

The Impact of Digital Reference on the Delivery of Reference in New Zealand Public Libraries

by

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Abstract

This study looks at digital reference services in New Zealand public libraries to find out what types of services are being provided and what impact they are having on traditional reference services.

A survey was sent to twenty-seven selected public libraries with a further sixteen selected libraries added after a low response rate from the first group, to collect information on their digital reference services. The libraries included large, medium and small and were selected from all areas of New Zealand. A questionnaire was used to collect the information and the data was statistically analysed.

All large and the majority of medium selected libraries are providing a digital reference service in the form of email or web form. Four of the large libraries are participating in AnyQuestions – a virtual reference service for New Zealand school children, and one large library has their own virtual service.

The low response rate and deficiencies in the survey design have resulted in inconclusive results for this study. We know libraries are providing digital reference services and we know something about how the services are provided, but it is still unclear whether these services are having an impact on traditional reference services.

1. Introduction

The world of library reference is changing as digital technologies give customers more choices as to how to use the reference services offered by their library. Librarians began reacting to the decline in reference enquiries by looking at other ways of offering reference services. People were already using the Internet to find their information, so it seemed the obvious place for libraries to have a presence. Many began developing websites to make the library accessible in everyone's home, work or study area as well as in the library itself.

These digital reference services began about a decade ago, informally at first, with email addresses being used to answer questions. Special purpose email addresses and web forms were introduced as well as other technologies such as virtual. Finally, software was developed that was specifically designed for reference with many features unique to the library domain (Janes 2004, 1).

In New Zealand libraries, digital reference is relatively new. The New Zealand government's new Digital Strategy announced in June 2005 is the future for information and communications technology and is timely for this research project on digital reference. The National Library of New Zealand has been working closely with the Ministry of Economic Development, other government departments and Local Government New Zealand, and consulting with the library and information sector, to create a digital future for all New Zealanders. It will allow the library and information community to connect New Zealanders with high-quality information for all aspects of their lives.

2. Aims and Purpose of the Study

2.1 Problem Statement

Digital reference services are being provided in libraries overseas with varying degrees of success. There has been considerable literature written about these services in the United States and the United Kingdom since the mid-1990s, but there is very little on digital services in New Zealand libraries, and how they are affecting traditional reference services.

What digital reference services, if any, are New Zealand public libraries providing, and what is the impact on their traditional reference services?

2.2 Objectives

- To discover what digital reference services are being provided in New Zealand public libraries, if any.
- To develop an understanding of how these services affect the delivery of traditional reference services.
- To discover what impact these services have on public library reference staff.
- To provide information on digital reference that could be used for future planning and development of digital reference services in New Zealand public libraries.

2.3 Research Questions

- What types of digital reference services are the sample public libraries providing?
- Why did they choose this type of digital reference service for their library?
- Is this digital reference service being provided in collaboration with other libraries?
- How has the staff coped with the changes to the delivery of reference services?
- Are the sample libraries providing training in the digital technologies?
- What impact are the digital reference services having on their traditional (face-to-face and telephone) reference service?
- What plans do they have for future digital services, including policy and strategic planning in this area?

2.4 Definitions

The terminology for digital services can cause confusion. For this report the following distinctions are made:

- **Digital reference:** any reference over the Web, including e-mail, web form, or virtual. (Berube 2004, 30)
- **Virtual reference:** any real-time reference on the Web, using chat or video.
(Berube 2004, 30) Real-time reference means the reference enquiry happens immediately, in a similar way to answering a reference enquiry at the reference desk. The enquiry is immediately received and responded to without any time delay.

- **Integrated digital reference:** any combination or all of the digital reference service types. (Berube 2004, 30)

3. Literature Review

Digital reference has been in existence for about a decade. In that decade, libraries have had to change the way they offer reference services. With technology and specifically the Internet becoming increasingly important, people began moving away from libraries to find their information. There is recorded evidence that reference desk enquiries have been declining (Coffman and Arret 2004a, Jane and McMillan 2003, Moyo 2002, Lipow 1999), as an increasing number of people began using the digital environment to find their information and to conduct their library research without physically entering the library. Librarians responded by providing online reference services beyond the physical library. Online reference began with answering questions by email, then developing web forms accessed through the library's website and now includes virtual or chat reference. Librarianship is "a profession in rapid and profound transition, struggling to understand what best to do as the information environment continues to change" (Janes 2002, 561). For this reason, libraries have begun to look at their delivery of reference and many are now including integrated digital reference services. The literature has reported widely on how libraries have implemented these services.

The purpose of this literature review is to see how digital reference services are affecting traditional reference services in public libraries. Because academic libraries were often the first types of libraries to offer digital reference services, they are important for this study and are included.

3.1 Early Digital Reference

Anne Lipow (1999) has written much about reference services in the digital environment. In an early article she reports on the crisis facing reference librarians in the 1990s and their efforts to become familiar with Internet resources. At that time, librarians were divided on how to adapt reference work, with some believing search engines would become a substitute for reference librarians, and others believing the need for reference librarians was greater as a filter for quality information. Users began getting their information from the Internet, often wanting the information “now”. Lipow states “libraries need to become more convenient to the users by offering reference services remotely.” (Lipow 1999, 51) By 2000, libraries were beginning to make available quality reference resources on their web pages, but this didn’t allow for the user to ask questions if they were unable to find the information. To assist with this, some libraries began providing email or web form links on their website providing a means for users to ask questions. This has made asking questions at the library just as convenient for the user as using a search engine (McGlamery and Coffman 2000).

As Lipow says, “library reference service will thrive only if it is so impossible to ignore – so “in your face” – that to not use the service is an active choice.” (Lipow 1999, 52)

A significant study by Tenopir and Ennis (2002) was conducted over a decade 1991-2001 providing insight into the speed of change that has occurred in academic library reference services. The study consisted of four surveys sent to one hundred and twenty one library members of the Association of Research Libraries in the United States (US). Response rates varied and some questions were added and changed each year as the technology changed, but most questions were kept consistent to allow a comparison over time. The major changes in digital resources were from CD-ROMs in the 1990’s to

the Internet by the end of the decade. By 2001, all but one library was offering email reference and more than 20% offering virtual reference. This is one of a number of studies that show the effect the digital revolution has had on library reference services, not only in the way the service is offered, but the types of resources available and the expectations of users.

Digital reference services in academic libraries are analysed in Bao's 2001 survey of one hundred and forty three United States academic institutions. This examined the status of digital reference services provided through the institutions' libraries. Bao (2003) accessed each institution's library home page and found sixty-seven libraries offered some form of digital reference and seventy-six did not. The web form and email were the preferred method, with one library providing a reference chat room. Response times for many libraries were within twenty-four or forty-eight hours. One significant result, not mentioned elsewhere in the literature, was that thirty-five of the libraries considered their digital reference service important enough to have a link on the first page of the library home page.

This survey was undertaken in the early stages of digital reference growth and development. Later surveys show a higher user of digital reference services. Jay and Webber (2005) undertook a survey in 2003 of fifty public library authorities in England investigating the use of the Internet for reference enquiries. A 60% response rate was received with all respondents using email, four using virtual reference and two using video conferencing for reference enquiries. Although not many of the libraries were using virtual reference or video conferencing, there was a high awareness by the librarians of these technologies.

3.2 Reference Services

Digital reference services have changed the way libraries are offering reference. They must now accommodate their digital reference service, while still providing a traditional reference desk for face-to-face reference questions. The debate in the literature has included whether to have the digital reference service at the reference desk or in a separate area.

