URL	Yes	Yes	Yes	Yes

All of the libraries seem to be making sharing ‘easy’ by including buttons to enable users to ‘Add this’ to Facebook, Twitter and RSS feeds. CCL has included Flickr and DPL has included both Flickr and YouTube. WCL has

included many ways of sharing information from the website, but not from all of the blogs. Because the tools for sharing are different for each blog, it is assumed that the library has strategically chosen methods which appeal to their targeted users.

## 8.2 TARGET AUDIENCE: LIBRARY USERS WHO USE SM TO COMMUNICATE WITH THE LIBRARY

For each library, the Tweeps (Twitter users), Facebook users and people commenting on the blogs were studied in order to obtain a picture of the library users who chose to communicate with the library through SM.

### 8.2.1 FACEBOOK

PNCL and CCL both have posts from various local organisations on their Facebook page.

**Table 8: Organisations communicating with libraries using Facebook**

	Wellington		Palmerston North		Christchurch		Dunedin	
	Likes	Comments	Likes	Comments	Likes	Comments	Likes	Comments
Organisation	0	0	0	1	4	1	0	0
local event related	NA	NA	NA	0	0	0	NA	NA
local resource	NA	NA	NA	1	2	1	NA	NA
local library	NA	NA	NA	0	1	0	NA	NA
book related	NA	NA	NA	0	1	0	NA	NA

**Table 9: Age breakdown by gender for Facebook users**

	Christchurch				Dunedin			
Gender	Likes		Comments		Likes		Comments	
	M	F	M	F	M	F	M	F
>/= 20	26	2	2	0	0	0	0	0
20-25	0	1	0	1	0	1	0	0
26-30	1	15	0	2	0	1	0	0
31-35	3	16	4	2	2	1	1	0
36-40	4	7	3	5	0	1	0	0
41-45	1	9	0	1	1	7	4	1
46-50	0	2	0	1	0	1	0	0
51+	2	11	5	2	0	0	0	0
Unknown	2	22	2	2	1	1	0	0



For the users communicating with the library through Facebook (see Appendix B), those simply clicking ‘Like’ were differentiated from those making a ‘Comment’. It was felt that making a Comment indicated a greater investment by the user.

Males and females interacted with the library differently. In Christchurch, females were far more likely to Like a post than males. However, both were equally willing to Comment. In Dunedin, the females were more likely to Like an item, but far more males were posting Comments. In all regions, users interacting with the library through Facebook were more likely to be female than male.

In Christchurch, the female users tend to be between 26-35 or over 50. The men on the other hand, are slightly older, 31-40 or over 50. Users employing Facebook to communicate with DPL seem to be about ten years older than in the other three regions of the country.

Because these numbers do not indicate individuals, but incidences of an action, the age range for CCL looks very young. However, 23 of the 26 Likes were from the same person. This was the repetitive action with the most impact as other users tended only to Like items once or twice. Also, the observed group is small and may not be representative of all the library users who Follow the organisation on Facebook.

**Table 10: Highest level of education of users communicating with library using Facebook**

	Wellington		Palmerston North		Christchurch		Dunedin	
	Likes	Comments	Likes	Comments	Likes	Comments	Likes	Comments
secondary school	0	0	3	2	42	3	0	0
tertiary	2	0	4	0	16	6	1	1
post-graduate	1	0	1	1	10	4	4	1
unknown	2	1	2	2	55	19	12	4

In both Wellington and Dunedin, the users who communicate with the library using Facebook tend to be degree holders. In Palmerston North, the users tend to be less likely to have a post-graduate degree. In Christchurch, the users are evenly spread between the three levels of education, after

compensating for the one user who had repeated Liked items. It should be noted that information about educational levels was unavailable for a large number users.

**Table 11: Occupation of users communicating with library using Facebook**

	Wellington		Palmerston North		Christchurch		Dunedin	
	Likes	Comments	Likes	Comments	Likes	Comments	Likes	Comments
Employed	1	1	2	2	48	17	5	1
Student	0	0	2	0	3	2	0	0
FT parent	0	0	0	0	2	0	0	0
retired	0	0	0	0	8	1	0	0
Unknown	4	0	6	3	62	12	12	5
technology	0	0	2	1	3	4	0	0
art/creative	0	0	0	0	8	1	0	0
libraries/archives	1	0	0	0	11	6	1	0
other	0	1	0	1	26	7	4	1
Entrepreneurial /Self-employed	0	1	0	0	12	2	2	0

Most of the users from all regions are employed, although Christchurch has some users who identify themselves as retired. They also have a couple users who have identified themselves as full-time parents. No other region had users in either of these categories. Wellington, Christchurch and Dunedin users tended to be people working in libraries and archives, while Palmerston North users tended to be in ICT-related fields. Dunedin, Christchurch and Wellington users were more likely to own their own businesses or be self-employed than those in Palmerston North.

### 8.2.2 TWITTER

Information about library users who communicate with the library using Twitter was more readily available than information about Facebook Fans or those leaving blog comments (see Appendix C).

**Table 12: Organisations using Twitter to communicate with library**

	Wellington	Palmerston North	Christchurch	Dunedin
Organisation	16	1	10	3
local event related	0	1	0	0
local resource	1	0	0	1
local library	0	0	0	0
book related	3	0	0	0
writing related	0	0	6	0
technology related	7	0	0	0
political	0	0	1	0
sports	0	0	0	0
other library	0	0	0	0
local city council	3	0	3	2
other	2	0	0	0

For WCL, CCL and DPL, the most common organisation that they are communicating with using Twitter is the local city council. For Wellington, the next most popular category of organisations is technology-related, and for Christchurch, writing-related.

**Table 13: Organisations using Twitter to communicate with library, including PNCL Tweeps**

	WCL	PNCL	@JaimeRidge	@Warrick_PNCL	CCL	DPL
Organisation	16	1	1	2	10	3
local event	0	1	0	0	0	0
local	1	0	0	0	0	1
local library	0	0	0	0	0	0
book related	3	0	0	1	0	0
writing	0	0	0	0	6	0
technology	7	0	0	0	0	0
political	0	0	1	0	1	0
sports	0	0	0	1	0	0
other library	0	0	0	0	0	0
local city	3	0	0	0	3	2
other	2	0	0	0	0	0

When the two people who are actively Tweeting for PNCL are included, the range of organisations expands and begins to exhibit personal interests.

**Table 14: Age breakdown by gender for users communicating with library using Twitter**

	WCL		PNCL	@JaimeRidge	@Warrick_PNCL	CCL		DPL	
	M	F				M	F	M	F
>/=25	NA	NA	0	0	0	NA	NA	NA	NA
26-30	6	3	1	0	0	0	2	NA	NA
31-35	4	0	0	2	0	NA	NA	0	8
36-40	NA	NA	0	1	1	0	1	1	1
41-45	3	1	0	0	0	NA	NA	NA	NA
46-50	NA	NA	0	0	1	NA	NA	NA	NA
51+	NA	NA	0	0	0	1	0	NA	NA

For WCL, PNCL and CCL, the Tweeps tend to be male. However, Tweeps communicating with DPL are more likely to be female. For PNCL, this may have to do with the gender of the two people actively Tweeting in April for PNCL.

The age range of Tweeps tends to be under 45 years old for all libraries. WCL and CCL Tweeps tend to be under 35 years old. For all of the libraries, the female Twitter users tended to be younger than the males. However, for DPL, the general age range is higher; therefore those female Twitter users are older than for the other three libraries.

The numbers for all libraries, especially PNCL and CCL, are very small and possibly not representative of the whole segment. Tweeps overall tend to be more open about their personal details, and it was easy to estimate an age range for every one of them.

**Table 15: Highest level of education for users communicating with library using Twitter**

	WCL	PNCL	@JaimeRidge	@Warrick_PNCL	CCL	DPL
secondary school	0	0	0	0	0	0
tertiary	14	1	2	2	3	8
post-graduate	2	0	1	0	1	2

Twitter users, as a whole, tend to be more likely to be highly educated than Facebook users. None of them had finished only secondary school and several had multiple degrees, certificates or diplomas. Again, the tendency of

Tweeps to be transparent with their personal information meant that educational levels were able to be estimated for every user.

