

MUHARREM YILMAZ

Collaborative Virtual Reference Services in Norway:

A Case Study

Supervisor: Prof. Ragnar Nordlie

Master thesis
International Master in Digital Library Learning
2012

Declaration

I certify that all material in this dissertation which is not my own work has been identified and that no material is included for which a degree has previously been conferred upon me.



Date: 26/06/2012

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Muharrem Yilmaz

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Abstract

With the increasing availability of electronic information services, and the emergence of digital libraries, Virtual Reference Services have occurred as natural extensions of library works and, the Virtual Reference Services have taken a central place in the era of digital libraries.

This study demonstrates the perceptions of librarians towards collaborative virtual reference services through exploring the motivations that led the libraries to participate in collaborative virtual referencing.

This thesis is a case study which examines the Norway's country wide virtual reference service, Biblioteksvar. The population of the survey includes librarians that actively participated in Biblioteksvar from various public libraries in Norway. A questionnaire and interviews were used to collect the primary data.

The findings of this study show that collaborative virtual reference services are an effective way to provide information services to the patrons and it increases the competences of library professionals. The results also reveal that all members of the consortium must benefit from the collaboration to make it successful.

The results of this research will provide an insight to library professionals in their attempt to build and improve collaborative virtual reference services while providing information about digital reference services.

Keywords: Virtual Reference Services (VRS), Collaborative VRS, Digital reference, Biblioteksvar

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List of abbreviations

ABM	Arkiv, Bibliotek og Museum
CDRS	Collaborative Digital Reference Service
CRM	Customer Relationship Management
CVRS	Collaborative Virtual Reference Services
EARL	Electronic Access to Resources in Libraries
EARS	Electronic Access to Reference Service
FAQ	Frequently Asked Question
ICT	Information and Communication Technology
ILL	Inter Library Loans
IM	Instant Messaging
IP	Internet Protocol
JBI	Journalistikk, Bibliotek og Informasjonsfag
NOK	Norwegian Kroner
RSS	Really Simple Syndication
RUSA	Reference and Users Services Association
SMS	Short Message Service
UK	United Kingdom
URL	Uniform Resource Locator
USA	United States of America
VAT	Value Added Tax
VOIP	Voice over IP
VR	Virtual Reference
VRS	Virtual Reference Services

CHAPTER 1: INTRODUCTION

1. 1 Introduction

This chapter represents the background information to the study, scope of the study justification of the study, motivation to the study, aims and objectives, research questions, delimitations of the study and structure of the study.

1.2 Background information to the study

In this thesis it was aimed to identify collaborative virtual reference services in public libraries in Norway through investigating librarian's perceptions towards collaboration.

With the emergence of Internet, libraries have become more digital resulting in the development of hybrids libraries. As a result of this advent, libraries have initiated virtual reference services and have begun to communicate with users online. The reference tools and channels have changed, however, the mission of reference librarianship has not (Kresh, 2002). Librarians as well as libraries are preparing to proactively deal with technological forces reshaping the reference service environment.

Maxwell (2002) briefly summarizes the development of the reference services: "In the 1800s patrons needed to walk into the library to pose their questions. By the 1930s, they could deliver the inquiry via telephone or in person. By the 1990s email took its place alongside the phone. The natural progression for the 21st century adds live online reference via chat, voice and video to the technologies libraries use to deliver assistance" (p.14).

Virtual Reference Service is natural outgrowth of the library's digital collections and is very functional since it provides access to the library anytime, anywhere (Tenopir, 2004; Chowdhury, 2002). Virtual reference and several of its equivalent terms, e.g., digital reference, electronic references are the new terms for modernity leading the reference services into the new information age. Many authors have appraised the terminology using variant terms such as online, virtual, digital, live, interactive, real

time chat, web-based e-mail, synchronous and asynchronous for the new reference service (Agosto et al., 2011; Shaw, 2009; Yost, 2004; Lankes, 2003; Kresh, 2002). The terms “digital reference” and “virtual reference” are particularly common and interchangeable in the literature (Lipow, 2003). However, all of them share a central concept, the use of software and the Internet to facilitate human intermediation at a distance (Lankes, 2003).

There is a number of definitions of VRS. Berube (2004) has contributed to the terminology of this new information service model by describing virtual reference simply as “Virtual reference or information service: any real-time reference on the Web, using chat, voice, or video” (p.29). One of the most common and broad definitions was made by Reference and Users Services Association (RUSA). RUSA defines virtual reference in the *Guidelines for Implementing and Maintaining Virtual Reference Services* as a: “reference service initiated electronically, often in real-time, where patrons employ computers or other internet technology to communicate with reference staff, without being physically present. Communication channels used frequently in virtual reference include chat, video conferencing, voice over IP (VOIP), co-browsing, e-mail, and instant messaging” (RUSA, 2004).

With the help of the virtual reference service, libraries can reach users through modern communication channels on the Internet. Generally there are different types of service models for libraries such as asynchronous (e-mail based), synchronous (real-time, text-based, virtual reference or chat), video reference (synchronous, audio-visual-based, using webcams and video-conference equipment) and robots (knowledge databases combined with sophisticated search engines) (Berube, 2004). Both synchronous and asynchronous ways have different advantages and disadvantages; for instance “asynchronous VRS allows librarians to answer requests on their own time, after having conducted all necessary research that might enhance the accuracy and completeness of reply. However, using the asynchronous channel inhibits question clarification. It excludes the nonverbal cues and synchronous feedback that is crucial for an effective reference interview, potentially inhibiting the effectiveness of the user–librarian interaction” (Shachaf & Horowitz, 2008, p.127). Besides, VRS includes various commercial tools that librarians have been using for communication with the patrons

and help them via several real time communication channels such as AOL, MSN, or Yahoo (Shaw & Spink, 2009).

Virtual reference can be provided as an independent operation or as a collaborative enterprise with other libraries (Shaw & Spink, 2009). A collaborative virtual reference service comprises an online network of libraries using their cumulative local knowledge and collections to provide virtual reference to patrons from any of the member libraries (Ciccone & VanScoy, 2003). Collaboration among libraries is an effective way to meet the information needs both of library and user. For a long time libraries have participated in several consortia at regional, national and international levels in areas such as Inter Library Loan (ILL), copy cataloguing, software, databases and e-resources purchasing (Kern, 2009). However, library collaborations have increased in the last decade due to the access to the Internet and Information and Communication Technologies (ICT).