Q&NJ, a virtual reference service provided by multiple libraries across the state of New Jersey in the US, has the virtual reference desk away from the physical desk. This is to avoid distractions and interruptions. (Sweet, Lisa, and Colston 2003). Other virtual reference services do operate from a traditional reference desk such as Ask a Librarian Live at Austin Peay State University and Talk Now at Temple University in the US. They prefer this method, as it is more convenient for scheduling, there is proximity to the collections and back up from other staff. Also, because of staffing it can be difficult to offer a virtual reference service separately from the desk (Ronan 2003). But not all libraries have stayed with this method due to some of the issues mentioned earlier and many have moved away from the reference desk. A good compromise is the Lippincott Library at the Wharton School at the University of Pennsylvania in the US who provide their virtual reference service at the reference desk when it is quiet and move to a quieter location during busy hours (Ronan 2003). Breznay and Hass (2002/2003) discuss starting and operating a digital reference desk and state "most libraries have placed the virtual reference workstation in a separate area" (Breznay and Hass 2002/2003, 108). They agree with Sweet, Lisa, and Colston that by having the virtual reference service in a separate area, this allows the librarian to focus on the virtual

reference customer and not be distracted by people at the reference desk. Some libraries use this staff member to also answer email questions.

3.3 The Reference Interview

At the physical reference desk, librarians carry out a reference interview to understand the information needs of the customer. In the digital reference environment, the customers have the same information needs, but librarians are unable to conduct the same face-to-face interview.

Straw (2000) and Koyama (1998) discuss the reference interview in the digital environment and say there is a lack of visual, non-verbal and verbal cues normally available in face-to-face communication. This can make it more difficult for the librarian to understand the needs of the customer. Although physical cues are missing from a virtual reference interview, there can be positives to these interviews. They are often less formal and provide ways for those who are shy, prefer to remain anonymous and are inhibited by the library to be part of the reference process. Conducting a reference interview by email can allow more thought to go into the responses by the librarian to the customer's question. Written communication is the key element to a digital reference interview. In contrast, when discussing the Ask A Librarian service in the United Kingdom, Berube (2003) says, "email does not naturally lend itself to this type of interaction" (Berube 2003, 46). In the virtual environment, the reference interview can seem more intrusive, as the librarian needs to determine the exact information needs, levels of information needed and what sources the customer may have already used (Straw 2000; Koyama 1998). Berube (2003) believes in the virtual environment, librarians can build a rapport with their customers through communicating directly.

Clapp and Pfeil (2005) discuss the differences between the reference interview in the physical and virtual environment. In the physical environment, the interview can often take time to establish the needs of the customer; the virtual interview needs to be quick as there is an expectation from the customer that the answer will be provided quickly.

3.4 Types of Reference Questions

There is always going to be a need for traditional reference. The consistent finding on the type of questions best suited to be answered using digital reference is quick reference questions. Janes (2002) in his study on librarian's attitudes provides possible reasons for this, including libraries' policies, and the reference interview not well suited to research questions in a digital environment. Bao (2003) in his study of academic libraries says the policy statements indicate that only quick reference type questions are eligible for digital reference services. For research questions, customers are advised to come to the library. Studies by Desai (2003), comparing digital (Instant Messaging) and traditional reference in an academic library and Sweet, Lisa, and Colston (2003) looking at Q and A NJ say their services are being used for quick reference questions. Desai notes that in-depth research is not common online as it seems the customers regard digital reference as useful for quick reference only. Q and A NJ is specifically designed for quick reference and states they are designed to "provide fast answers to questions using information found on the Internet and in proprietary databases funded by the library" (Sweet, Lisa, and Colston 2003, 57).

The statistics from a study by Ciccone and VanScoy (2003) vary from much of the literature. They looked at the virtual reference service at North Carolina State University libraries and found customers were using the virtual reference as a replacement for in-

person reference and ask a variety of questions, including in-depth research. They considered the service to be an online reference desk. Another type of reference question briefly mentioned in the literature is homework questions. Clapp and Pfeil (2005) in their article on virtual reference in public libraries say "homework questions comprise the majority of virtual librarians' work" (Clapp and Pfeil 2005, 96). This is particularly noticeable in school holidays when the number of questions drops significantly. The school-age generation is more familiar with using the Internet environment than the physical public library. This is also shown in the study done by Kloss and Zhang (2003) of the Northeastern Ohio Library Association Regional Library System on real-time reference services where homework questions were the most common.

3.5 Librarians' Attitudes

Incorporating a digital reference service into a library has resulted in changes to many librarians' duties. Several studies have been undertaken looking at librarians' experiences, attitudes and feelings. One of the first comprehensive studies was conducted by Janes (2002) who surveyed librarians in 223 public and academic libraries in the US. They were asked about their experiences with and attitudes towards using a variety of technologies for receiving and answering reference enquiries. They were also asked about their feelings towards digital and print resources. The majority of librarians who responded (75%) said their libraries offered a digital reference service and the rest were planning to offer one in the near future. Because of the trend towards a decrease in the number of reference questions, the librarians were asked whether the numbers of reference questions at their library had changed with the introduction of digital reference.

There was no significant result, with just over half saying they were getting more or the same. An analysis showed that academic librarians said the numbers were decreasing and public librarians said their numbers were increasing. No explanation as to the reason for these results is suggested, although Janes does generalise by suggesting academic and public librarians come from different worlds and have different perspectives. This is also highlighted in the librarians' attitudes. Academic librarians were generally more negative finding digital reference more challenging, difficult and time consuming whereas public librarians found digital reference more interesting, fun, different and more effective. Public librarians report answering more questions using digital reference whereas academic librarians, despite having more technological experience, report answering fewer questions. This could explain the difference in attitudes with public librarians having more experience with digital reference questions. A public library study (Jay and Webber 2005) which primarily investigated the use of the Internet for receiving and answering reference enquiries, also asked the librarians how they felt the use of the Internet was impacting on library staff. They were predominantly positive and enthusiastic. This compares favourably with the attitudes of public librarians in Janes' (2002) study.

3.6 Staff Training

Training staff is essential to the success of a reference service. It is particularly important when introducing a digital reference service, as staff need to feel competent and comfortable when staffing a digital reference desk or service. Training is particularly important when libraries are providing a virtual reference service. Throughout the literature, there are basic elements common to most US library virtual reference training

packages. These include core reference skills, real-time chat techniques and software specific skills (Salem, Balraj, and Lilly 2004).

In their article on evaluating a digital reference programme at the University of California – Los Angeles (UCLA) Kawakami and Swartz (2003) state that individuals providing a digital reference service must be experienced in traditional reference service. Ronan (2003) suggests the core reference skills should include reference interviewing, communication skills and a good knowledge of print and electronic resources. Coffman (2003) concurs stating, “librarians need to be skilled at using electronic resources” (Coffman 2003, 59). Real-time chat is a new environment for many librarians and virtual reference can become more challenging (Salem, Balraj, and Lilly 2004). Other skills required for this environment can include good typing, using short and frequent messages, being friendly but professional and being able to efficiently multitask (Salem, Balraj, and Lilly 2004, Ronan 2003, Kawakami and Swartz, 2003). Software skills are critical when providing a virtual reference service. The software packages can vary and some may include co-browsing, which allows librarians and customers to navigate the same web pages simultaneously. Librarians need to become very familiar with all the features of the software outside of and in a live session (Coffman 2003). Breznay and Haas (2002/2003) and Coffman (2003) believe the librarians need to feel comfortable when using the software and should have lots of practice, so when they are helping customers they can concentrate on the reference service. There are a number of different ways of providing training. These can include on-site by the software vendor or online (Coffman 2003, Breznay and Haas 2002/2003). Libraries also run classes in-house that include training exercises followed up with practice with more experienced colleagues (Salem, Balraj, and Lilly 2004).