**Table 16: Occupation of users communicating with library using Twitter**

	WCL	PNCL	@JaimeRidge	@Warrick_PNCL	CCL	DPL
Employed	16	1	3	2	3	10
Student	0	0	0	0	1	0
Technology	16	1	3	2	0	1
Libraries	1	0	1	0	0	0
Writing	0	0	0	0	2	0
Publishing	0	0	0	0	0	6
Other	0	0	0	0	2	3
Entrepreneurial/Self-employed	6	0	0	1	2	7

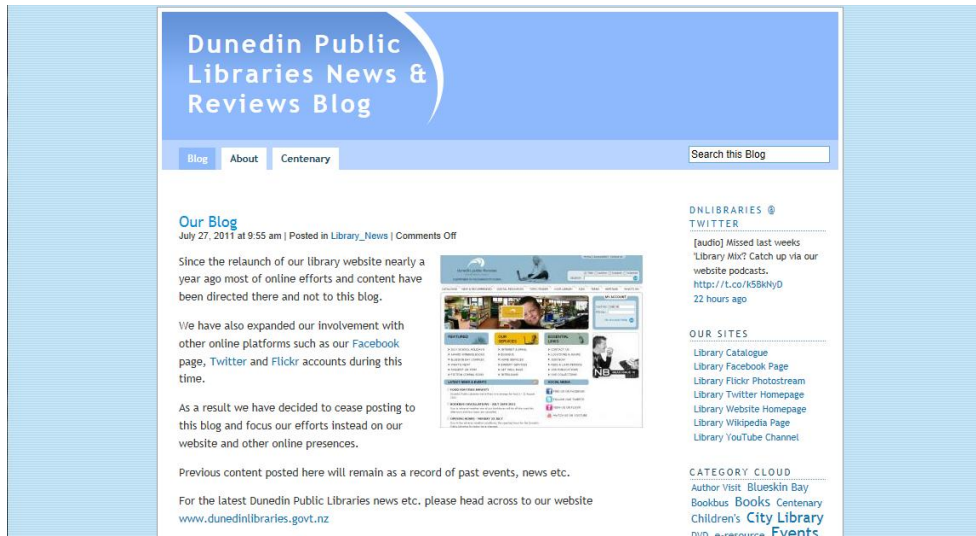
None of the Tweeps were either retired or identified themselves as solely full-time parents. Only one self-identified as a student. A few of them were in cross-disciplinary fields. Most of them, unsurprisingly, were in a technology-related field. Also unsurprising was the number of Tweeps who described themselves as self-employed or involved in entrepreneurial activities. Dunedin was unusual again in that its Tweeps were more likely to be in publishing than in technology.

### 8.2.3 BLOGS

Library users who communicated with the library through blogs were the most difficult to describe (see Appendix D). The mechanism for commenting on blogs meant that the identity of the user could easily be obscured. Although most of the dialogue occurring between library staff was eliminated, there are several comments that have been included which are highly likely to originate from within the organisation, rather than from actual library users.

Although DPL seemed to have an active blog when this study was proposed, it quickly became evident that the blog was inactive. In July 2011, DPL announced the shutdown of the blog until further notice in order to focus on other SM (Figure 1). Therefore, no information about DPL's blog was included in this study.

**Figure 1: DPL announcement of blog shutdown**



The PNCL blog has been re-launched since the start of this study. There was only one blog post in April, with no comment. It, too, has been omitted from this section of the study.

On the other hand, CCL Kids blog is notable for its extensive activity. It has been included as a separate category, so that the strategy in place is clearly visible.

**Table 17: Age breakdown by gender of users commenting on library blog**

Age range	Wellington	Christchurch News			Christchurch Kids		
		Male	Female	?	Male	Female	?
>/= 24	0	0	2	0	18	15	0
26-30	0	0	0	0	0	0	0
31-35	0	0	2	0	0	2	0
36-40	1	0	5	0	0	0	0
41-45	0	1	0	0	0	4	0
46-50	1	0	1	0	0	0	0
51+	0	3	7	0	0	2	0
Unknown	4	9	10	2	0	0	5

The user who posts a comment on a library blog is more likely to be female than male. This is the reverse of the findings for Facebook.

A person who is likely to post a comment on the blog for WCL or CCL is older than for either Facebook or for Twitter. However, as expected, the people posting on the CCL Kids blog are mostly under the age of 24 years old.

Both WCL users with identifiable genders were female. For the CCL News blog, a similar pattern to other SM was noted. The female users tended to younger on average than the males. However, on the CCL Kids blog, the males tended to be younger than the females. This is due to the comments from authors, all of whom were female.

**Table 18: Highest level of education of users commenting on library blog**

	Wellington	Christchurch News	Christchurch Kids
Secondary school	0	2	0
Tertiary	0	5	6
Post-graduate	0	8	2
Unknown	6	27	5

The data collected here underlines the difficulty of finding out information about library users who post comments on the blogs. Only one-third of the users who commented on the CCL News blog were able to be classified, and none of the WCL users were. The users posting on the CCL Kids blog were mostly primary school students.

**Table 19: Occupation of users commenting on library blog**

	Wellington	Christchurch News	Christchurch Kids
Employed	2	20	8
Student	0	2	33
Unknown	4	22	5
Art	0	3	0
Technology	0	0	0
Libraries/archives	0	1	0
Publishing	0	1	0
Writing	1	4	8
Books	0	0	0
Teaching	0	0	5
Other	2	8	0
Unknown	4	22	5

The lack of information about users who comment on blogs is again highlighted. Although the educational level of approximately half of the CCL News and WCL blog users was able to be identified, and some information about their fields of employment, it was a much more challenging process with fewer results than other SM. Obviously, more blog users on the CCL Kids blog would be students. However, almost all of the other comments are left by writers or teachers, or people who are both.

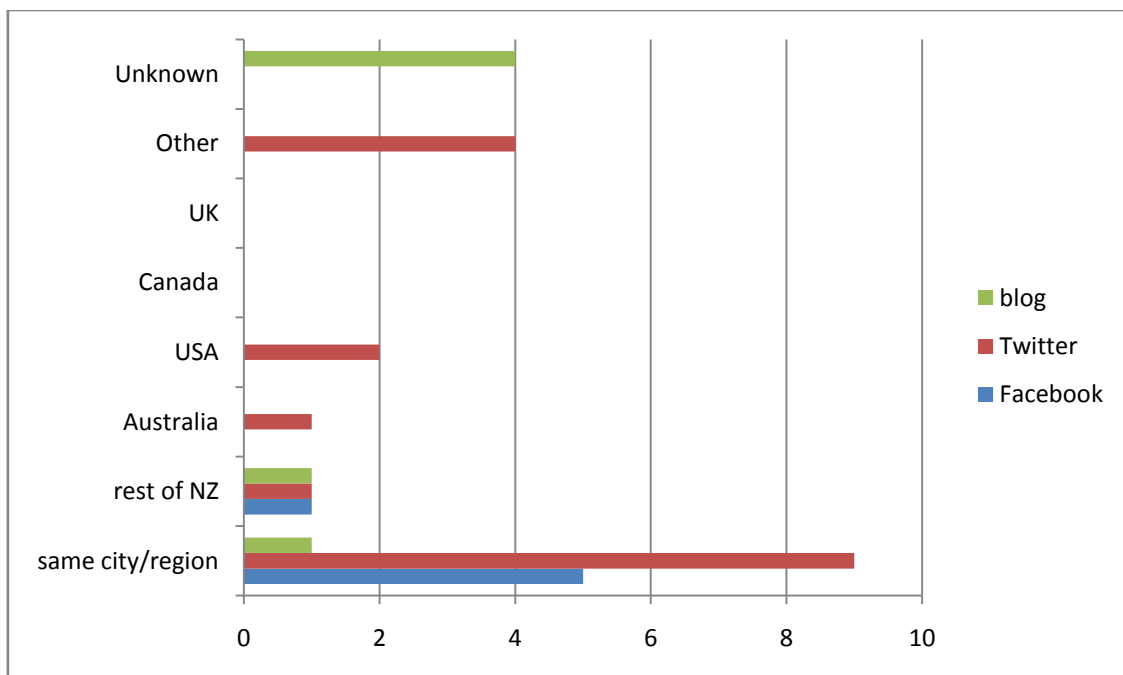
**Table 20: Blog posts by users on CCL Kids blog**

	Males	Females	Unknown	Total
Blog posts with comments	5	2	1	8
Blog posts with no comments	3	2	0	5
Total	8	4	1	12

No other blog included in this study had blog posts by users. The CCL Kids blog had eight posts with comments and a further five without, making a total of 12 blog posts by children. More boys than girls posted on the CCL Kids blog, reflecting a similarity to the data examining the CCL Facebook Comments.