Collaboration and cooperation has expanded and reflected to the new areas in the libraries as the reference services. Network technology is increasingly utilized in reference work; fundamentally growing into collaborative effort for the benefit of both individual reference service and reference work in general (Pomerantz, 2008). Traditional reference services didn't allow as much collaboration as it is possible with the virtual reference service nowadays. Due to the increasing virtual nature of reference material and most communication being conducted electronically, an emerging trend of virtual service consortia can be observed. The Internet has had a profound impact on reference services and has given a rise to virtual or digital reference (Godfrey, 2008).

Apart from libraries becoming digital, the decreasing usage statistics in circulation departments and traditional reference services have motivated librarians to turn to online services as a solution. Libraries in the digital environment are vying to catch users' attention and provide useful and high quality information promptly. The circumstances are calling for integration of virtual reference services to meet the information needs of users. In order to satisfy the users who asked question to the library virtually, collaboration might be an alternative solution. The purpose of the CVRS is to provide best possible reference service to the community (Jin et al. 2005).

Distance learning, lifelong learning and information literacy are driving the need for virtual reference services so that online referencing has become a necessity. Libraries are looking for the best service to meet users' information needs and offer reference services in response to the increasing number of users populating in virtual worlds (Godfrey, 2008). The collaborative virtual reference service is an innovation that can bring benefits to both users and libraries. With the collaboration, libraries can share their ideas, technology and resources, and also library patrons are no longer confined to the services and resources only of their local libraries (Kwon, 2006).

VRS cooperatives are human (not technology) based organizations; technology is only a facilitation tool (Johnson et al., 2012). Libraries already answer questions and provide content to users by sending persistent URLs for the title, chapter, or page of a book, e-mailing articles from collections and databases, downloading book chapters to a shared network drive, and copying and pasting text virtually. With the progress of technology, virtual reference services become more collaborative to deliver a better overall service virtually.

With many reference desks experiencing a decline in the number of face-to-face transactions, libraries are being challenged to closely examine possibilities for connecting with remote users through virtual reference services. While many libraries that offering real-time chat reference assistance have already launched this service on a stand-alone basis, several libraries have chosen to participate in collaborative ventures to ease the impact of software costs and staffing for extended hours (DeHart, 2002).

1.3 Scope of the study

Virtual reference services have become a reality and are an active part in the evolution of the library services on the Web. There is a great deal of interest in the concept of virtual reference services, especially the use of chat and Instant Messaging (IM) tools nowadays. The public libraries have a shared interest; the main objectives of all member libraries is to offer a virtual reference service that efficiently and effectively meets the information and learning needs of the residents. This purpose gathered all the libraries in one point and encouraged them for the collaboration.

It would be useful to find out the background of a consortium for VRS at a nationwide level from a librarians' point of view. This research was conducted to identify the collaborative virtual reference in public libraries in Norway. The scope of the thesis is limited with the libraries that actively participated in Biblioteksvar. Biblioteksvar is a nationwide collaboration for virtual referencing and members of the consortium are public libraries.

The findings of this study would indirectly reveal the perspectives of librarians working in the libraries that involved in the collaboration for VRS.

1.4 Motivation to the study

Human mediation on the digital environment is still an important factor and is believed that it will remain as it is. Reference librarians will maintain the communication between users and libraries, by mediating the interaction. Virtual reference services will play an important role in the community since user value the human touch. In spite of discoveries of semantic web and robot technologies, librarians will remain to be responsible of people's information needs and information retrieval process.

The reference service is one of the most significant parts of the library services since it is the connection point between users and librarians for all kind of libraries. It would be useful to study on the subject of the virtual reference services in order to expand the horizons of the information professionals through discovering new developments in the area and contributing to the literature.

There were several possible topics to study on the virtual reference services that I could come along but I would like to investigate on the collaborative efforts for VRS. Therefore, I decided to use the case of *Biblioteksvar*, since I was based in Norway.

1.5 Justification of the study

Formation of a national collaborative virtual reference service and partnership among member libraries are significant. The members of the consortium are focused on common goals, however, each member library in the pool has different strengths/weaknesses and background. Therefore, it is important to explore the

perceptions of librarians in the member libraries that participated in the inter-institutional collaborative virtual reference services. Investigation on incentives for participation and motivation to join the consortia as well as the issues encountered along the way should be considered.

While many studies have examined the user satisfaction with virtual reference in general and in the collaborative virtual reference setting, few of the research look at the libraries' point of view (Kwon, 2006). Therefore, the purpose of this study is to investigate on the library's side empirically by revealing librarians' perspectives towards CVRS.

This research focuses particularly on the issues related to the Biblioteksvar from the member libraries' perspectives. The thesis is a case study, and explores the motivations, impediments of collaboration and future perspectives of librarians on the subject.

1.6 Aims and objectives of the study

1.6.1 Aims

The aim of the study is to gain an insight on virtual reference services from librarians' perspective. The research investigates the insights, motivations, perceived values and encountered impediments of members that participated in virtual reference collaboration as well as future perspectives. The study puts an empirical effort to help establishing and running of effective VR collaboration by exploring participating libraries' sights. The study offers suggestions to the libraries on virtual reference services through investigating a case in Norway - the Biblioteksvar. The case study brings benefit to all libraries currently considering or presently offering a virtual reference service and aspires to incorporate this service permanently into their suite of reference services.

1.6.2 Objectives

- To find out the motivations of librarians for participating in a collaborative delivery of virtual reference services
- To understand the incentives that lead the libraries to the collaboration on VRS

- To understand the attitudes of librarians in member libraries towards a collaborative approach and VRS in general
- To identify advantages and disadvantages of collaboration
- To explore the impediments of collaborative VRS from librarians' perspectives.
- To understand the future thoughts and perspectives of librarians in terms of virtual reference services and collaboration.