3.7 Collaborations

In 2004, in a two-part article, Coffman and Arret (2004a, b) looked back to the early days of digital reference in the US and discuss its rapid growth. Their focus is virtual reference and the conclusions make unsettling reading. They found these services were being under utilised and suggested ways of either making the service work better or closing it down. In contrast, Bailey-Hainer (2005) believes virtual reference is growing, particularly services being offered by state-wide (US) collaborations. Individual libraries often find providing a virtual reference service not cost-effective and they lack the staff resources. By working collaboratively, virtual reference is more viable and affordable because of shared costs and a higher question volume created by targeting a wider audience. She believes Coffman and Arret's grim picture is misleading. Their main focus is individual libraries in the US and they only touch on collaborations, but the literature provides evidence of collaborations, both national and international that are working successfully (Berube 2003 2004; Eastell 2004; Bailey-Hainer 2005; Sweet, Lisa, and Colston 2003).

Q and A NJ is a successful US collaboration provided by thirty-three libraries in New Jersey and available twenty-four hours a day seven days a week (24/7). Since its introduction in 2001, it has become a flourishing service averaging 2,500 sessions a month (Sweet, Lisa, and Colston 2003)

Public libraries in the United Kingdom (UK) have been using collaborative digital reference since the mid-1990s. Berube (2003, 2004) describes the Ask a Librarian and Ask Live! service that is delivered nationally and collaboratively in the UK by public libraries and provides an email, web form and virtual service. The Ask a Librarian service is an award-winning public library reference service available 24/7 and is

considered a model in information service delivery. Responses are guaranteed within forty-eight hours. The 2004 article also provides a general overview of collaboration including mention of libraries collaborating across time zones. Eastell (2004) discusses an international collaboration between Somerset Libraries Arts and Information Service (UK), Brisbane City Council Library Services (Australia), Richland County Public Library Service, Columbia, South Carolina (US) providing a twenty-four hour a day, seven day a week virtual reference service. 'Answers Now' began in 2002 and as of 2004, had received over 10,500 enquiries. The service is a good example of international collaboration enabling users to access a "real person" 24/7.

AnyQuestions is a collaborative online reference service for New Zealand school students enabling them to get direct, real-time, online help from a reference librarian in finding quality information for their schoolwork. The librarians work one-to-one with the students not just giving them the answers, but helping them find useful information sources and assisting them to gain the skills to undertake future searches and research effectively. Participants in the service include the National Library of New Zealand, several large public libraries and the Ministry of Education (AnyQuestions.co.nz).

Providing a point-of-need as well as point-of access service is vital to the delivery of information for libraries to remain relevant in this time of change. "With a growing technological expertise and skill, as well as strong networking tradition, public librarians are in an excellent position to provide leadership and guidance, not just in information discovery, but also in new methods of communication" (Berube 2004, 35).

4. Methodology

4.1 Population and Sample

There are 67 public libraries and their associated branches and mobile libraries in New Zealand. The Library and Information Service Aotearoa (LIANZA) usually divides the population into three levels. Level one libraries serve a population greater than 50,000, level two libraries serve a population between 30,000 and 50,000 and level three libraries less than 30,000.

To achieve a representative sample of libraries and because of the limited time, a structured sample of 27 libraries were surveyed:

- Three upper North Island libraries from each level.
- Three lower North Island libraries from each level.
- Three South island libraries from each level.

A further sixteen sample libraries were surveyed after a low response rate from the first sample group:

- One level one, two level two and three level three libraries from the Upper North Island.
- Two level one, one level two and three level three libraries from the Lower North Island.
- One level two and three level three libraries from the South Island.

For the purposes of this report, the level one, two and three libraries will be referred to as large, medium and small libraries.

4.2 The Survey Design

A survey was undertaken using twenty-seven selected libraries. Because of the low response rate, the survey was sent to a further sixteen selected libraries. The surveys were sent to the reference librarians (head of reference) or in the case of small libraries, to the library manager. In some cases, the survey was sent to the library manager or a generic library email address, as email addresses for the reference librarians were not available. The person receiving the survey was requested to pass it on, if there was someone more appropriate to complete it.

No personal names were used, as there were no individuals being surveyed, only the institutions. The institutions were not named and remained confidential between the researcher and supervisor.

The purpose of the survey was to collect from these libraries information on their digital reference services and the impact they are having on their traditional reference services.

For this study, the survey was the preferred type of data collection because:

- Fast turnaround time providing convenience and efficiency
- Cost effective
- Easy to administer
- Surveys are flexible

4.3 Instrumentation

The questionnaire is the survey instrument that was used to collect the data for this study. It was designed specifically for this research and self-administered, meaning the respondent administers the questions.

Advantages of questionnaires include:

- Practically no cost to administer
- The respondents can be polled with relatively little time input from the researcher
- Can send exactly the same questionnaire to a wide number of people
- Respondents need not be met in person. This can encourage more candid and honest responses
- Lack of interview bias
- Because all recipients reply to the same questions, there is reliability
- Useful if confidentiality required
- Respondents are free to complete the questionnaire at a time that suits them
- Speed of administration and analysis
- Suitable for computer based research methods

- Respondents could misinterpret questions
- Little flexibility for the respondent in the response format

(Clayton 1990, Alreck and Settle 2004, Creative Research Systems 2006, StatPac Inc 2006)

The questionnaire included multiple-choice questions with some requiring only a single response. The questionnaire was divided into six sections. The first dealt with the types of digital services being provided. The second section asked questions about the email and web form services and the third asked about virtual services. The fourth section covered questions concerning staff reactions, training, reference questions, statistics and collaboration. The fifth section asked if the libraries were planning to expand their digital services and what they were planning to include. The final section asked why the libraries chose the types of digital services they provide.

Included with the questionnaire was an information sheet explaining the study. The sheet described why the study was being done, told the respondents that they will be provided with a copy of the results, guaranteed that there is a policy for confidentiality and anonymity, and said the project had been approved by the Victoria University Informatics Human Ethics Committee.

At the end of the questionnaire were instructions for the respondents on how to send the completed survey back to the researcher.

The questionnaire and information sheet were composed using Microsoft Word and sent as an attachment to an email message. The respondents were asked to open the attachment, complete the questionnaire and attach the completed questionnaire to the reply. Alreck and Settle (2004) suggest using this method only in special circumstances, as there can be problems with the type of programme the recipients have to open the

attachment. The researcher decided, because of time limitations, the advantages – speed and virtually no cost - outweighed this potential problem and sent the questionnaire by email.

Once the questionnaire was sent to the selected libraries, there was a follow-up email with a copy of the questionnaire sent ten days later. Anyone who had not responded a week after the follow-up was sent another email reminder. This follow-up included another copy of the questionnaire and a message from the researcher.

The questionnaire was sent to the second group of selected libraries a week after the last follow-up of the first sample and included a due date of a week later. Because of the continuing low response rate, a follow-up was sent a few weeks later with a due date of the following week.

4.4 Validity

Before sending the questionnaires and to ensure validity, the survey was sent to a university librarian (a colleague of the researcher). The survey was completed and returned with useful suggestions being incorporated into the questionnaire that was sent to the selected libraries. For external validity, the project supervisor checked each stage of the study.

4.5 Data Analysis Procedures

When the surveys were returned, the date of receipt was recorded and a unique consecutive letter was assigned to each completed questionnaire. The questionnaires

were checked for accuracy, looking for such things as legibility and complete responses.

The number of questionnaires sent and the total received were entered into a Microsoft Excel spreadsheet and the response rate calculated. The response rates were also calculated for the different size libraries.