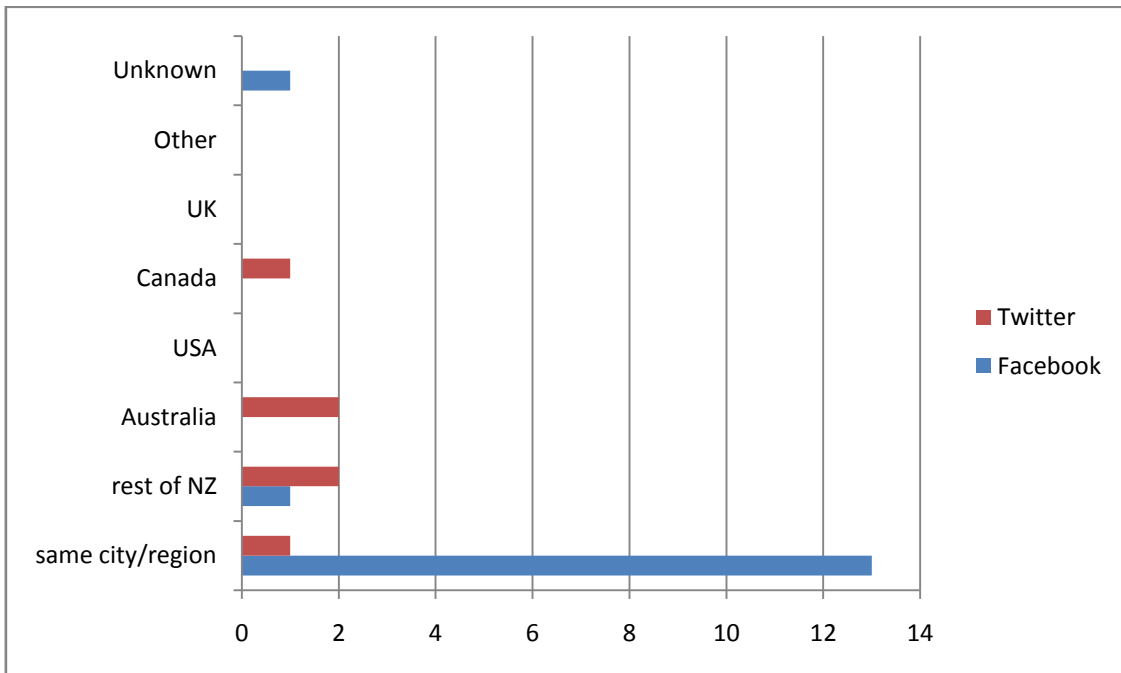
#### 8.2.4 GEOGRAPHIC DISTRIBUTION

**Figure 2: Geographic distribution of WCL SM users**

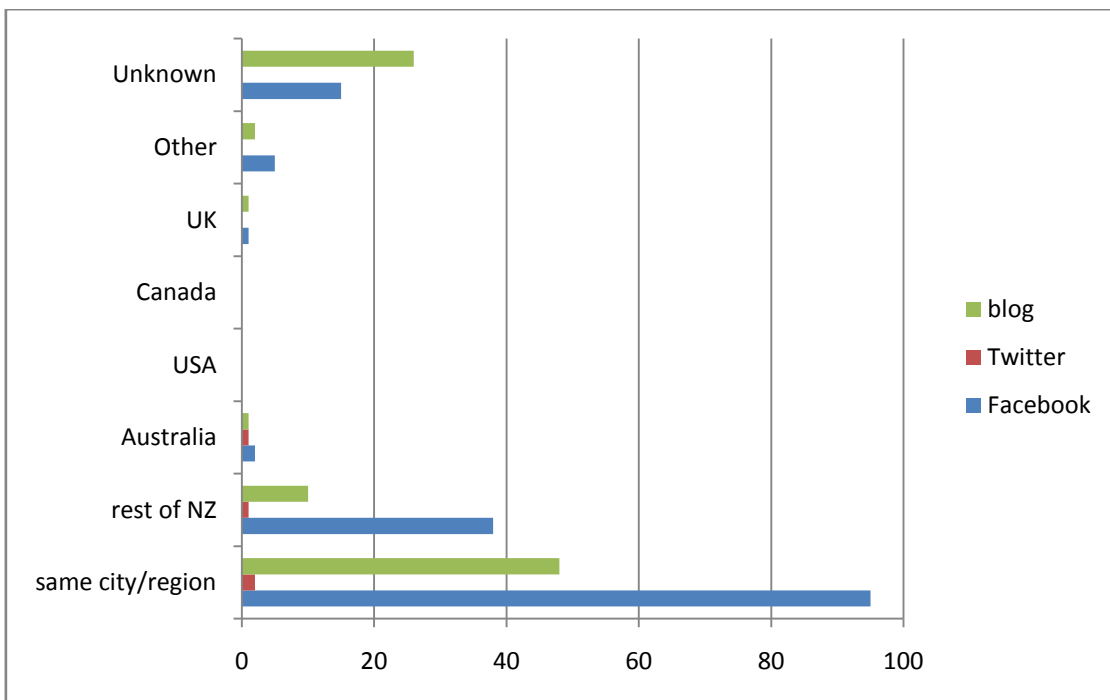




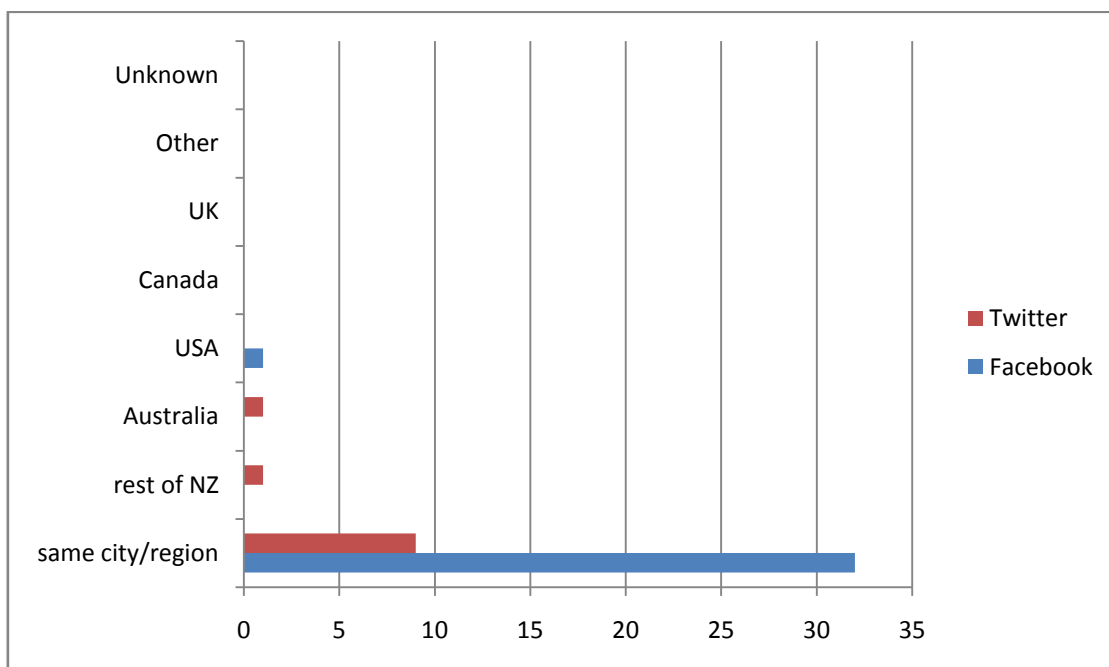
**Figure 3: Geographic distribution of PNCL SM users**



**Figure 4: Geographic distribution of CCL SM users**



**Figure 5: Geographic distribution of DPL SM users**



For each of the libraries, most of their users who are using SM to communicate with the library are from the same city or region. PNCL, which is developing its SM strategy, has more Tweeps from outside the region than from nearby. WCL has equal numbers of comments from the local region as from the rest of New Zealand. Both of these results could be affected by the small sample size.

For each of the libraries, a significant number of the users of each SM platform were unable to be identified. This also has ramifications for accuracy.

### 8.3 REWARDING USERS

Engagement is a measure of target audience participation in 'digital dialogue'. On Facebook, this means, for example, that users are Liking and Commenting on library Wall posts; on Twitter, users post Replies and Re-Tweets; and in terms of blogs, this is evident in the number of comments.

According to SM metrics, measuring engagement can be done by examining various interactions and, according to SMO, engagement can be amplified by posting information valuable to users and rewarding interactions.

In particular, Twitter metrics specifically look at ‘Generosity’ and ‘Signal to Noise’. ‘Generosity’ is a measure of the amount of Re-Tweets to Tweets (<http://twitalyzer.com>) and is measured quantitatively. In the Twitter world, ‘Generosity’ means that the user excels at finding information of interest to the target audience which, in turn, develops loyalty. ‘Noise’ is the number of Tweets and ‘Signal’ is any Tweet that includes indicators that the user is referencing someone else. These indicators include hashtags (#), hyperlinks (indicated by URLs) and references to other Twitter users (indicated by @ symbol).

Organisations can ‘reward’ their users simply by replying to user contributions to the digital dialogue. For example, questions should have replies. Rewards can also be more involved responses, such as competition prizes or posting links to user blogs/websites. Obviously, showing appreciation by thanking users is also rewarding. In SM, ‘rewards’ involve responses to a person’s input into online dialogue.

### 8.3.1 ENGAGEMENT, BASED ON FACEBOOK ACTIVITY

**Table 21: Facebook use**

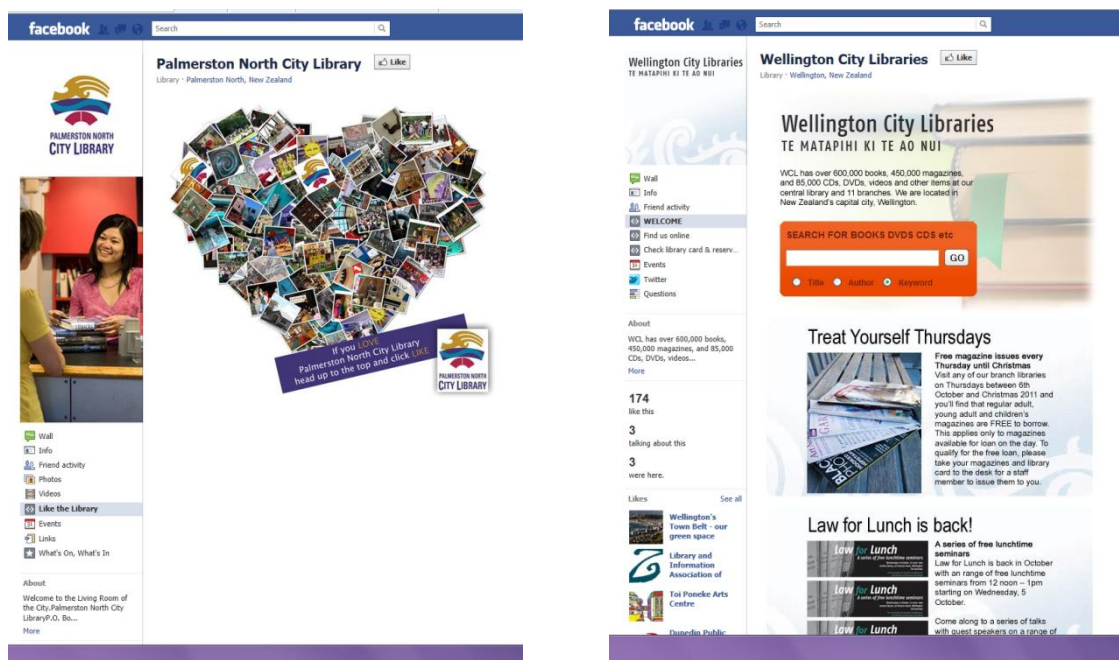
	WCL	PNCL	CCL	DPL
FB Fans*	166	1029	1419	865
Posts by the library	39	10	140	17
Users Liking library posts	11	5	132	16
User comments on library posts	0	2	20	3
User posts on library Wall	1	4	13	3
Number of Replies from lib to user posts on Facebook	0	3	10	2
Percentage of user Facebook posts that get replies	0%	75%	76.923%	66.667%
Average time lapse since previous post	N/A	14.333 minutes	152 minutes	3150 minutes
Per Facebook event, average number of Comments on Event Wall	No events	No events	1 out 6 events	No events
Number of Responses to Events	No events	No events	14 out 6 events	No events