1.7 Research questions

The goal of the thesis is to assess the perspectives of librarians on Collaborative Virtual Reference Service in meeting users' information needs. The theme was addressed by the investigation of three research questions:

- What were the motivations for libraries to participate in a nationwide collaborative virtual reference service?
- What were the facilitations and impediments of the Collaborative Virtual Reference Services?
- In light of experience of Collaborative Virtual Reference Services, how do librarians see the future of the referencing?

1.8 Delimitations of the study

Since the purposive sampling strategy was used for the interviews, only a limited number of participants were involved in this research process. Therefore, the study was limited to librarians who were actively participated in Biblioteksvar.

This research was designed in English and native language of the user of Biblioteksvar is Norwegian. This study could also include in the user's perspectives; however, limited time and the language barrier delimited the research area. Therefore this research focuses only on the perspectives of the librarians towards virtual reference services.

Many other libraries in different countries may have similar experiences and situations. However, as this was a case study, the research was concentrated on Norway only.

1.9 Structure of the study

This research consists of five different parts: First chapter starts with the Introduction which includes Background information of study, Aims and Objectives of the study, Scope of the study, Motivation to the study, Justification of the study and Delimitations of the study. The second chapter explains Background of Case: Biblioteksvar, and presents Review the related literature to the study, starting from Virtual Reference Services to Collaborative Virtual Reference Service. The third chapter provides information about the Methodology that were used in the study. The fourth chapter focuses on the Analysis of Data gathered from the survey interviews and a questionnaire. In the last, fifth, chapter of the study presents the summary of findings, Discussion and Recommendations.

CHAPTER 2: BACKGROUND OF THE CASE and LITERATURE REVIEW

2.1 Introduction

This chapter is composed of two sections: The first section presents information regarding the case of the research, Biblioteksvar. The information for this section was gathered via documentations such as annual reports, presentations, website of the system and interviews conducted with the supervisors of Biblioteksvar. The second part includes in Literature Review which aims to show the relevant studies and research from literature. There are some useful resources available in the literature outlining important issues to be considered in the process of initiating and maintaining both Virtual Reference Service and Collaborative Virtual Reference Services. This review of the literature mainly focuses on Virtual Reference Services in general and benefits and challenges of collaboration for Virtual Reference Services.

2.2 Biblioteksvar

Norway's countrywide virtual reference service, Biblioteksvar, was a collaborative service provided by public libraries over the country and was available to all citizens. It provided a live chat service, an e-mail reference service and SMS services, during the day, offered all the time, except national holidays. The URL of the service was <http://biblioteksvar.no>. The meaning of the Biblioteksvar in English is 'Library Answers'.

Members of the Biblioteksvar were generally public libraries of all sizes. Although partner libraries did not represent much geographic diversity, each region had its own community. The system aimed to serve people living in every corner of the country.

Biblioteksvar called for the libraries to participate in the collaboration by saying "Cooperation creates a network that is developing and enriching for the individual library and the librarian" (Biblioteksvar, 2008).

Biblioteksvar was supported by grants from the Norwegian Archive, Library and Museum Authority (ABM Utvikling) and it was a part of ABM Utvikling's Norwegian Digital Library. Later on responsibility of the services were shifted to National Library of Norway. As it is seen from the Table 1, Biblioteksvar included many public libraries from all around the country.

Table 1: List of the libraries which were participated in Biblioteksvar

Alta bibliotek	Nord-Trøndelag fylkesbibliotek
Arendal bibliotek	Nordland fylkesbibliotek
Asker bibliotek	Oppegård bibliotek
Bærum bibliotek	Oppland fylkesbibliotek
Bergen bibliotek	Rana bibliotek
Deichmanske bibliotek, skoleavdelinga	Sandefjord bibliotek
Deichmanske bibliotek, hovedutlånet	Sandnes bibliotek
Deichmanske bibliotek, Bjerke filial	Sarpsborg bibliotek
Deichmanske bibliotek, Furuset filial	Ski bibliotek
Deichmanske, Grünerløkka filial	Skien bibliotek
Deichmanske bibliotek, Holmlia filial	Sør-Trøndelag fylkesbibliotek
Deichmanske bibliotek,	Sør-Varanger bibliotek
Pasientbiblioteket på rikshospitalet	Sortland bibliotek
Deichmanske bibliotek, Røa filial	Stange bibliotek
Drammensbiblioteket	Stavanger bibliotek
Buskerud fylkesbibliotek	Steinkjer bibliotek
Finnmark fylkesbibliotek	Stjørdal bibliotek
Grong folkebibliotek	Telemarksbiblioteket
Hamar bibliotek, musikkavdelinga	Tønsberg og Nøtterøy bibliotek
Horten bibliotek	Troms fylkesbibliotek
Kristiansand folkebibliotek	Tromsø Bibliotek og Byarkiv
Larvik bibliotek	Trondheim folkebibliotek
Levanger bibliotek	Ullevål sykehus, læresenteret
Lier videregående skole, biblioteket	Verdal bibliotek
NGU, biblioteket	Sandnes Videregående skole, biblioteket
Nord-sør biblioteket	Ås Bibliotek

2.2.1 Purposes and goals of the Biblioteksvar

The purpose of Biblioteksvar was to provide reference services to users virtually. It was a project dedicated to the improvement of reference services and the creation and operation of information services based on Internet with human mediation. Through the Biblioteksvar, libraries from whole country shared ideas and experiences about reference service. Biblioteksvar was based on a consortium which was a network of libraries. It offered expertise and resources to the community as a national answering service. Administration and supervision of the project was anchored under responsibility of Oslo Public Library (Deichmanske Bibliotek).

The goal of the consortium was to build and run a national digital reference service. The project was the first of its kind in Norway, both in regard to the combined technologies in a single interface, and the fact that so many institutions cooperated to provide a single reference service. Biblioteksvar has been aimed to build a national reference service. It was also targeting to raise the digital expertise of librarians who were working in member libraries.

By participating in the project, each individual library or institution pledged their work time without economic compensation. The member libraries got benefit from expertise in reference work via the consortium. In addition to new experiences in the form of virtual reference services, especially chat services gave them a new insight into the traditional, “in person” reference work. With Biblioteksvar more and more library personnel were actively using electronic resources in their reference work.