The data was entered into an Excel spreadsheet with totals and percentages calculated for all the libraries for each question and for the libraries by size for each question. The data was analysed to produce tables and graphs about the selected libraries.

5. Statement of Results

5.1 Responses

The following table summarizes the total number of survey forms sent and received by size of library and geographical area (Table 1).

Table 1. Responses received.

		Sent (1st group)	Sent (2nd group)	Total Sent	Received	Response Rate
Upper North Island	Large	3	1	4	3	75%
	Medium	3	2	5	1	20%
	Small	3	3	6	2	33%
Lower North Island	Large	3	2	5	1	20%
	Medium	3	1	4	3	75%
	Small	3	3	6	2	33%
South Island	Large	3	0	3	3	100%
	Medium	3	1	4	3	75%
	Small	3	3	6	0	0%
		27	16	43	18	42%

Table 2. Responses received by size of library.

Size of Library	Response Rate
Large	58%
Medium	53.85%
Small	22%

The response rate was disappointingly low. It may have been due to the time of year the surveys were sent out. November and December can be busy months for public libraries. It is also possible some libraries chose to ignore the survey or put it in the “to do later” basket. These are possible weaknesses with this sample and the method of distribution.

Replies were received from three libraries saying they would not be filling out the survey, as they don't provide a digital reference service. They were a medium and two small libraries. They are still included in Tables 1 and 2. The medium library did say they answer questions received by email, but don't receive many. Under the definitions, this is a digital reference service, as the questions are being received and answered electronically. However, because the survey was not completed, the information is not used in the analysis. One of the small libraries said they do provide a link on their website to AnyQuestions and databases such as EPIC (Electronic Purchasing in Collaboration). They also have a form for customers to suggest items for the library to buy.

Despite the response rate being low, responses were received from every group except one. The large and medium-sized libraries responded well, particularly in the South Island. The small libraries had the smallest response rate.

5.2 Results

Thirteen out of eighteen respondents (72%) reported that their library offers a digital reference service. The large and medium (except one) libraries that responded are all offering an email service (39% of the total services offered) with ten (30% of the total services offered) of those libraries also offering a web form service. None of the small libraries that responded are offering these services. Four of the large libraries provide virtual services by participating in AnyQuestions making up 12% of the total services offered, and one is offering their own service to their customers. This same library also offered electronic databases that included public access to databases on CD-ROM from the mid-1990s and mediated Dialog searching from the early 1980s.

The libraries that did not fill in the survey are included in Tables 3 and 4 as not providing any digital reference service.

Table 3. Number of libraries providing digital reference services

Email	Web Form	Virtual	Other	None
13	10	4	1	5

Table 4. Types of digital reference services by size of library

	Email	Web Form	Virtual	Other	None
Large libraries	7	5	4	1	0
Medium libraries	6	5	0	0	1
Small libraries	0	0	0	0	4

Survey participants were able to include multiple answers to the question shown in these tables.

Figure 1.

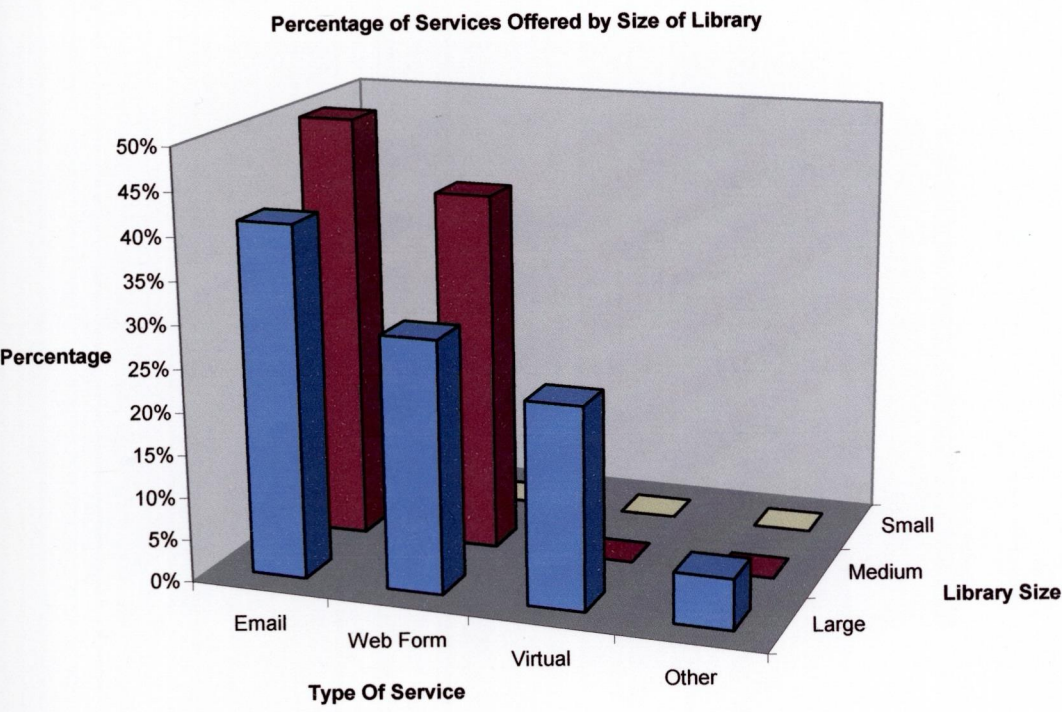


Figure 1 shows the medium libraries percentages are higher for email and web form services, as they are not providing any other types of digital services. The larger libraries have more of a spread over the types of digital services they are providing.

Among those libraries that are currently offering a service, most have been offering email and web forms for several years with participation in AnyQuestions more recently. Among those not offering a service (five respondents), three (60%) were planning to offer one either in the coming year or had no specific date. Two of these libraries were already offering an email service, so presumably are planning to offer other types of digital reference services. Two (40%) said they were not planning to offer a service, but one of those was already offering email and web form, so possibly interpreted the question as referring to other types of digital reference.

5.2.1 Reference Services

Email and web form enquiries are received into the library at a variety of places. Of the thirteen respondents, seven received the enquiries at the reference desk, six were received by the administration staff, and four by the reference librarian. Only one library used a dedicated staff member. Four other options included team leader research, Electronic Resources Librarian and the Systems Librarian. One large library has a special team for receiving and answering digital reference questions. Some libraries have the enquiries arrive at a central point such as administration and then passed on to the reference desk or reference librarian.

Table 5. Person/s who receives the email and web form enquiries.

Reference desk staff	Reference Librarian	Administration	Dedicated staff member	Other
7	4	6	1	4

Table 6. Person/s who receives the email and web form enquiries by size of library.

	Reference desk staff	Reference Librarian	Administration	Dedicated staff member	Other
Large libraries	4	2	4	0	3
Medium libraries	3	2	2	1	1
Small libraries	0	0	0	0	0

Survey participants were able to include multiple answers to the question shown in these tables.

Response times from the thirteen respondents for email and web form enquiries were fairly evenly divided between twenty-four (six libraries - 40%) and forty-eight (five libraries - 33%) hours. A smaller number (four libraries - 27%) included other options –

within a time agreed to by the customer, up to a week, varies from immediate to long-term. Two respondents included more than one answer to this question.

Table 7. Turnaround time for email and web form enquiries

24 hours	48 hours	Other
6	5	4

Table 8. Turnaround time for email and web form enquiries by size of library

	24 hours	48 hours	Other
Large libraries	4	1	3
Medium libraries	2	4	1
Small libraries	0	0	0

Email, web form and virtual reference services are often accessed through a library’s website. Ninety-two percent (twelve libraries) of the thirteen respondents provide a link on their website and one library (8%) does not. For those that do provide a link (thirteen respondents) five libraries (38%) have their email and web form link on the front page and of those that are providing virtual reference (four respondents), one library (25%) have their virtual reference link on the front page and three libraries (75%) do not.