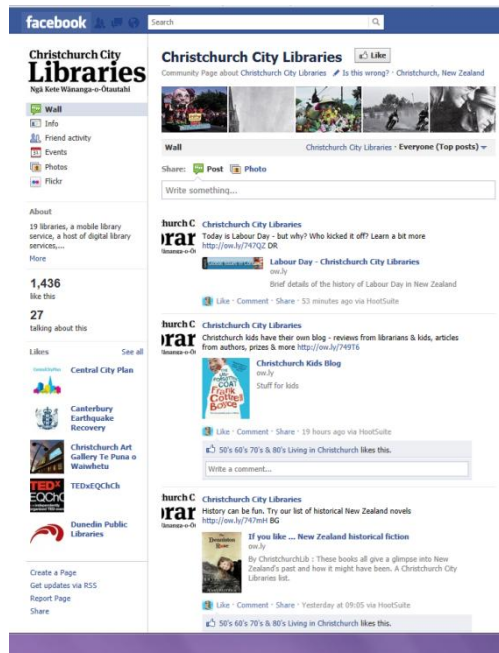
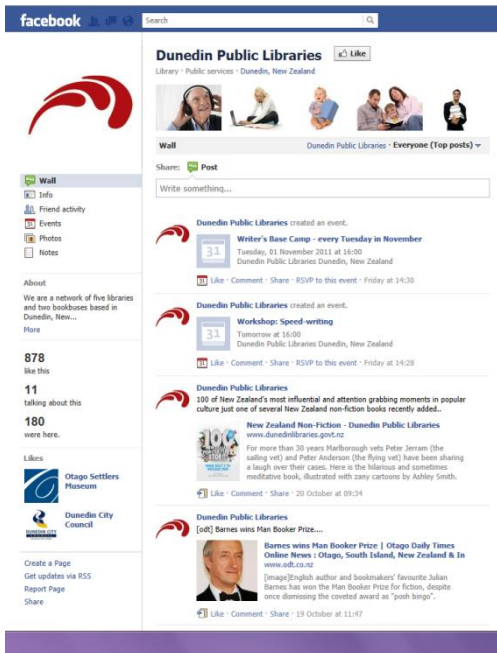
\* based on number of people who have Liked their page

CCL has the largest number of posts and is replying to about three out of four user comments. Their users are active and Like the library comments. They are also the only library creating Events on Facebook. WCL has only one user comment and did not reply. Although DPL only had three comments, the library replied to two of them. However, the average time lapse between post and reply is over two days, suggesting that their Facebook page is not being monitored.

One of the most striking results is the disproportionate number of Facebook Fans for WCL. The library serves a geographical area which is similar to CCL, but has about a tenth of the Fans. The second striking finding is the large number of Fans for PNCL. Examining the library Facebook pages may suggest some answers.

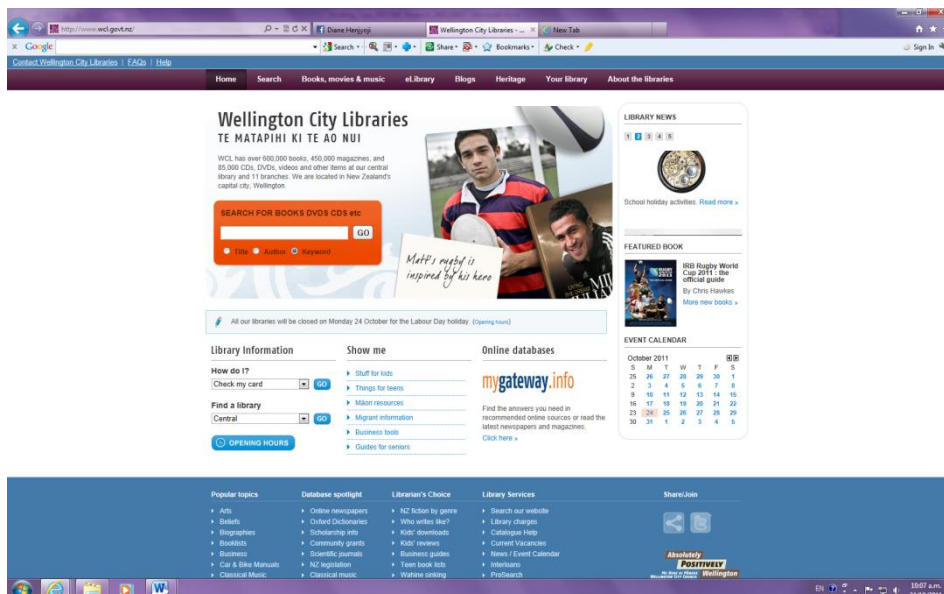
**Figure 6: Comparison of library Facebook pages**





Both DPL and CCL seem to be using the same model, starting the users on the Wall and encouraging the reading of the library posts. PNCL starts the users on a 'Like the library' page which could account for the high number of Fans. WCL, on the other hand, starts the users on a page which looks very similar to the library website (Figure 7), with the main icon being for the catalogue.

Figure 7: WCL website



PNCL has the fewest Posts and the fewest interactions but the second highest number of Fans. However, even though the number of interactions is small, the responsiveness of the library is very high. They have replied to three out of four user posts on the PNCL Wall. Not only that, but they reply promptly. Combined with the use of unique posts in every form of SM, this seems to be a very powerful way to interact with users. There seems to be a correlation between promptly Replying to users and the level of engagement. There does not seem to be a relationship between the number of organisational posts and the level of engagement.

### 8.3.2 ENGAGEMENT, BASED ON TWITTER FEEDS

**Table 22: Twitter use**

	Wellington	Palmerston North	Christchurch	Dunedin
Number of Twitter Followers	1510	274	1521	720
Number of Tweets	172	14	97	62
Re-Tweets (# out of total Tweets)	19	0	5	3
Generosity (as measured by RTs to Tweets?)	11%	0	5.2%	4.8%
Signal to Noise ratio (after removing the https that are self-referential)	35.5%	7.1%	21.6%	27.4%

Both WCL and CCL have approximately the same number of Twitter Followers, while DPL has about half that number and PNCL has the least. These numbers are proportionate to the population of each of the urban areas that the library is serving.

Even though WCL, CCL and DPL are all cross-posting from other SM to Twitter, WCL is adding the largest number of Tweets. These are often Re-Tweets (RTs) from other Twitter users. All three of these libraries would have misleading rankings on Twitalyzer (a tool used to examine Twitter use) due to cross-posting. Cross-posting means that every Tweet will include a URL, one of the indicators that Twitalyzer looks for in order to determine Signal to Noise ratio. On Twitalyzer, all of these libraries would look like they have Signal to

Noise ratio of or near 100%. However, this study has eliminated the cross-posts and examined only those Tweets that are truly ‘Signal’.

It is evident from these statistics that of all four libraries, WCL is using Twitter most effectively to engage with its users. Both the measurements of ‘Generosity’ and ‘Signal’ are the highest. Although CCL came out higher in Pewhairangi’s earlier study (2011b) using Klout to measure a library’s influence, by breaking down the numbers and eliminating false positives by ignoring the inclusion of self-referential URLs and hashtags (#), it is clear that WCL is making the most effective use of this tool.

PNCL is obviously only beginning its use of Twitter as an organisation. However, if the Twitter users that are linked to the library who posted in April are included, PNCL is clearly leading the libraries, outdoing even WCL.

**Table 23: Comparison of Twitter use by individuals and organisations**

	Other PNCL users for April	Wellington	Palmerston North	Christchurch	Dunedin
Number of Twitter Followers	109	1510	274	1521	720
Number of Tweets	39	172	14	97	62
Re-tweets (# out of total Tweets)	8	19	0	5	3
Generosity (as measured by RTs to Tweets)	20.5%	11%	0	5.2%	4.8%
Signal to Noise ratio (after removing the https that are self-referential)	41%	35.5%	7.1%	21.6%	27.4%

Two things seem evident. Firstly, when individuals post, there is a higher level of Generosity and Signal to Noise. In other words, people, rather than organisations, are more likely to be creating relationships with users by sharing information and by going beyond broadcasting. This suggests that there is a relationship between being ‘real’ and using SM well, as implied by the SMO rules.