It was the intention of the project’s leadership that participation in the Biblioteksvar would create a network among participating institutions and their staffs, and encourage the professional development. Cooperative services raised the level of professionalism and the product’s quality. It was the hope that this cooperation would develop into a forum whereby participants would exchange ideas and experiences, especially in relation to the technological newcomer, chat and in relation to the craft of reference work in general.

2.2.2 Organization and communication

The participating libraries of Biblioteksvar helped to keep the service open on voluntary basis. The participating libraries had, at their option, one or more shifts in a week. A chat-duty was 90 minutes. Most member libraries were participating in this form, and often had a fixed duty per week. The duty was often divided between several libraries, and two to four librarians chat simultaneously. E-mails were distributed from headquarter which was the adult department at the Oslo Public Library each morning to the libraries that participated in responding to e-mail.

Biblioteksvar was a virtual reference service that provided to the users an opportunity to have a dialog with a librarian through instant chat, SMS, or an email form on the web page. With Biblioteksvar, the users could choose however they want to submit their questions.

2.2.2.1 Chat

Chat with the librarian answers the questions submitted and helps to users with factual information via links to the source or information. The chat service was a natural choice when users needed answers for their questions immediately. Usually the answer was in the form of a link of an information source available electronically on the internet.

Opening hours of the system were between 10:00 to 16:00 on weekdays (Monday to 15.30). School children were the largest user group of the chat service because it was a form of communication they knew well, but it probably also had a connection with the opening hours.

2.2.2.2 Email

When users had a deeper question that required more detailed information, and an extensive search of sources by the librarian, they used the email form on the website. The answer would come in the course of the next working day by email. On the website, users could also search in the database of questions and answers previously submitted.

Deichmanske Library, adult section was responsible for distributing all incoming questions every morning before 9:00. The Music Department at Deichmanske Library had primary responsibility for ensuring that all music questions were answered every day, and to move questions from the main base to the music base. This organizational model would also be feasible for other types of fields.

2.2.2.3 SMS (Short Message Service)

SMS was another way to ask questions that could be answered by librarians. Patrons could send SMS query to the Biblioteksvar by sending “svar (ask)” and “query” to 1980. It cost only the price of the SMS. The answer provided for the users received by the library was free.

SMS service was started in 2005. In 2010 the Library had answer 687 SMS inquiries. The number of SMS has been declining in recent years. It has been shown that this form of communication has worked poorly in practice, partly due to too long response time. Therefore, it was decided to discontinue the SMS service as of 01.01. 2011.

2.2.2.4 About the answers

Questions were answered with factual information, link tips or referrals to other institutions by librarians who were better equipped to help. Patrons could expect help to find relevant literature and information according to their needs, as well as help about the Internet navigation. The system did not give any medical diagnoses or answer legal questions.

More complicated questions demanded time-consuming reference work, were usually involved several sources. In these cases, the patron would be advised to make use of the email web based form, which could be found by clicking on the “E-mail” link. The answer would be provided during the course of the next business day.

Questions requiring only short, factual answers—including questions about the library—were easily answered by SMS. It was important to keep in mind that the person asking question was limited by 160 characters in his/her query. Patrons, who needed more information than provided by SMS, could use Biblioteksvar’s web form, or to

contact their local library. The SMS service was both used to reserve or renew library materials.

2.2.3 History of Biblioteksvar

In 2000, collaborative Virtual Reference Service which was named as Biblioteksvagten in Denmark influenced the Norwegian public libraries; Norwegian libraries decided to initiate a similar service as Danish Libraries' applications. The project was started in the leadership of Vestfold Public Library with 8 libraries in 2002. It was aimed to be a national service which answers all types of questions from everybody. The name of the project was Bibliotekvakten.

Biblioteksvar was a merger of the two former systems Spør Biblioteket (Ask the library) and Bibliotekvakten (Library Guard). Bibliotekvakten was started in Vestfold in 2002 and offered chat service. 'Ask the library' was an email service established in 1997 at the Oslo Public Library where the librarians responded to the e-mail inquiries from all over Norway. In December 2004, Bibliotekvakten and Spør Biblioteket were merged into the Biblioteksvar. The service received a new generic name, common user interfaces and common management, based at the Oslo Public Library. In June 2006, an operating agreement between the Oslo Public Library and the ABM - Arkiv, Bibliotek, Museum (*Archives, Libraries, and Museums*) was occurred, with a time span of 4 years from 1st April 2006 – 1st April, 2010. But, ABM announced the termination of this agreement on 1st October 2009. And by the 31st of March, 2012 Biblioteksvar was terminated.

There was a considerable uncertainty about the funding of the service throughout 2010. The operating grant from the ABM ended 31 March 2010. Biblioteksvar was continued during the first half of 2011 in cooperation with the National Library. The project stopped to provide virtual reference services in the country 31st March of 2012.

2.2.4 Statistics

2.2.4.1 Budget and accounting

According to Biblioteksvar's Annual Report for 2010 (see Table 2), Biblioteksvar was granted a million Norwegian Kroner (NOK) by the government. With the residual funds from 2009 -591 000 NOK- Biblioteksvar had 1.591.000.00 NOK for 2010. The money mainly spent on staff costs, licenses for the software, participation in seminars and conferences, meetings arranged by Biblioteksvar, consulting, other expenditures such as office materials, etc. and VAT (value added tax). On the ground of uncertainty about the future of service, budget was set up several times during the year.

Table 2: Financial Framework of Biblioteksvar for 2010

Categories 2010	Budget	Accounting
Salary: a position associated with project management publishing of records	Kr 600 000,00	Kr 576 284,23
Licenses for the software - eDialog24	Kr300 000,00	Kr 250 797,50
Participation in seminars and conferences (travel costs, per diem and fee)	Kr 15 000,00	Kr 12 341,00
Meetings arranged by BS	Kr 30 000,00	Kr 0,00
Consulting	Kr 0,00	Kr 4.657,00
Other (office materials, data, etc.)	Kr 0,00	Kr 122,71
VAT (value added tax)	Kr 0,00	Kr62 588,22
Sum	Kr 945 000,00	Kr 847 792.90

According to the report the project had 519 000 NOK as residual funds in 2009. In 2010 only 4886 NOK was remained.