Table 9. Email and web form link available on the library website.

Yes	No	No website
12	1	0

Table 10. Email and web form link available on the library website by size of library.

	Link	No link	No website
Large libraries	7	0	0
Medium libraries	5	1	0
Small libraries	0	0	0

Table 11. Email and web form link on the front page of the library website.

Link	No link
5	8

Table 12. Virtual reference link available on the front page of the library website.

Link	No link
1	3

Table 13. Email and web form link on the front page of the library website by size of library.

	Yes	No
Large libraries	2	3
Medium libraries	3	3
Small libraries	0	0

There has been much discussion and speculation in the last few years about the decrease in the number of walk-in or telephone reference enquiries. The selected libraries were asked if with the introduction of digital reference, their reference questions had increased, decreased or stayed the same. Four (31%) of the thirteen respondents said the numbers of questions had increased and nine respondents (69%) said the numbers were staying the same.

Table 14. Changes in the number of reference questions.

Increased	Decreased	Stayed the same	Don't know
4	0	9	0

Table 15. Changes in the number of reference questions by size of library.

	Increased	Decreased	Stayed the same	Don't know
Large libraries	2	0	5	0
Medium libraries	2	0	3	0
Small libraries	0	0	1	0

5.2.2 Types of Reference Questions

The survey asked what types of questions the libraries' digital services were receiving. Eleven of the thirteen respondents (46%) answer quick reference questions with nine respondents (38%) answering in-depth enquiries. As the respondents had the option of answering multiple answers, over half the libraries said they were receiving both types of questions. Other types of questions answered included genealogical information and overseas requests for local information.

Table 16. Types of questions received through the digital information services.

Quick Reference	In-depth research	Other
11	9	4

Table 17. Types of questions received through the digital information services by size of library.

	Quick Reference	In-depth research	Other
Large libraries	7	5	1
Medium libraries	4	4	3
Small libraries	0	0	0

5.2.3 Virtual Reference

Virtual reference is the most recent form of digital reference to be offered by libraries. As mentioned, only four (12%) of the eighteen respondents are either participating in or providing a virtual reference service. They are all large libraries. To find out more about this aspect of digital reference, the selected libraries were asked a series of questions. They were asked if the service is incorporated into reference desk duties or provided by

staff away from the desk. Three libraries (75%) said the service was not incorporated into reference desk duties and one library (25%) said they were. The one library that said they do, interpreted reference desk duties differently. All the libraries said they provide the virtual service away from the reference desk.

Table 18. Virtual reference service incorporated into reference desk duties.

Yes	No
1	3

They were also asked if staff are rostered on the service. They all roster staff, with two libraries (40%) rostering for one-two hours, one library (20%) for more than two hours and two libraries (40%) having various time periods depending on the time of day and expected traffic. The library providing two virtual services has different time periods for each service. The times the virtual services are available varied from one library (14%) in the morning, four libraries (57%) in the afternoon and one library (14%) in the evening. One library offers services in all three time periods.

Table 19. Staff rostered on the virtual reference service.

Yes	No
4	0

Table 20. Time periods on the virtual reference service

Less than 1 hour	1-2 hours	More than 2 hours	Other
0	2	1	2

Table 21 Availability of the virtual reference service.

24/7	Morning	Afternoon	Evening	Other
0	1	4	1	1

Survey participants were able to include multiple answers to the question shown in Table 21.

5.2.4 Librarians’ Attitudes

Staff reactions to the introduction of new technology are important when implementing new services. The survey asked whether staff reactions had been positive, neutral or negative to the introduction of digital services. Eight of the thirteen respondents (57%) were positive with five respondents (36%) being neutral. No responses were negative.

Table 22. Staff reactions to digital reference services.

Positive	Neutral	Negative	Don’t Know
8	5	0	1

Table 23. Staff reactions to digital reference services by size of library

	Positive	Neutral	Negative	Don’t Know
Large libraries	5	3	0	0
Medium libraries	3	1	0	1
Small libraries	0	1	0	0

5.2.5 Staff Training

When new technology and services are introduced staff need to be trained. The survey asked whether libraries had provided training in digital technologies. Eleven of the twelve respondents (92%) have provided training.

Table 24. Provision of staff training

Training	No Training
11	1

Table 25. Provision of staff training by size of library

	Training	No Training
Large libraries	7	0
Medium libraries	3	1
Small libraries	1	0

5.2.6 Statistics

The selected libraries were asked if they keep statistics on the types of users using the digital service. Five (36%) of the fourteen respondents said yes and nine (64%) said no. The library that runs two virtual services keeps statistics for AnyQuestions, but not for their own service. Some of the libraries made additional comments that included:

- Types of users are impossible to verify digitally
- AnyQuestions definitely keeps statistics
- User statistics could be generated if needed

5.2.7 Collaboration

Collaboration between other libraries is working well overseas, particularly with libraries providing a virtual reference service. The survey asked the libraries whether their services were being provided in collaboration with other libraries. Apart from the four respondents (29%) who participate in AnyQuestions no other libraries stated they were collaborating.

Table 26. Collaboration

Collaboration	No collaboration
4	10

Table 27. Collaboration by size of library

	Collaboration	No collaboration
Large libraries	4	4
Medium libraries	0	5
Small libraries	0	0

5.2.8 Future Developments

To ascertain what developments are being planned in digital reference, the survey asked if the libraries were planning to expand their digital reference service. There was a fairly even response from the thirteen respondents with six respondents (46%) saying yes and seven libraries (54%) saying no. They were also asked what types of technologies they were planning. Three of the seven respondents (43%) said virtual and four (57%) said other which included wikis, web based consortias, web browsers, audio formats, RSS (Rich Site Summary or Really Simple Syndication), and a local history/heritage website.

Table 28. Expansion of digital reference services

Yes	No
6	7

Table 29. Expansion of digital reference services by size of library

	Yes	No
Large libraries	4	3
Medium libraries	2	3
Small libraries	0	1

Table 30. Types of technologies that are planned

Virtual	Videoconferencing	Other
3	0	4

Table 31. Types of technologies that are planned by size of library

	Virtual	Videoconferencing	Other
Large libraries	2	0	3
Medium libraries	1	0	1
Small libraries	0	0	0

6. Discussion

This discussion will highlight the issues that have come through in the survey and answer the question:

- What digital reference services, if any, are New Zealand (NZ) public libraries providing, and what is the impact on their traditional reference services?

With the downturn in reference desk enquiries and the introduction of the Internet, overseas libraries began offering digital reference services. New Zealand public libraries were also experiencing a downturn in reference desk enquiries and becoming aware of the need to change the way they offered their services. The large and medium selected libraries provide email and web form services to compliment their face-to-face and telephone reference services. Some have been offering these services for several years, with one library offering their email service since 1995.

Virtual reference is a more recent form of digital reference and not widespread among the selected libraries. Several factors could contribute to this - special software is required, it can involve more staff resources and many libraries have financial constraints. AnyQuestions is the first collaborative initiative in New Zealand, involving public libraries. For one library, participating in this service is allowing them to see how this form of digital reference can complement email and web form services before launching a virtual service of their own. The results corroborate findings in the literature, where overseas libraries began by providing email and web form services and later moved to virtual services (Bao 2003, Tenopir and Ennis 2002, Jay and Webber 2005, Janes 2002).