**Table 24: Replies to library Twitter users**

	Wellington	Palmerston North	Christchurch	Dunedin
Number of Replies from library on Twitter	6	1	2	9
(Number of Tweets)	172	14	97	62
What percentage of tweets are replies?	3.488%	7.143%	2.062%	14.516%

All of the libraries are limited in the amount of conversation that they have with their Twitter users. However, this does not seem to have a significant impact on the number of Twitter Followers. It may have an impact on whether or not the library users feel engaged with the library, but this was not examined in this study.

### 8.3.3 ENGAGEMENT, BASED ON BLOGS

**Table 25: Blog use**

	Wellington	Palmerston North	Christchurch	Dunedin
Number of blog posts	78	1	92	N/A
Number of comments on blog posts*	6	0	89	N/A
Percentage of blog posts prompting comments	7.692%	0.000%	96.739%	N/A

\*Omitting librarians

PNCL and DPL had no significant data for this SM tool.

WCL has four blogs – News, Business, Teens and Kids. The number of Comments on the four blogs is limited. It is worth mentioning that on the WCL News blog, each time the Comments were turned on, library users commented. However, for most of the blog posts, Commenting was turned off. Conversely, although the Comments were turned on for the WCL Teen Blog, only one comment was made. This could be due to the readership of each blog.

CCL is generating the most significant amount of digital dialogue. After eliminating the conversation occurring between CCL librarians, the amount of digital discussion between users and librarians occurring here remains notable. This is divided equally between the CCL Kids Blog and the CCL News Blog.



CCL users are engaging in on-going communication with their library using blog comments.

### 8.3.4 RESPONDING TO USERS

According to SMO rules, responding to users is a method of rewarding users. These responses may take the form of including links to the users' blogs/websites or simply thanking them for a comment. These responses should boost user participation in 'digital dialogue' and encourage repeat visitors to a SM site.

**Table 26: Library responsiveness to user feedback**

	Wellington	Palmerston North	Christchurch	Dunedin
Feedback (question, compliment, complaint, suggestion, TY)	6	4	19	4
Facebook	1	4	9	3
Twitter	2	0	0	1
Blog	3	0	10	NA
Customer suggestions that have been implemented	NA	100%*	NA	25%**
Frequency of appreciation (Thank you, reply, email, tangible prize)	Rarely	Occasional	Often	Sometimes <sup>‡</sup>
For any contests, the number of entries?	No contests	No contests	6 contests, 17 entries	No contests
Per poll, number of entries?	No polls	No polls	1 poll, 23 entries	No polls
Events - average attending, maybe, not/event? (All are considered responses.)	No events	No events	6 events, 14 responses	No events
Frequency of library posting links to <b>users'</b> blogs, wikis, websites, etc. on Facebook	Infrequently	Sometimes	Never	Never
Frequency of library posting links to <b>users'</b> blogs, wikis, websites, etc. on Twitter	Occasionally	Infrequently	Occasionally	Never
Frequency of library posting links to <b>users'</b> blogs, wikis, websites, etc. on blog(s)	Never	Never	Never	N/A

\*All on Facebook; all implemented.

\*\* From Twitter.

<sup>‡</sup>8 Tweets contain 'Thanks', or other similar words/phrases ('no prob', 'you're welcome', etc.).

Each of the libraries receives feedback from its users, but CCL has the most, generated from Facebook and the blog(s). WCL has a small amount which is fairly equally distributed between the three SM tools. Likewise, DPL has a small amount from both SM tools it is using. PNCL has feedback only from Facebook.

Only CCL is employing techniques like polls and contests which might encourage participation. The poll seems to generate the most responses from the users. This could be related to the low threshold for entering. Polls take the least amount of effort to enter.

WCL seems to be the least responsive overall, rarely receiving feedback and rarely expressing appreciation. DPL receives some feedback through SM avenues, but gives out lots of rewards by implementing a suggestion and expressing appreciation frequently. There are also signs of their ideas being passed on to others, as they thank two different users for Re-Tweeting a library post. DPL would probably be considered a valuable contributor to Twitter. PNCL has only received feedback through one SM tool, but implemented all the suggestions, once within an hour. They also expressed appreciation on their one comment. Although incoming comments are few, PNCL is responding promptly to all of them.

Unsurprisingly, CCL receives the most feedback from the blogs, and this feedback is frequently rewarded. They are also using high status rewards for their Kids blog. For example, comments on the CCL Kids blog are rewarded by reply from CCL or from the author of the book that has been mentioned in the comment. However, no suggestions have been made by users, and all of the competitions and polls have been posted on the CCL Kids blog only.

#### 8.4 AUTHENTICITY

Authenticity or being 'real' involves presenting a human face when using digital tools. This includes actions such as including a photo of the blogger/Tweep/Facebook user and a real name, even if it is only a first name. It also means that a certain amount of personal 'tone' is present in the SM posts. Organisations must choose the extent to which they are personalising their

interaction with their customers. SMO rules recommend creating personal links to users through SM by using names, images and ideas.

**Table 27: Being 'real'**

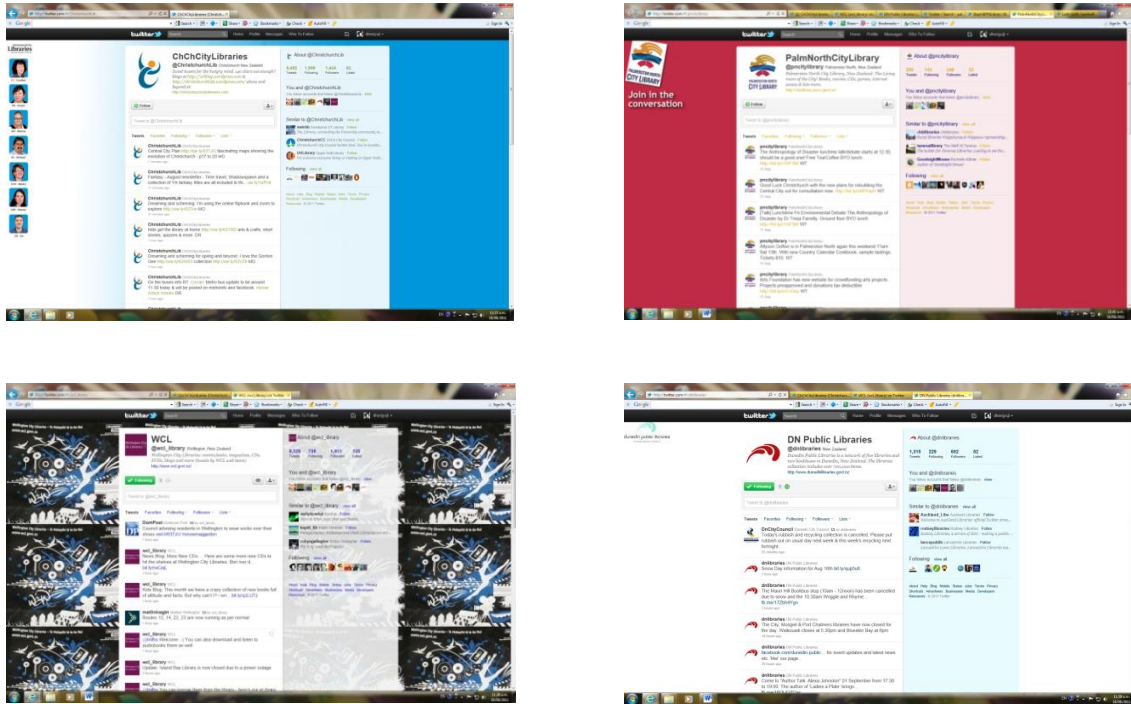
	Wellington	Palmerston North	Christchurch	Dunedin
Person's name used when posting on Facebook	No	Yes/No	Occasionally initials	No
Photo(s) of person posting on Facebook	No	No	No	No
Frequency of the Facebook comments including personal opinions/interests	Unknown	Unknown	Unknown	Unknown
Person's name used when Tweeting	No	No: PNCL, Yes: JaimeRidge&Warrick_PNCL	No	No
Photo(s) of Tweep(s) used as avatar	No	No	Yes*	No
Frequency of the tweets including personal opinions/interests	Not often	Not often	Sometimes	Never
Photos of blogger(s) present	No	No	No	N/A
Person's name used when blogging	Yes	No	Yes	N/A
Frequency of the blogs including personal opinions/interests	Never	Never	News – Never, Kids –Often	N/A