2.2.4.2 Usage statistics

As it is seen from Table 3 below the chat service was the most frequently used channel from 2004 to 2010 in communication with the users. The email was the second most frequently used services and SMS was in the third place in the order of usage. Between 2004 and 2007 questions submitted by user were increased in all communication channels however, after 2007 number of the inquiries started to drop.

The table displays that in 2006 Biblioteksvar got the maximum inquiries in total from users compared by other years. It is also seen from the table that most of the lost chats were happened in 2006. Number of missed (lost) chats was reduced but it went up again in 2010.

One should also note that chat session was dropped after 2009; the number of e-mail inquiries was decreased. Biblioteksvar received 687 requests in 2010 via SMS. This service functioned relatively poor; on the basis of this reason, the SMS service was discontinued as of 01/01/2011.

Table 3: Usage statistic of the Biblioteksvar (2004-2010)

<i>Channels</i>	2004	2005	2006	2007	2008	2009	2010
E-Mail	2394	5966	9954	6488	4191	3982	3972
Chat	11736	13542	13696	13295	13359	14342	13622
Missed Chat	4151	7396	10123	6940	4499	2634	3336
SMS	0	3591	3404	1873	1683	1009	687
TOTAL	14130	23099	27054	21656	19233	19333	18281
Difference from previous year		63,47 %	17,12 %	-19,95 %	-11,19 %	0,52 %	-5,4 %

2.2.5 Staffing

Biblioteksvar had two employees, a project manager and a project assistant when it was started. The employees were responsible for assigning the duties for the member libraries in Biblioteksvar. In 2010, the number of employees was reduced to one. Project assistant served as project manager from 1st January to 1st March, 2010. Later on he was promoted from project assistant to a project leader from 1st March to 31st December. From then Biblioteksvar had only one employee based in Deichmanske

Library until it was terminated. The staff was also responsible for the annual conference of the Biblioteksvar.

2.2.6 Technical background

Operation of the inquiries in Biblioteksvar has been carried out with the software which was called as 'eDialog24' prepared by Sentinel AS. eDialog24 provides solutions for web chat and internal chat to more than 300 companies in Scandinavia. The software is a Norwegian-developed instant messaging solution for professionals; which offers modules for systematic handling of e-mail, SMS, interaction with telephony, internal workflow and storage of all customer interaction into Customer Relationship Management (CRM) / archive system (edialog24, 2012). This software was also used for internal communication, and for distribution of the inquiries within the organization. During 2010 the Biblioteksvar cut drastically the number of licenses. This past year the number of licenses has been reduced from 325 to a total of 194 user licenses from 01.01 2011.

Biblioteksvar's interface was available in two languages, Norwegian and English as it can be seen in Figure 1 and Figure 2. Users could submit their questions in both languages to the system.

Velkommen til Biblioteksvar.no E-post Arkiv Om Biblioteksvar 

biblioteksvar

Biblioteksvar legges ned

Biblioteksvar har ikke fått finansiering til videre drift. Tjenesten legges ned f.o.m 30. mars 2012. Vi vil takke alle som har benyttet seg av tilbudet. Dere må heretter henvende dere til det lokale bibliotek for å få svar på spørsmålene deres.



E-POST

Gir deg ofte det beste svaret, og senest i løpet av neste arbeidsdag.

[Mer om e-posttjenesten](#)



CHAT

Biblioteksvar chatten er desverre nedlagt. Vi svarer på e-post t.o.m fredag 30. mars.

[Chatten er stengt.](#)



ARKIV

I Biblioteksvars arkiv finner du et utvalg av spørsmålene vi har besvart.

[Søk i arkivet](#)

Spør biblioteksvar

Eksempel på spørsmål:

Hvor mange prosent av norges nasjonalbudsjett 2009 går til skole og utdanning?

[Finn svaret i arkivet](#)

Biblioteksvar er en nasjonal tjeneste. Har du spørsmål angående lån, reserveringer e.l. må du ta direkte kontakt med det bibliotek det gjelder. [Se denne listen.](#)