The selected libraries were asked why their library had chosen the type/s of digital services they are providing. Comments varied, but several issues stood out:

- Answering questions by email and/or web forms is a simple default
- Manageable with current budgets, present staffing and time available that meets customer demands
- Another point of access
- Large segment of customers responded to email and web form assistance
- Important to provide a variety of methods for customers to contact the library so they can access reference services when required twenty-four hours a day seven days a week (24/7)
- Need to be where the customers are – physical and virtual
- Share the culture and heritage of the area with locals and visitors
- One library is looking at using messaging and texting to respond to questions, but the same concerns of staff availability arise, particularly when there could be an unpredictable number of questions
- One library is developing their website to make digital services accessible this way
- Chose to take part in AnyQuestions to see how this form of digital reference could complement their existing email and web form services

Most of the selected libraries do not have the funding or staff resources to provide anything more than email and web form services. When the demand for these and other online services grows, libraries may have more ammunition to request additional funds and resources.

6.1 Reference Services

The selected libraries are receiving their digital reference enquiries mainly at the reference desk. Email and web form enquiries do not need to be answered immediately – unless the enquiry is urgent - and can be done when the desk is quiet. Some libraries' enquiries are received by administration staff and are presumably passed on to reference staff. This was not made clear in the survey, suggesting the question could have been worded differently to find this out. One library commented that their enquiries arrive at administration and are then passed on to the reference desk. The library that is providing their own virtual reference service has a special team for receiving and answering their digital reference questions. They have reference librarians and library assistants who work in a separate area from the reference desk. The selected libraries that provide the AnyQuestions service do so away from the reference desk. A comment in the literature says that providing virtual services away from the reference desk allows the librarian to focus on the customer and not be distracted by the reference desk (Breznay and Hass 2002/2003). From the researcher's own experience in answering questions on AnyQuestions, this is preferable. These findings are in line with much of the literature reviewed (Sweet, Lisa and Colston 2003, Breznay and Hass 2002/2003), but there is still debate on this issue (Ronan 2003). This study is too small to come to any firm conclusion, particularly regarding virtual reference. Virtual reference is still new to NZ public libraries and until there are more libraries offering this service, and more research done, there will be no clear indication as to where is the best place to receive and answer digital reference enquiries.

There was some confusion about what constituted reference desk duties, as for one library this includes such duties as shelving and providing digital reference services, but these duties are not actually done by staff during scheduled reference desk hours. There was also confusion between the terminology of reference desk staff and reference librarian. The survey assumed the reference desk staff would be the staff working on the reference desk, receiving and answering enquiries, and the reference librarian would be head of reference, also referred to as team leader reference or head of information service. For the purposes of the survey the reference librarian is head of the library reference section. If they were receiving the enquiries, it would be away from the desk.

6.2 Response Times to Reference Questions

When a customer goes to the library and asks a reference question face-to-face, most of the time, they receive the answer straight away. When customers ask question electronically, except for virtual reference, they cannot be answered straight away. Response times have been introduced to assist the librarians with a time frame to answer the question. Many of the selected libraries answer their questions within twenty-four or forty-eight hours, but there are variations with the time frame depending on the type of question, the customer and when it is required.

6.3 Websites

With the introduction of websites, libraries have had the opportunity to extend their services beyond the physical library, allowing customers to ask questions any time. The selected libraries all have websites, with all except one who is currently developing their website, providing a link to their email, web form or virtual service. The majority however do not provide the links to these services on the front page of their website. This issue is not discussed much in the literature, but is mentioned in one study (Bao 2003) where the researcher comments on the number of libraries that consider their digital service important enough to have a link on the front page of the website. More research needs to be done on this, as this researcher believes the links for these services should be as accessible as possible. Breznay and Haas (2002/2003) in their article on starting and operating a digital reference service, believe links to virtual services should be placed liberally around the website, to remind users about the service. Links to other services such as email should also be included so customers have choices on how to ask for assistance (Breznay and Haas 2002/2003, 108).

Because of the low response rate to the survey for this study, the researcher did some additional research, looking at all NZ public library websites to find the links to any digital services. Practically all library sites at least provide an email address to contact the library. These may not necessarily be formal digital reference services, but a customer is able to contact the library and can ask a reference question. In the view of the researcher, this constitutes a digital reference service. The division is just about even between those libraries that have these links on the front page and those that do not. Many of the medium and small libraries do have these links on the first page, as their website often has only one or two pages. When many of the libraries have developed

their websites further, it will be interesting to look again at what services they are providing and where the links are placed.

6.4 Reference Enquiries

The decrease in the number of reference enquiries continues to be discussed in the library literature. When libraries began introducing digital reference services, they believed it would counteract this decrease. There is debate in the literature as to whether this has happened, and the results of this survey do not help to clarify this. The majority of the respondents said the number of reference enquiries had remained the same. No libraries said their enquiries had decreased, but the results are inconclusive. With a larger sample of libraries, the result might have been more conclusive. In a study by Janes (2002), the respondents were asked the same question. The results were similar to this study with no overwhelming result in any direction. Janes' (2002) results were more of a concern with a high number of respondents saying the number of questions was decreasing.

6.5 Types of Reference Questions

The literature review has discussed the types of questions best suited to be answered by a digital reference service. The consistent finding on the type of questions best suited is quick reference (Janes 2002, Bao 2003, Desai 2003, Sweet, Lisa and Colston 2003, Straw 2000). The survey for this study is consistent with this finding, as the majority of the selected libraries answer quick reference questions. The literature also points out

that the customer often regards the digital environment as being useful for quick questions only (Desai 2003). As well as quick reference, over half the selected libraries are providing in-depth research. This finding contradicts much of what is in the literature, except for one study (Ciccone and VanScoy 2003), which found customers were using the virtual service as a replacement for in-person reference and asking a variety of questions, including in-depth research. In-depth research is often more difficult to provide in the digital environment, as these questions can require lengthy reference interviews. This can make it more difficult to understand the needs of the customer (Koyama 1998, Straw 2000). Only one of the selected libraries that are answering in-depth questions provides a virtual service, the others only email and web form services. Straw (2000) discusses the reference interview using email and believes it is ideal for handling quick transactions. Complex requests can sometimes take weeks to resolve with messages going back and forth. More research could be done on this to discover how the selected libraries are handling their in-depth questions. The virtual service (AnyQuestions) is providing answers to homework questions, something also mentioned in the literature as gaining popularity (Clapp and Pfeil 2005, Kloss and Zhang 2003).

6.6 Virtual Reference

The number of NZ public libraries providing a virtual reference service is small. From the selected libraries, only one provides their own service, with four participating in AnyQuestions. The issue of whether a virtual reference service is part of reference desk duties was covered earlier. Because the demands of staffing a virtual service are similar to those of staffing a physical reference desk, the selected libraries were asked

whether the staff work on the service for allotted time periods and when the service is available. All libraries roster staff. Time periods vary. The libraries participating in AnyQuestions are rostered on this service in the afternoon as the service is available between 1 and 6pm. The library offering their own service does so Monday – Friday 9am - 9pm and Saturday and Sunday 9am – 4pm. Many overseas libraries are providing successful virtual reference services, often in collaboration with other libraries, and some are providing services 24/7 (Eastell 2004, Bailey-Hainer 2005). The literature also includes cautionary advice concerning virtual reference, discussing services that are being under utilised and ways to make them work better (Coffman and Arret 2004a,b). It is important for NZ public libraries to consider the pros and cons of virtual reference before making any decisions.

6.7 Librarians' Attitudes

The introduction of digital reference services has meant changes to many librarians' duties. Studies have looked at librarians' attitudes and feelings to these changes and they have generally been positive and enthusiastic (Janes 2002, Jay and Webber 2005). The selected libraries were asked the reactions of their staff to digital reference. The reactions were mainly positive, confirming the results from the studies in the literature review.