\*Initials of Tweep also included

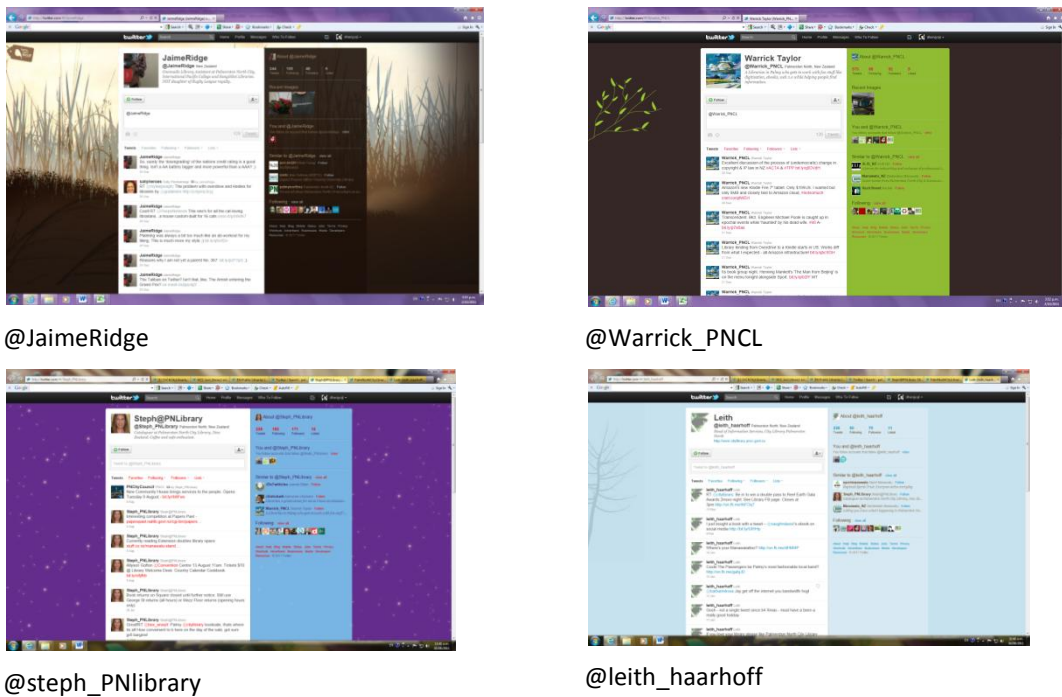
Overall, DPL seems to be providing the least personal experience for their users. PNCL and WCL seem to be somewhat personal, providing real names rather than just the library name for the users in some forms of SM. CCL includes images and initials on their main Twitter page, but the content is impersonal because it is cross-posted from their blog. Additionally, the library logo is used as the Twitter avatar, just as it is on the other three Twitter feeds.

Determining the level of personal information and opinions in a post is difficult if the identity of the person posting is unknown.

**Figure 8: Library Twitter feeds - @ChristchurchLib, @wcl\_library, @dnlibraries and @pncitylibrary**



**Figure 9: Twitter feed for other Twitter users who have obvious links to PNCL**





@JDsTwitticles

Each of the libraries has a Twitter feed linked to the main library. However, Christchurch has photos and initials of the people who are Tweeting (see Figure 6, upper left). This seems to be a deliberate effort to be more ‘real’ and, if included in a SM policy, would give evidence for the strategic use of SMO and best practice. However, the Tweets do not always include these initials.

WCL and PNCL have Twitter feeds that are linked to the library, usually with the library mentioned in the user’s profile. CCL and DPL only have the organisational feed. This seems to affect the extent to which the Twitter user feels comfortable in posting their own opinions and Re-Tweeting links to items which demonstrate interests or hobbies. Both Twitter users (@JaimeRidge and @Warrick\_PNCL) include items of individual interest on their Twitter feeds and have personalised their Twitter page.

## 8.5 APPARENT PURPOSES OF LIBRARY USE OF SM

**Table 28: Use of SM for promotion of library events, services and items**

	Wellington	Palmerston North	Christchurch	Dunedin
Percentage of FB posts promoting library events/activities	69.23%	40.00%	25.17%	41.18%
Percentage of Tweets promoting library events/activities	40.70%	42.86%	17.53%	38.71%
Percentage of blog posts promoting library events and activities	89.74%	0.00%	39.13%	NA

The level of promotional material on each of the SM platforms is somewhat similar for PNCL, DPL and CCL. It is notable that PNCL is consistent across all three platforms, since they are not cross-posting. It would be worth looking at their blog output in a year's time, since they have just re-launched their website and blog with a very different look and level of interactivity. WCL is more haphazard in the level of promotional content, but this is consistent with the other information gathered. The use of Twitter shows lowest amount of promotional activity and therefore the highest level of 'authenticity' or use of SM to converse with their users, rather than simply broadcast events, services and catalogue items. Likewise, their Twitter feed exhibits a high level of Generosity, a good Signal to Noise ratio and conversation occurring. WCL seem to be using Twitter the most effectively of all three tools, with the purpose of boosting 'digital dialogue'.

CCL scores are very low because of the conversational tone of their blog posts, which are then cross-posted to other SM. The library is using 'soft sell' techniques, making a promotional item sound conversational. These were not classified as 'promotional'. For example, a blog post might read 'Good to see people at X branch using the online database!' While not specifically using an imperative to encourage the use of the online database ('Check out the new online database.'), the post certainly raises awareness of it.

All of the libraries seem to be using SM to promote or 'broadcast' library events, activities and resources. This demonstrates that a traditional advertising mind set is still prevalent amongst these New Zealand public libraries.

Inaccuracies may be attributed to the subjective nature of determining whether or not a Wall post, Tweet or blog post was 'promotional'. If this study were repeated, a tighter definition of 'promotional' would be needed.

## **9 LIMITATIONS**

- Time meant that a very narrow snapshot of the libraries' activities could be examined and that not every aspect could be examined in detail.
- Month chosen coincided with school term break and public holidays which could have affected the frequency and content of posts.
- Limited library statistics for SM tools, such as DPL blog.
- Numbers of users able to be identified was, in the end, quite small.
- Christchurch earthquake may have affected number of and types of posts from CCL.
- Examining interactions, rather than unique users, could distort data.
- Certain data about users was unavailable outside the organisation.
- Difficulty in identifying person behind comments/posts.
- Staff contributions to 'digital dialogue' obscured user information.
- Twitalyzer needed to be set up before study began.
- Human error in calculation of quantitative data.
- Access to past Tweets.
- Measuring number of Followers or Fans was completed at a later date than other data collected.

This research has not addressed the idea of repeat customers or interviewed library users who use SM to communicate with the library. These are additional ways of proving the effectiveness of SM in creating relationships between organisations and customers, but were outside the scope of this study.

## **10 DISCUSSION**

Social media optimization (SMO) was used in this study to evaluate the use of SM by four New Zealand public libraries to enhance the relationship between the library and its users. It also was used to determine the level of strategy in the implementation of SM. Bhargava (2006) defined SMO as a way to 'implement changes to optimize a site so that it is easily linked to, more highly visible in social media searches on custom search engines (such as Technorati),

and more frequently included in relevant posts on blogs, podcasts and vlogs [blog posts using video]'. All of the libraries have used SM in ways that would enable their content to be linked to, but measuring visibility and inclusion on outside websites was not measured in this study.

The SM actions of these libraries were measured against the rules of SMO, adapted for libraries. This study found that each of the libraries seems to be optimising aspects of their SM use, but not all of it. PNCL is the most authentic; WCL is the most Generous; DPL is effective at using Twitter. CCL has strengths in several aspects of its SM use, especially in the combination of face-to-face and online work for the CCL Kids blog.

#### PARTICIPATE

All of the libraries are posting on Twitter and Facebook, and three of them are posting on their blogs. Because these posts have URLs, this content is shareable. In addition, all four libraries have a "Share this" button on their pages. Each seems to be deliberately encouraging their users to re-distribute the content.

#### KNOW YOUR TARGET AUDIENCE AND REWARD ENGAGEMENT

Making content relevant to users seems not to be a focus for any of the libraries. Although a rough description of each library's target audience is possible from this study, there is little evidence that the libraries know which of their users are using SM to communicate with them. A very small number of any of the posts are directed specifically to groups of users or personalised. There is little explicit evidence that the libraries are aware of their target audiences. In response to certain comments, all of the libraries have replied with specific information for their customers. However, none of them have posted items directly addressing a segment of their target audience. In this regard, the libraries seem unaware of those that are using SM to communicate with them and of their interests. Only PNCL seems to respond directly to their users Facebook comments. They seem to know their users the best and present themselves the most authentically.



## EFFECTIVE USE OF SOCIAL MEDIA

The libraries vary in their effective use of SM. On Facebook, WCL is the least responsive, posting infrequently, impersonally and without response to users. DPL is much more attentive, posting infrequently, but responding to the users who post. However, there is a significant time lag in their responses, which may be affecting their relationship with the users. PNCL and CCL are the most responsive in their Facebook use. The ratio of library to user posts for CCL, however, is heavily weighted towards the library, a pattern repeated in all of the SM use by CCL. To the few users that do post on the CCL Facebook page, the library is quite responsive. PNCL is the most authentic and responsive in their interactions, posting infrequently, but replying promptly and directly. The libraries seem to be using Facebook the least effectively of the SM tools, possibly because there is not yet much research on its use for organisations.

Twitter is the second most effectively used SM tool. However, Stuart (2010) argues that libraries need to go beyond 'broadcasting news and information about the library and telling users about library resources' (p. 47), and New Zealand public libraries seem to still be doing just that and not much more. CCL is the least personal in their approach to using Twitter, neither expressing personal opinions nor responding to specific audience segments. PNCL responds to their Tweets, but there are still very few comments being directed at the library through Twitter. DPL and WCL seem to be responding directly to Tweets aimed at the library, and in several instances engage in direct conversation with an individual user. Stuart (2010) advises that following library users can help the library get to know them better, enabling focused comments and suggestions to be made. There is little evidence of this happening.

Blogs are the most effectively used tool in this study; they are also the oldest. Kercher (2008) argued that blogs needed to be visible, updated frequently, used for conversation and evaluated for effectiveness. The four libraries in this study have visible blogs and WCL and CCL have blogs which are frequently updated. However, only CCL is receiving and responding to comments regularly. Although in-house evaluations of blog effectiveness were

not examined, the CCL Kids blog seems to be the best example of an effective use of a blog. The library combines community outreach and education, conversation and user rewards to effectively engage its target audience. Not only are they incorporating Kercher's work, but also Bhargava's ideas of SMO, to effectively market the library by building relationships with library users.