Biblioteksvar 2011

Figure 1: Interface of Biblioteksvar in Norwegian

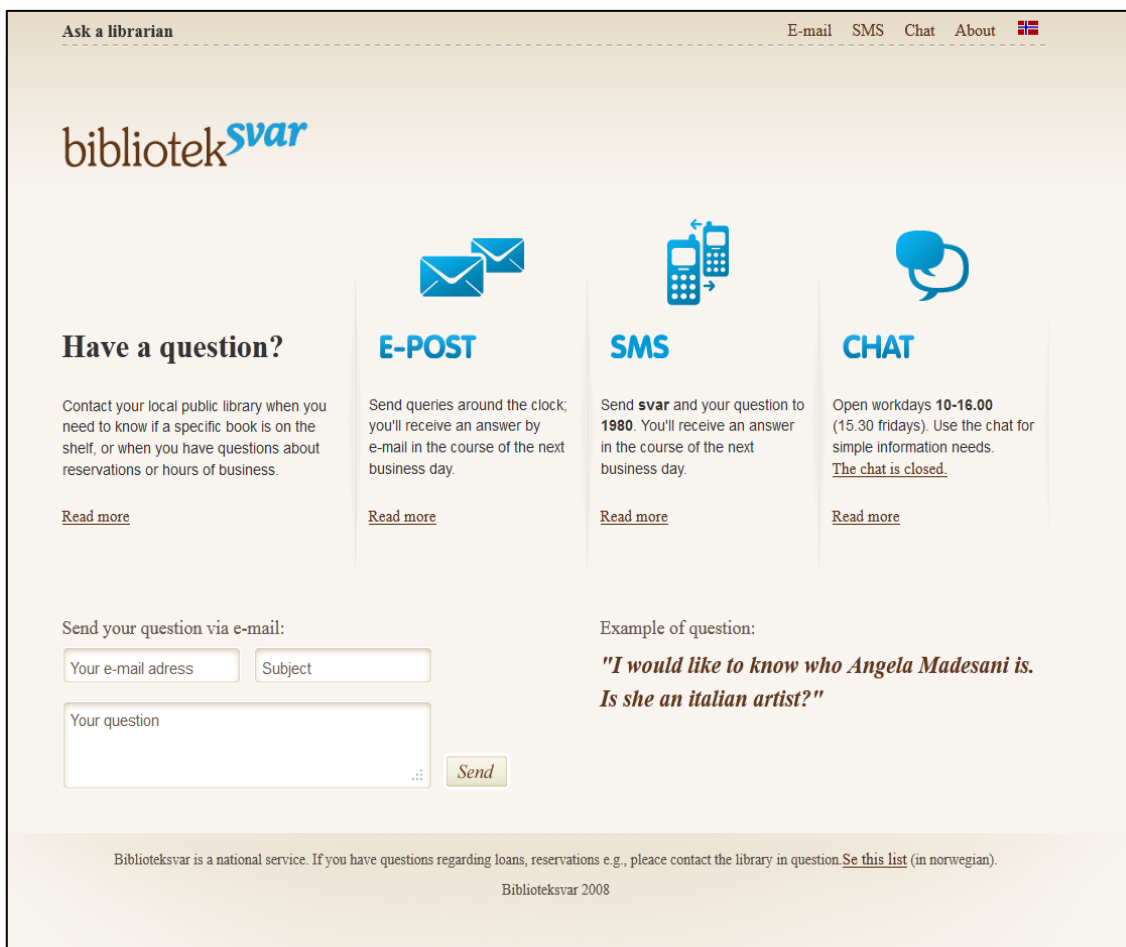


Figure 2: Interface of Biblioteksvar in English

2.2.7 Archives

The questions and answer which have taken place in the system were archived and they were available for future use. Staff of Biblioteksvar has finalized the publication of the archive from 1st October to 31st December 2010. By 01.01.2011 archive contains 11,466 published questions and answers which are available in the system.

2.2.8 Internal communications

All libraries that participated in the Biblioteksvar used the same software, eDialog24. The software provided an opportunity to use the internal chat. In essence, this was used for direct contact with the management of Biblioteksvar, but there was also an opportunity to communicate with other librarians who were online directly. As a participant in the service member libraries were able to connect to a mailing list. This

was the main information channel. In addition, the system had internal pages where project manager published important information to the network. The organization was relatively large and the way the services were organized made both communication and monitoring of the participant quite challenging.

2.2.9 Competence development

Biblioteksvar provide valuable experiences and competences to the participating libraries in terms of virtual reference work. By participating in Biblioteksvar, librarians were gained expertise such as search strategies and resource criticism. It was one of the reasons why many small libraries that had inadequate number of staff and tight budgets participated in the Biblioteksvar. Staffs gained a competence related to digital reference work, via networking on reference work.

It was difficult to follow up the entire organization, both practically and academically. This was partly related to the losing structure and internal communication as mentioned earlier. Due to lack of time on training of the staff there was a discussion whether Biblioteksvar would be responsible for training in digital reference work on the national level.

2.2.10 Conferences and meetings

From beginning until end of the project, many conferences and meetings have been organized by Biblioteksvar to maintain the services in a best way. Most of these activities held for participating libraries in the country, some of them were international conferences related virtual reference services that supervisor was attended (i.e. Internet Librarian International in London, UK).

2.2.11 Quality assurance

Biblioteksvar was highly depended on users' satisfaction and quality was a key element as well as a priority for the project. In order to evaluate the quality of the services Quality Group of the project made an extensive effort by going systematically through the responses that were answered by Biblioteksvar. Consultants from Oslo University College analyzed the materials for the preparation of a quality issue to provide information to the member libraries.

Also a guideless was prepared for the members of Biblioteksvar by the project management in collaboration with consultants. A User Manual was produced digitally and in print for the members to provide them practical tips in terms of VRS and explain their work responsibilities.

2.2.12 Cooperation with Oslo University Collage

JBİ (Journalistikk, Bibliotek og Informasjonsfag / Journalism, Library and Information Science Department) researchers / teaching staff participated advisory group of the Biblioteksvar, and it was an important contributor to quality of work done. Supervisor of the Biblioteksvar and some librarians worked for the Biblioteksvar were also invited by JBİ every year to lecture about Biblioteksvar in the reference field.

In autumn 2005, the Biblioteksvar had a pilot project with the Oslo University College, where nine students from second grade participated in chat service for 10 weeks. They received training like an internship and follow-up, and wrote a folder assignment at the end of their participation.

The project was very successful and became permanent in 2006, so that chosen of 2nd class students at Oslo University College; JBİ students had opportunity to gain practical experiences on the digital reference area. The scheme was also carried out for 7 weeks with 20 students in spring 2010 and outcomes was successful.

2.3 LITERATURE REVIEW

2.3.1 Introduction

The literature review aims to show the relevant studies and research from literature. There are some useful information resources available in the literature outlining important issues to be considered in the process of initiating and maintaining both Virtual Reference Service (VRS) and Collaborative Virtual Reference Services (CVRS). This review of the literature mainly focuses on Virtual Reference Services in general and Collaborative Virtual Reference Services. Furthermore benefits and issues of the collaboration were subtitled under Collaborative Virtual Reference Services.

In order to discover the most relevant literature in regard to this study, the sources of literature mainly derive from the electronic databases and books available via scientific databases. *Emerald, EBSCO Host, Taylor and Francis, Science Direct* and *Library and Information Science Abstracts (LISA)* have been used to gather the literature. In addition to subscribed databases, the resources from the Web such as proceedings, reports, organizational websites and blogs have been used.

2.3.2 Virtual Reference Services

Electronic communication has become drastically popular in the last decade. Virtual Reference Services have turned into necessity by the demand of the new generation. 75 % of new generation who 12-17 years old go online to use Instant Messaging (IM). They still use email, but they prefer IM to communicate with friends. By contrast, 66 % of online young adults, who 18-26 years old use IM (Kern, 2009). By these rapid changes in the digital environment, today's libraries are in a development in order to meet patron's information needs to remain effective. Therefore, libraries have started to initiate the virtual reference services via email, chat, web-based inquiry services, social-networking tools, etc. These efforts extended the traditional core reference function of the library past the reference desk to the desktop.