6.8 Staff Training

Training staff is essential to the success of a digital reference service. Throughout the literature, training, including the core reference skills, is emphasised as vital for any library introducing a digital reference service (Salem, Balraj and Lilly 2004, Coffman 2003, Ronan 2003, Breznay and Hass 2002/2003). The selected libraries that are providing digital reference services are providing training for their staff.

6.9 Collaboration

Collaboration among libraries is beginning to happen in New Zealand. Two examples that involve public libraries are EPIC (Electronic Purchasing in Collaboration), a shared initiative of NZ libraries who have joined together to buy collective access to tens of thousand of electronic resources that can be used by people in libraries all over the country, and AnyQuestions, which has already been mentioned, giving NZ school children a virtual reference service to assist them with their schoolwork. The literature has many successful examples of public libraries in the United States and United Kingdom who are providing collaborative digital reference services (Bailey-Hainer 2005, Berube 2003, 2004, Eastell 2004, Sweet, Lisa and Colston 2003). At present, no NZ public libraries are working collaboratively with libraries in NZ or overseas, but there is potential for this to happen in the future. The only selected libraries working collaboratively are those participating in AnyQuestions. This service is showing libraries that they can work together to provide a virtual reference service, and could be a model for libraries to develop partnerships that provide reference services to everyone.

6.10 Future Developments

Digital reference will continue to expand and grow in NZ public libraries. A number of the selected libraries are planning to introduce virtual reference and others have plans to offer wikis, RSS feeds, web based consortia, audio formats and a local history/heritage website. One library commented that they were planning their own virtual reference to compliment AnyQuestions and their email and web form services.

6.11 Deficiencies in the Research Design

There were some deficiencies in the research design. Included are some suggestions for different approaches that may have been more appropriate. As mentioned in the responses, the low response rate may have been caused by the time of year. Because of this, the survey might have been better sent to all sixty-seven NZ public libraries. This might have resulted in a higher overall response rate that would have given more statistical significance to the results. It could have also produced more responses from the small libraries.

Time was also a limiting factor, hence the decision to send the surveys by email. If there had been more time, a follow-up phone call could also have resulted in a higher response rate.

The questionnaire also contained some deficiencies. Question one actually contained two questions, but only boxes to answer one. The other had to be written, which was not the intention. As noted earlier, there was some confusion with terminology especially

“reference librarian.” Many librarians refer to a reference librarian as anyone working in the reference section of a library; for the questionnaire it may have been clearer to use team leader or head of reference or include a definition of what the researcher meant by “reference librarian.” It can be difficult when libraries use different names. The same applies to reference desk duties. Some libraries include duties done away from the reference desk such as shelving. A definition of reference desk duties may have overcome this problem.

The question in the survey on whether virtual reference is incorporated into reference desk duties should also have been asked about email and web form reference, as these enquiries are often answered at the reference desk. They were asked where the questions were received in the library; an addition to this would have been to ask if the enquiries were answered at the reference desk or somewhere else.

7. Conclusion

Digital reference is being offered in many NZ public libraries. Email reference is the most popular with many of the larger libraries providing a variety of digital reference services. Virtual reference is still very new to NZ public libraries, but with the government's Digital Strategy, more funding will allow public libraries to expand their digital reference services to include virtual.

Many facts about digital reference in NZ public libraries remain unclear. The information from the survey only touches the surface. In-depth research could find out much more about the points raised in the survey. Are digital reference services having an impact on the delivery of traditional reference in NZ public libraries? The evidence from this

research is inconclusive. Digital services are increasing enquiries in some libraries, but whether they are making an impact on their traditional reference service is uncertain. Some libraries commented that they did not have the staff or the budget to provide all types of digital reference. This could impact their delivery of reference if they chose to offer these services without the additional staff or resources. Possibly this is why they are choosing not to offer these services. More research needs to be done to find this out.

The low response rate and deficiencies in the survey design have resulted in inconclusive results for this study. We know libraries are providing digital reference services and we know something about how the services are provided, but it is still unclear whether these services are having an impact on traditional reference services.

8. Recommendations

Research could be carried out on a number issues:

- Additional research into digital reference in all NZ public libraries
- What are the selected libraries doing in five years time and how far has digital reference come?
- Where do public library websites put their links for digital reference and how important do they consider these services?
- How are librarians feeling about digital reference?
- The question of answering quick reference versus in-depth questions electronically.

Appendix 1: Information Sheet and Digital Reference Services Survey

Participant Information Sheet for a Study of Digital Reference Services

Researcher: Sue Barnaby: School of Information Studies, Victoria University of Wellington.

I am a Masters student in Library and Information Studies at Victoria University of Wellington. As part of this degree I am undertaking a research project. The project I am undertaking investigates the impact of digital reference on the delivery of reference services in public libraries in New Zealand. Ethics approval has been obtained for this research.

I invite reference librarians to participate in this study by completing a questionnaire. This questionnaire will take about fifteen minutes to complete and can be returned to me by email preferably within one week of receipt.

Responses collected will form the basis of my research. It will not be possible for you or your library to be identified and material collected will be kept confidential. No person other than myself and my supervisor, Dr Rowena Cullen, will see the questionnaires. The research report will be submitted for marking to the School of Information Management and deposited in the University Library. An article based on this research will be submitted for publication in a scholarly journal. The questionnaires will be destroyed one year after the end of the project.

Feedback will be provided to all participants in the form of an executive summary after the final report has been submitted.

If you have any questions or would like further information about the project, please contact me by email barnabsuza@student.vuw.ac.nz or my supervisor Dr Rowena Cullen at the School of Information Management Rowena.Cullen@vuw.ac.nz.

Sue Barnaby

Digital Reference Services Survey

Please complete this survey about the digital reference services provided by your library.

Please read the following definitions before completing the survey:

Digital reference refers to any reference service conducted over the Internet and can include email, a web form or virtual.

Email reference: a reference enquiry received as an email message.

Web form reference: a reference enquiry form on a library's web page that allows a reference enquiry to be submitted electronically.

Virtual reference: Using chat on the web to answer reference questions in real-time.

When completed, please return the survey to me barnabsuza@student.vuw.ac.nz as an email attachment.

The return of this questionnaire indicates consent to participation in this study.

The information collected will be confidential and will only be seen by my supervisor and myself.

Name of Library.....

1. Please specify what types of digital reference services you are providing in your library and how long you have been offering these services. (You can tick more than one)

- ☐1 Email
- ☐2 Web Form
- ☐3 Virtual (Chat)
- ☐4 Other (please specify)
- ☐5 None

2. If your library is not offering a service, are you planning to offer a digital reference service?

- ☐1 Yes ☐2 No
- ☐3 Don't know
- If yes, when would you want to be offering it by?

Questions 3-6 are about email and web form reference services. Please only answer them if your library provides this service.

3. If your library is offering an email and web form service, who receives the enquiries? (You can tick more than one)

- ☐1 Reference desk staff ☐4 Dedicated staff member
- ☐2 Reference librarian ☐5 Other (please specify).....
- ☐3 Administration

4. What is the turnaround time for enquiries received via email or web form?
- ☐₁ Within 24 hours ☐₂ Within 48 hours
☐₃ Other (please specify)
5. Is the email and/or web form option available through the library website?
- ☐₁ Yes ☐₂ No ☐₃ Don't have a website (go to question 7)
6. Is the email and/or web form option on the front page of the library website?
- ☐₁ Yes ☐₂ No

Questions 7-12 are about virtual reference services. Please only answer them if your library provides this service.