In blog use, both PNCL and DPL are the least active and therefore their data was eliminated from this study. WCL posts frequently on all four of the blogs, but discourages Comments, especially on the News blog where the Comment function is usually turned off. CCL posts frequently on both of their blogs, but the CCL News blog follows the pattern of CCL's use of other SM tools. The library posts frequently, users respond and some of their comments are addressed. Few blog posts are directed at a particular segment of the target audience. On the other hand, the CCL Kids blog consistently posts items of particular interest to their target audience, has the users posting and responds quickly and rewardingly to users' comments. CCL Kids blog activity represents about 50% of the total CCL blog traffic.

The Klout measurements that Pewhairangi publicised earlier this year (2011b) seem to be based mostly on the "Noise" or the amount of Facebook posts or Tweets per day. Since Christchurch Library cross-posts from their blogs, they have quite a lot of "Noise", but they ReTweet rarely, which means that they have a low "Generosity" measure. WCL and DPL are consistent in thanking their users and replying in a timely manner to their posts. PNCL is very consistent and a significant percentage of the suggestions made to the library have been implemented and very quickly. CCL is often slow to respond to Facebook and Twitter updates and in one case, completely ignored a compliment given to the library by a user on Facebook. They are much more responsive to the comments on the blog.

#### STRATEGY OR METHOD?

All of the libraries seem to have some strategy in their SM use. However, not all of the libraries have unified their methods across all three tools. DPL broadcasts from Facebook and augments the posts on Twitter. Their blog has

yet to be incorporated into the SM use. However, DPL's 'Generosity' is minimal. Out of 62 Tweets, they have Re-Tweeted only one item from a user in April and an additional two from Dunedin City Council. Their use of Twitter is mostly for broadcasting.

CCL and WCL have chosen to cross-post to other SM from their blogs via 'high tech' platforms (Tweetdeck or HootSuite) to make the work more efficient, but with an unexpected result. HootSuite and Ow.ly are parts of the same company/service and allow the library to 'social share' across multiple networks or 'post messages simultaneously across channels' (<http://hootsuite.com/>). However, HootSuite seems to have a limiting factor in that it does not alert the user to comments made on the items shared from Twitter or a blog to Facebook. This means that if someone makes a Comment or Likes a Comment, the library cannot discover or react to this in a timely fashion unless they have someone monitoring Facebook separately defeating the purpose in sharing across SM.

Both WCL and CCL have missed compliments and left users with no Reply or recognition. On the other hand, the only post by CCL that did not use HootSuite was Liked by several users, commented on by one of those users and Replied to by the library within an hour of the comment being posted. The user also Liked the library response. This interaction stood out in terms of timeliness, presence of CCL in parts other than the original post and in the length of the 'conversation'. This pattern was evident frequently on PNCL's Facebook page and seems to be more indicative of 'digital dialogue'. Although HootSuite/Tweetdeck is an efficient way to put content on all three platforms, it prevents true conversation from taking place.

PNCL was the library with the least obvious pattern, but the greatest authenticity. Their approach seemed the most haphazard as they post on every SM platform with unique posts. No single person or team seemed to have responsibility for PNCL posts, as evident in the numerous librarians with a connection to PNCL in their Twitter usernames. However, although they often had the least library posts on the SM platform, PNCL had the most Fans/Followers, the quickest response times to user comments, and the most

number of suggestions implemented, once within an hour of the suggestion being made. This was consistent across all of the data.

Most of the libraries seem to have a method behind their use of SM based on a traditional paradigm of marketing, in which media is used predominantly for 'broadcasting', rather than creating 'dialogue'.

WCL took up SM the earliest of all the libraries, and this seems to have affected their implementation of SM. Like many early adopters, they have stumbled across a pattern of behaviour that works for the organisation, but seem not to have had the chance to apply strategic thinking to the use of SM. PNCL has taken up SM enthusiastically, but not very strategically. DPL is taking it up slowly, experimenting with different techniques for maximising SM in marketing the library through relationship building. CCL has taken SM up the most recently and is in the process of having establishing a SM policy. Their use of library blogs is the most effective at creating conversations and relationships, and this tool has been around the longest. This may be the benefit of being a later adopter of SM, allowing the incorporation of SMO principles in a SM strategy.

Pewhairangi (2011) concludes that her results are 'suggesting that most libraries have dipped their toes into the water without an overall strategy, implementation plan, or monitoring process.' The results of this study echo hers. SMO has elements which are obviously useful, but none of the libraries examined seem to be using it or its principles to guide SM policy.

New Zealand public libraries have begun to use SM to interact with their users, but not consistently. Before establishing SM presence, libraries should decide on their purpose for using SM, establish SM policy based on the principles of SMO and ensure on-going evaluation of the effectiveness of SM use through 'listening' techniques.

## 11 CONCLUSIONS

The principles behind SMO are useful for libraries considering the use of SM to develop their relationships with their users. Used as the base for SM policy these guidelines can strengthen existing relationships with people who use SM to interact with their library.

This study found that New Zealand public libraries are at the beginning of their use of SM and need to develop a more strategic approach. Using SM to communicate with users can be effective as long as the purpose of creating 'digital dialogue' is kept in mind, rather than the traditional marketing method of 'broadcasting'. Libraries intending to use SM to encourage customer relationships should develop a clear SM policy.

Each of the libraries studied had strengths and gaps in their employment of SM to communicate with their users. All of them needed to employ their knowledge of their target audience in communicating with specific users and to be more personal in their approach. It would be worthwhile comparing the organisation's Twitter metrics with metrics for librarians who Tweet under their own name.

The most significant findings upheld a connection between SMO rules and enhanced relationships with users. For example, being authentic and being responsive to users is significantly more powerful in creating relationships than 'broadcasting'.

As libraries develop SM policy, it will be vital to monitor and measure the effectiveness of SM use. It is also important that the libraries are flexible enough to use the information gained from SM metrics to change to a more effective approach. By libraries measuring and evaluating their own SM use, additional information should be available which addresses the extent to which users are promoting the library by passing on information posted by the library. Measurements of the level of conversation and interactivity over time should indicate that using SMO guidelines make the use of SM more successful.

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# 13 APPENDICES

## APPENDIX A: DATA COLLECTION TOOL

Research Question	SMO rule for public libraries		What will be measured?	Type of analysis
Evaluation of library use of SM, according to SMO rules (adapted for libraries).				
1. To what extent is the library 'participating' in online discussion or 'digital dialogue'?	1. Participate in the online conversations by creating shareable content and making sharing easy.	Participate	How many comments/blogs/tweets per day?	QUAN Counting
		Create shareable content	Is there cross-posting from Twitter to FB to blog? Is the content accessible in multiple ways? Are there links to Slideshare or Vimeo or YouTube content?	QUAL Extent that content is shared/shareable (Y/N for each possibility)
		Make sharing easy	Are there Add This buttons on the blog, website Is the content shareable through shortened URLs? Is the content shareable through copying and pasting a link?	QUAL Range of 'easy'-ness defined based on possible ways of sharing? (Y/N for each possibility.)

Research Question	SMO rule for public libraries		What will be measured?	Type of analysis
2. Who is using SM to communicate with the library and how responsive is the library in these interactions?	2. Know your target audience.	Target Audience	What are the characteristics of the target audience?	QUAL Definition created of TA
			What are the demographics of the library users who are using SM?	QUAL Age, gender, education, employment status
What are the interests of the target audience?	QUAL Hobbies, interests, occupation (field)			
What is the geographical distribution of the people who are using Facebook/Twitter/blog to communicate with library?	QUAL locations			
	3. Reward engagement and helpful, valuable users.	Responsiveness to users	For any contests/polls, number of submissions?	QUAN Counting
			Are suggestions implemented?	QUAN Counting
			Volume of customer feedback. (Of the comments, how many of them can be counted as feedback?)	QUAN Counting
			How often is appreciation expressed?	QUAL Frequency described
			How often does the library put up links to users' stuff (blogs, wikis, websites, etc.)? How often for other organisations?	QUAL Frequency described
How many Twitter Followers does the library have?	QUAN Counting			



Research Question	SMO rule for public libraries		What will be measured?	Type of analysis
2. Who is using SM to communicate with the library and how responsive is the library in these interactions?	3. Reward engagement and helpful, valuable users.	Responsiveness to users	'Generosity' – ratio of Re-Tweets to Tweets	QUAN Counting
			What is the ratio of 'Signal' (Tweets with URLs, hashtags/#, @ symbol) to 'Noise' (all Tweets)?	QUAN Counting
			How many Replies to Tweepers (Twitter users) are there?	QUAN Counting
			Number of Facebook Fans?	QUAN Counting
			How many Likes on library Wall posts?	QUAN Counting
			How many Comments on library Wall posts?	QUAN Counting
			How many user posts on library Wall?	QUAN Counting
			How many Replies?	QUAN Counting
			For each socially posted event, how many Comments are there? Per socially posted event, Responses are there? Attending or not attending or maybe are all considered responses.	QUAN Counting QUAN Counting
3. How 'authentic' are these interactions and what effect does this authenticity seem to have on the interactions?	4. Be real/ authentic.	Authenticity	Are the posts done under a person's name?	QUAL Level of 'authenticity' based on characteristics (Y/N for each possibility)
			Are there photos of the person blogging/posting/Tweeting?	
			Do the comments and posts include personal opinions and interests?	
4. What are the apparent purposes of the library use of SM?			Do more than half the posts go beyond promoting library events and activities?	QUAN Counting