With users' demand for remote access to the library, online services have become the most heavily used offer (Pomerantz & Luo, 2006). Virtual reference services have brought new opportunities to library users. Patrons prefer to use virtual services because

it is quick, easy, convenient, reliable, helpful, available, requiring less intimidating interactions, efficient and anonymous (Radford, 2009). Especially young users feel more comfortable with virtual reference services since it is an anonymous environment (Mu et al., 2011).

The main purpose of the VRS is to help users find information as the traditional reference service, but the communication way and format of information resources are different (Yost, 2004), and it is completely technology based. The technology based services perform the same fundamental purpose: to provide human intermediation to a patron online (Lankes, 2003). Even though the technology has changed the way of the service delivery by libraries, as Bromberg (2003) indicated “Librarians have always been in the business of removing barriers between people and information. Web is only a natural expression of this core professional value” (p.31).

Lipow (2002) discussed why libraries establish virtual reference services. According to the author, libraries trying to accomplish followings through VRS: provide to best quality services to users who can or cannot come to the library physically, from out of the library; distribute the reference staffing and create staff efficiency; create a consortium with other libraries and improve the service quality through collaborations. The author indicated that all the ways end up with reaching to the users and meet their information needs.

Libraries and librarians are preparing themselves for the inevitable shift of communicating with users online. “The world of the libraries is changing, reference librarian is changing. As more and more patrons go to the Internet first to meet their information needs, libraries must be there to help them locate and obtain relevant information” (Kresh, 2002, p.20). Reference librarians are improving the skills and competences nonstop required as in the digital era and carrying the services to the users wherever they are.

Many studies reveal that libraries are not usually the first place for people who look for information, especially for the young generation since the fundamental impact of the Internet on information seeking behaviors of people. Libraries are dealing with this

new development and respond to the needs of users. “In today’s environment of easily available information from user friendly web search engines and conveniently accessed Internet sites, libraries can no longer continue to solely rely on traditional roles and models of service delivery (Connaway, Radford, & Dickey, 2008, p.28).

Providing access to information means communicating on multiple platforms, using tools such as instant messaging, web-based email services, social networks and so on (Stormont, 2010). However, synchronous communication ways such as IM have affected the reference librarians. As Jane and McMillan (2003, p.242) mentioned, “Offering a reference service online is a completely new and surprisingly challenging experience. Even experienced reference librarians found themselves nervous during the first few sessions”. Sharma, Kumar and Singh (2004) also discussed the advantages and disadvantages of virtual reference tools in their article. Authors said that main advantage of using chat reference is that it allows the user to continue staying online while getting reference assistance however, chat communication is only text-based and chat does not seem to be much more advantageous. On the other hand, while email based reference providing more complete answers to patrons and it offers users the convenience of asking for information or reference assistance whenever and wherever they want, but it has some limitation such as long response time, and difficulty to conduct reference interview (Sharma, Kumar & Singh, 2004).

Technology has made fundamental changes in the service provided by libraries. The changes in reference services from in person to virtual venues and from print to electronic resources led the today’s reference transactions to take place within a dynamic and rapidly changing information environment (Agosto, et al., 2011). The number of reference questions has decreased and users spend time to find answers on the Internet; libraries cannot compete with the commercial sector on the web since it is not a library's mission. Instead of competing with the internet, libraries should reach to user and remind them they offer free and effective service. This debate has been up for the last two decade, and it will not be ended since the libraries have a mission to hold the information and information resources for people. Librarians have been informing the community and trying to prove the fact that libraries are still the most trustful place for information (Lipow, 2002).

Lipow (2002) pointed out that Internet users are getting their question answered by search engines, and commercial services' representatives, or other web resources; however, people might prefer the expertise of a reference librarian, but the busy daily life of patrons lowered their sights. Therefore, reference librarians' expertise has moved on the web by virtual references services.

Regardless of the type, libraries from all around the world are providing reference services virtually to the patrons. As we have witnessed the changes in the digital age, and its reflections to the libraries, makes the libraries remain standing for every new development. The form of the reference services from 'desk' to 'desktop' is the most obvious proof of the happenings.

Lietzau (2010) emphasized that importance of the reference services in the library is well known by librarians. And he added that "Obviously, people within the profession feel strongly about reference work as a key component to successful libraries, regardless of library type. However, as libraries move forward with new services, it is important that they are making choices that truly meet the needs of their patrons."

2.3.3 Collaborative Virtual Reference Services

Advances in collaboration are parallel in the technology. Several libraries have looked to consortia to launch collaborative reference services (Oder, 2001). Collaborative virtual reference services started almost simultaneously with virtual reference services in libraries. There are many examples of collaborative VRS, regional, state-wide, national, or international. CVRS is an "agreement between two or more libraries to offer virtual reference services to each other's patron" (Kern, 2009, p88).

Inter-institutional chat reference collaboration has brought a new opportunity to libraries for reference services in the digital library environment. VRS services especially enabled online real-time interactions between the user and the librarian at regional or national levels (Kwon, 2007). Many libraries, especially small size libraries have introduced with real time referencing through being a part of a virtual reference consortium.

Recently there has been a great deal of interest in the concept of virtual reference services especially in the United States of America (USA). USA is one of the important headquarters of CVRS for many years in the world (Jane & McMillan, 2003). 24 hours / 7 days service possibility of statewide collaboration appeals the state libraries in USA towards collaborations. Different time zones between the states offered advantage to the libraries in USA. One of the first reference services which went online was the Electronic Access to Reference Service (EARS), initiated by the University of Maryland's Health Services Library in Baltimore, in 1984 (Kresh, 2002; Oder, 2001).