7. If your library is providing a virtual service, is it incorporated into reference desk duties?
- ☐₁ Yes ☐₂ No
8. If no, is it provided by staff away from the desk?
- ☐₁ Yes ☐₂ No
9. Is the staff rostered on the virtual reference service?
- ☐₁ Yes ☐₂ No
10. If yes, does the staff work on the virtual service for allotted time periods?
- ☐₁ Less than 1 hour ☐₂ 1-2 hours ☐₃ More than 2 hours
☐₄ Other (please specify).....
11. Is there a link to the virtual service on the front page of the library website?
- ☐₁ Yes ☐₂ No
12. When is the virtual service available? (You can tick more than one)
- ☐₁ 24/7 ☐₄ Evening
☐₂ Morning ☐₅ Other (please specify).....
☐₃ Afternoon
13. What have been the reactions of the staff to the introduction of digital reference services? (You can tick more than one)
- ☐₁ Positive ☐₃ Negative
☐₂ Neutral ☐₄ Don't know
14. Have you provided training in the digital reference technologies to staff?
- ☐₁ Yes ☐₂ No

15. With the introduction of digital reference services, have the reference questions received by your library increased, decreased, or stayed about the same?

- ☐ ₁ Increased
- ☐ ₂ Decreased
- ☐ ₃ Stayed about the same
- ☐ ₄ Don't know

16. What types of questions is the digital reference service receiving? (You can tick more than one)

- ☐ ₁ Quick reference
- ☐ ₂ In-depth research
- ☐ ₃ Other (please specify).....

17. Do you keep statistics on the types of users using the digital reference services?

- ☐ ₁ Yes
- ☐ ₂ No

18. Is the digital reference service being provided in collaboration with other libraries?

- ☐ ₁ Yes
- ☐ ₂ No

19. Are you planning to expand your digital reference service to include other technologies?

- ☐ ₁ Yes
- ☐ ₂ No

20. What types of technologies are you planning to include? (You can tick more than one)

- ☐ ₁ Virtual
- ☐ ₂ Videoconferencing
- ☐ ₃ Other (please specify).....

21. Explain why your library chose the type of digital reference service you provide.

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Appendix 2: Response Rates (Raw Data)

		Sent (1st group)	Sent (2nd group)	Total Sent	Received	Response Rate
Upper North Island	Large	3	1	4	3	75%
	Medium	3	2	5	1	20%
	Small	3	3	6	2	33%
Lower North Island	Large	3	2	5	1	20%
	Medium	3	1	4	3	75%
	Small	3	3	6	2	33%
South Island	Large	3	0	3	3	100%
	Medium	3	1	4	3	75%
	Small	3	3	6	0	0%
		27	16	43	18	42%
				4	3	
				5	1	
				3	3	
			Large libraries	12	7	58%
				5	1	
				4	3	
				4	3	
			Medium libraries	13	7	53.85%
				6	2	
				6	2	
				6	0	
			Small libraries	18	4	22%

Appendix 3: Raw Data and Excel Calculations

Library	Size	1					2
		Email	Web Form	Virtual	Other	None	Yes
I	Large	1	1	0	0	0	0
D	Large	1	0	0	0	0	1
C	Large	1	1	1	0	0	0
K	Large	1	1	1	1	0	0
H	Large	1	1	1	0	0	0
G	Large	1	0	0	0	0	0
L	Large	1	1	1	0	0	0
J	Medium	1	0	0	0	0	1
B	Medium	1	1	0	0	0	0
A	Medium	1	1	0	0	0	0
E	Medium	1	1	0	0	0	0
F	Medium	1	1	0	0	0	0
R	Medium	0	0	0	0	1	0
M	Medium	1	1	0	0	0	0
N	Small	0	0	0	0	1	0
O	Small	0	0	0	0	1	1
P	Small	0	0	0	0	1	0
Q	Small	0	0	0	0	1	0
Total		13	10	4	1	5	3
percent		39%	30%	12%	3%	15%	60%
	Large	7	5	4	1	0	1
	%	41%	29%	24%	6%	0%	100%
	Medium	6	5	0	0	1	1
	%	50%	42%	0%	0%	8%	50%
	Small	0	0	0	0	4	1
	%	0%	0%	0%	0%	100%	50%

No	Don't Know	3			Dedicated staff	Other	4			Yes	Nc	No Website
		Ref desk staff	Ref librn	Admin			24 hrs	48 hrs	Other			
0	0	0	0	1	0	1	0	0	1	1	0	0
0	0	1	0	1	0	0	1	0	0	1	0	0
0	0	1	1	0	0	0	0	0	1	1	0	0
0	0	0	0	0	0	1	1	0	0	1	0	0
0	0	1	0	1	0	0	1	0	0	1	0	0
0	0	1	0	1	0	0	1	0	0	1	0	0
0	0	0	1	0	0	1	0	1	1	1	0	0
0	0	1	0	0	0	0	0	1	1	0	1	0
1	0	0	1	0	0	0	1	0	0	1	0	0
0	0	0	0	0	1	0	0	1	0	1	0	0
0	0	1	1	1	0	0	0	1	0	1	0	0
0	0	0	0	1	0	0	1	0	0	1	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	1	0	1	0	1	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	7	4	6	1	4	6	5	4	12	1	0
40%	0%	32%	18%	27%	5%	18%	40%	33%	27%	92%	8%	0%
0	0	4	2	4	0	3	4	1	3	7	0	0
0%	0%	31%	15%	31%	0%	23%	50%	13%	38%	100%	0%	0%
1	0	3	2	2	1	1	2	4	1	5	1	0
50%	0%	33%	22%	22%	11%	11%	29%	57%	14%	83%	17%	0%
1	0	0	0	0	0	0	0	0	0	0	0	0
50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

6		7		8		9		10				11		
Yes	No	Yes	No	Yes	No	Yes	No	< 1 hr	1-2 hrs	> 2 hrs	Other	Yes	No	
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	1	0	1	0	0	0	0	0	1	0	1
1	0	0	1	1	0	1	0	0	0	0	1	1	1	0
0	1	0	1	1	0	1	0	0	0	1	0	0	0	1
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	1	1	0	1	0	0	0	1	0	0	0	1
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	8	1	3	4	0	4	0	0	2	1	2	1	3	
38%	62%	25%	75%	100%	0%	100%	0%	0%	40%	20%	40%	25%	75%	
2	5	1	3	4	0	4	0	0	2	1	2	1	3	
29%	71%	25%	75%	100%	0%	100%	0%	0%	40%	20%	40%	25%	75%	
3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

[illegible]

15				16			17	
Increased	Decreased	Same	Don't Know	Quick ref	In-depth	Other	Yes	No
1	0	0	0	1	1	1	0	1
0	0	1	0	1	1	0	0	1
0	0	1	0	1	1	0	0	1
1	0	0	0	1	1	0	1	1
0	0	1	0	1	1	0	1	0
0	0	1	0	1	0	0	0	1
0	0	1	0	1	0	0	0	1
0	0	0	0	0	0	0	0	0
0	0	1	0	1	1	0	0	1
1	0	0	0	0	1	1	1	0
0	0	1	0	1	0	1	1	0
1	0	0	0	1	1	0	0	1
0	0	0	0	0	0	0	0	0
0	0	1	0	1	1	1	1	0
0	0	1	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
4	0	9	0	11	9	4	5	9
31%	0%	69%	0%	46%	38%	17%	36%	64%
2	0	5	0	7	5	1	2	6
29%	0%	71%	0%	54%	38%	8%	25%	75%
2	0	3	0	4	4	3	3	2
40%	0%	60%	0%	36%	36%	27%	60%	40%
0	0	1	0	0	0	0	0	0
0%	0%	100%	0%	0%	0%	0%	0%	0%

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