APPENDIX B: FACEBOOK USERS

	PNCL Likes	PNCL Comments	Wellington Likes	Wellington Comments	CCL Likes	CCL Comments	Dunedin Likes	Dunedin Comments
Number of library Fb posts	9	9	39	39	140	140	17	17
Total number of responses	15		6		174		23	
Lib employees	3		1		14		0	
Number of user Likes	9	NA	5	NA	127	NA	17	NA
Number of user Comments	NA	3	NA	1	NA	33	NA	6
Organisation	0	1	0	0	4	1	0	0
local event related	NA	0	NA	NA	0	NA	NA	NA
local resource	NA	1	NA	NA	2	1	NA	NA
local library	NA	0	NA	NA	1	NA	NA	NA
book related	NA	0	NA	NA	1	NA	NA	NA
writing related	NA	0	NA	NA	0	NA	NA	NA
technology related	NA	0	NA	NA	0	NA	NA	NA
political	NA	0	NA	NA	0	NA	NA	NA
sports	NA	0	NA	NA	0	NA	NA	NA
other library	NA	0	NA	NA	0	NA	NA	NA
local city council	NA	0	NA	NA	0	NA	NA	NA
other	NA	0	NA	NA	0	NA	NA	NA

	PNCL Likes	PNCL Comments	Wellington Likes	Wellington Comments	CCL Likes			CCL Comments			Dunedin Likes			Dunedin Comments		
People																
Male	0	0	1	1	39			16			4			5		
Female	10	5	4	0	84			16			13			1		
Unknown	0	0	0	0	0			0			0			0		
Age range						M	F		M	F		M	F		M	F
>/= 20	0	0	0	0	28	26	2	2	2	0	0	0	0	0	0	0
20-25	0	1	0	0	1	0	1	1	0	1	1	0	1	0	0	0
26-30	3	1	0	0	16	1	5	2	0	2	1	0	1	0	0	0
31-35	5	2	3	0	19	3	6	6	4	2	3	2	1	1	1	0
36-40	2	0	0	0	10	4	7	8	3	5	1	0	1	0	0	0
41-45	0	0	2	0	10	1	9	1	0	1	8	1	7	5	4	1
46-50	0	0	0	0	2	0	2	1	0	1	1	0	1	0	0	0
51+	0	0	0	1	13	2	1	7	5	2	0	0	0	0	0	0
Unknown	0	1	0	0	24	2	2	4	2	2	2	1	1	0	0	0
Occupation																
Employed	2	2	1	1	48			17			5			1		
Student	2	0	0	0	3			2			0			0		
FT parent	0	0	0	0	2			0			0			0		
retired	0	0	0	0	8			1			0			0		
Unknown	6	3	4	0	62			12			12			5		

	PNCL Likes	PNCL Comments	Wellington Likes	Wellington Comments	CCL Likes			CCL Comments			Dunedin Likes			Dunedin Comments		
Field(s)																
technology	2	1	0	0	3			4			0			0		
art/creative	0	0	0	0	8			1			0			0		
libraries/archives	0	0	1	0	11			6			1			0		
writing	0	0	0	0	0			0			0			0		
publishing	0	0	0	0	0			0			0			0		
other	0	1	0	1	26			7			4			1		
Entrepreneurial/S elf-employed	0	0	0	1	12			2			2			0		
Highest level of education																
secondary school	3	2	0	0	42			3			0			0		
tertiary	4	0	2	0	16			6			1			1		
post-graduate	1	1	1	0	10			4			4			1		
unknown	2	2	2	1	55			19			12			4		
Location																
same city/region	9	4	5	0	70			25			16			6		
in rest of NZ	1	0	0	1	38			0			0			0		
Australia	0	0	0	0	2			0			0			0		
USA	0	0	0	0	0			0			1			0		
Canada	0	0	0	0	0			0			0			0		
UK	0	0	0	0	1			0			0			0		
Other	0	0	0	0	1			4			0			0		

	PNCL Likes	PNCL Comments	Wellington Likes	Wellington Comments	CCL Likes		CCL Comments		Dunedin Likes		Dunedin Comments
Unknown	0	1	0	0	12		3		0		0

### APPENDIX C: TWITTER USERS (TWEEPS)

	PNCL	JaimeRidge	Warrick_PNCL	Wellington			Christchurch			Dunedin		
Number of library Tweets	14	18	21	172			97			62		
Number of Tweets directed @ a Tweep	2	4	4	32			14			13		
Organisation	1	1	2	16			10			3		
local event related	1	0	0	0			0			0		
local resource	0	0	0	1			0			1		
book related	0	0	1	3			0			0		
writing related	0	0	0	0			6			0		
technology related	0	0	0	7			0			0		
political	0	1	0	0			1			0		
sports	0	0	1	0			0			0		
local city council	0	0	0	3			3			2		
other	0	0	0	2			0			0		
People												
Male	0	3	2	12			3			1		
Female	1	0	0	4			1			9		
Age range					M	F		M	F		M	F
>/=25	0	0	0	0	NA	NA	0	NA	NA	0	NA	NA

	PNCL	JaimeRidge	Warrick_PNCL	Wellington			Christchurch			Dunedin		
26-30	1	0	0	9	6	3	2	0	2	0	NA	NA
31-35	0	2	0	4	4	0	0	NA	NA	8	0	8
36-40	0	1	1	0	NA	NA	1	0	1	2	1	1
41-45	0	0	0	3	3	1	0	NA	NA	0	NA	NA
46-50	0	0	1	0	NA	NA	0	NA	NA	0	NA	NA
51+	0	0	0	0	NA	NA	1	1	0	0	NA	NA
Occupation												
Employed	1	3	2	16			3			10		
Student	0	0	0	0			1			0		
Field(s)												
technology	1	3	2	16			0			1		
libraries	0	1	0	1			0			0		
writing	0	0	0	0			2			0		
publishing	0	0	0	0			0			6		
other	0	0	0	0			2			3		
Entrepreneurial/Self-employed			1	6			2			7		
Highest level of education												
secondary school	0	0	0	0			0			0		
tertiary	1	2	2	14			3			8		
post-graduate	0	1	0	2			1			2		
unknown	0	0	0	0			0			0		
Location												
same city/region	1	0	0	9			2			9		
in rest of NZ	0	1	1	1			1			1		

	PNCL	JaimeRidge	Warrick_PNCL	Wellington			Christchurch			Dunedin		
Australia	0	2	0	1			1			1		
USA	0	0	0	2			0			0		
Canada	0	0	1	0			0			0		
UK	0	0	0	0			0			0		
Other	0	0	0	4			0			0		

#### APPENDIX D: USERS COMMENTING ON LIBRARY BLOG

	DL	PNCL	WCL	WCL News	WCL Teen	WCL Business	WCL Kids	CCL	CCL News				CCL Kids			
Number of library posts		1	79	35	25	5	14	92	52				40			
Posts by users													7			
Number of Comments	NA	0	7	5	1	1	0	174	111				65			
comments by library staff/library	NA	0	1	1	0	0	0	85	69				19			
Actual number of comments	NA	0	6	4	1	1	0	89	42				46			
Male	NA	NA	1	1	0	0	NA		13				18			
Female	NA	NA	1	1	0	1	NA		27				23			
Unknown	NA	NA	4	2	1	0	NA		2				5			
Age range	NA									M	F	?		M	F	?
>/= 24	NA	NA	0						2	0	2	0	33	18	15	0
26-30	NA	NA	0						0	0	0	0	0	0	0	0
31-35	NA	NA	0						2	0	2	0	2	0	2	0
36-40	NA	NA	1						5	0	5	0	0	0	0	0

	DL	PNCL	WCL	WCL News	WCL Teen	WCL Business	WCL Kids	CCL	CCL News				CCL Kids			
41-45	NA	NA	0						1	1	0	0	4	0	4	0
46-50	NA	NA	1						1	0	1	0	0	0	0	0
51+	NA	NA	0						10	3	7	0	2	0	2	0
Unknown	NA	NA	4						21	9	10	2	5	0	0	5
Employed	NA	NA	2						20				8			
Student	NA	NA	0						2				33			
Unknown	NA	NA	4						22				5			
Field(s)																
art	NA	NA	0						3							
technology	NA	NA	0						0				0			
libraries/archives	NA	NA	0						1				0			
publishing	NA	NA	0						1				0			
writing	NA	NA	1						4				8			
books	NA	NA	0						0				0			
teaching	NA	NA	0						0				5			
other	NA	NA	2						8				0			
Unknown	NA	NA	4						22				5			
Highest level of education																
secondary school	NA	NA	0						2				0			
tertiary	NA	NA	0						5				6			
post-graduate	NA	NA	0						8				2			
Unknown	NA	NA	6						27				5			
Location																
same city/region	NA	NA	1						15				33			



	DL	PNCL	WCL	WCL News	WCL Teen	WCL Business	WCL Kids	CCL	CCL News				CCL Kids			
in rest of NZ	NA	NA	1						3				7			
Australia	NA	NA	0						1				0			
USA	NA	NA	0						0				0			
Canada	NA	NA	0						0				0			
UK	NA	NA	0						1				1			
Other	NA	NA	0						2				0			
Unknown	NA	NA	4						21				5			
Youth bloggers														M	F	?
														5	2	1
Youth blog posts with no comments														3	2	0
Total youth blog posts for April													12	8	4	1