Library of Congress started to build collaboration on VRS in the beginning of the 20th century. The largest collaborative virtual reference service today is QuestionPoint, a joint effort by OCLC and the Library of Congress that is based on the Collaborative Digital Reference Service (CDRS). QuestionPoint is a virtual reference service, supported by global network of cooperating libraries worldwide, as well as an infrastructure of software tools and communications (QuestionPoint, 2012). QuestionPoint is a collaborative reference service which promises to enable libraries to provide a locally branded and customizable question asking service (Shachaf, Meho & Hara, 2006). QuestionPoint service is perhaps the largest and most geographically distributed collaborative virtual reference program yet produced (Truelso, 2004). QuestionPoint capitalizes on one obvious advantage of consortia efforts in virtual reference to organize and utilize a large pool of reference providers with particular areas of subject expertise. According to the recent reports, QuestionPoint has Members 1,814 Active Service Unit Profiles, 1,148 of them are 24/7 reference cooperative members and it serves in 47 different Languages (QuestionPoint, 2012).

United Kingdom (UK) has also a great background of collaboration for VRS, especially among the public libraries. Besides in the area of print resource sharing, public libraries have started to networking on web-based services for the patrons with the desire to forge a national partnership and to open up a virtual point of access to UK users. With the establishment of EARL (Electronic Access to Resources in Libraries), the national public library networking consortium in 1996, public libraries moved into the new surroundings of collaboratively creating and managing web-based services (Berube, 2003). In 2003, Ask Live! pilot team was established with core objectives such as “Trial

of a new type of service and software; Staff and user evaluation; Exploring a new service delivery model with the current Ask service; Exploring sustainability of the new service” (Berube, 2003, p.4). The collaboration was initiated by 12 public library authorities.

The English language is a great chance for collaboration among the countries where the English is the native language. The English speaking countries have the advantage of unique language for the collaboration in international level. Australia, New Zealand, UK, USA and other English speaking countries used this common ground for virtual reference collaborations as well as other library collaborations.

There are many other CVRS examples from different countries such as Denmark, Sweden and Finland. In Denmark, Danish National Library Authority established a collaborative reference service in 1999, with the vision that Danish libraries should play an important role in the citizen's information retrieval and that the service should be present on the internet (Daugaard, 2002). Biblioteksvagten is a nationwide collaborative which offers e-mail, web based, chat reference services to the Danish population in general. Biblioteksvagten was a model for other Scandinavian Countries. Sweden, Finland and Norway were inspired from Denmark, and they established their own national digital reference services because Biblioteksvagten has a good contact with these countries, and project managers have actively participated in several Scandinavian seminars and conferences (Daugaard, Fogh & Nielsen, 2006).

Sweden also has a consortium on virtual reference services among both academic libraries and public libraries and inter-institutional. It is called as “Ask the Library” services and it is a joint initiative on the national level. Public libraries and university libraries assist in information search for the patrons. More than half of the academic libraries in Sweden are members of the consortium. The public libraries of Sweden have offered virtual reference services over several years as well. In 1995, an e-mail service was started that now consist of 36 libraries. More than 15 of these take part in a consortium providing a chat service similar to the academic counterpart (Nilsson & Ilvered, 2007).

Libraries in one another Scandinavian country, Finland, have joined together in a consortium that provides national virtual reference services for its citizens. The name of the service is called as “Ask a Librarian”, which gives service in three languages: Finnish, Swedish and English. The consortium has more than fifty libraries, which are mainly public libraries as well as other libraries from all around Finland (Ask a Librarian, 2012).

Virtual reference services are widely regarded as a present-day innovation. The studies show that collaboration is occurring more frequently at all stages of the reference process and among all types of reference users and, it is believed that reference services soon is likely to become an even more collaborative process (Agosto et al, 2011). Successful examples of collaborations are setting off new initiatives for other countries and libraries are utilizing these models as the best practices.

The decision to be made is whether collaboration is right for the library. Collaborative virtual reference services and the technology hold great possibilities for extending access to vast stores of knowledge and information resources worldwide (DeHart, 2002). Virtual service can be practically integrated so it will add value to the national and local services. The national collaborative services can provide a model and a framework from which local services can be customized and benefited (Berube, 2003).

One challenge for current VRS is its low usage by patrons, despite the fact that many studies concluded very high user satisfaction and willingness to recommend the service. To increase the VRS usage, continuing efforts have been made in terms of improving quality of VRS, more librarians training, and collaborating with other libraries, in national and international level (Mu et al., 2011). Libraries have tried and are still trying new methods to meet the users’ information requirements and cooperation is considered as an effective way to reach to the users by many libraries.

The literature reveals that collaborations are generally among academic libraries and secondly public libraries. Due to rapid growth of the services, to know the exact numbers of consortia for virtual reference services is difficult but numbers of the collaborations are gradually increasing. As Vondracek (2006) pointed out, regardless of

academic library or public library, virtual reference service includes the similarities in reference delivery philosophy and the access to complementary subject collection strengths and librarian expertise.

2.3.3.1 Benefits of collaboration

The idea behind the collaborative service provision is that online networks of libraries will combine the power of local collections and staff expertise with the diversity and availability of libraries and librarians in the consortium (Truelso, 2004). Combinations of the each library's own richness and strengths in the consortium create an effective approach to the service.

With many reference desks experiencing a decline in the number of face-to-face transactions, libraries are being challenged to find possibilities for connecting with remote users through virtual reference services. While many of the libraries that offer real-time chat reference assistance have launched this service on a stand-alone basis, several libraries have chosen to participate in collaborative ventures to ease the impact of software costs and staffing for extended hours (Wright & Tu, 2008; DeHart, 2002).

The characteristic of a collaborative project attracted the participants for funding sources generally however, it was not intended only as a cost saving strategy (Kern, 2009). All the members of a consortium must benefit from the collaboration for a success. Some larger libraries may contribute to the service more than other libraries in terms of supervision, staffing, finance and resources. The libraries must feel that membership benefits for them and their patrons.

There are several important benefits to be associated with a collaboration. Benefits of the collaboration for a VR have been sorted out in a broad sense. According to the literature (Kern, 2009; Shachaf, Meho & Hara, 2006; Kwon, 2006; Berube, 2003; Chowdhury, 2002) collaboration is beneficial in *staffing, expenditures, collective money, assessment and administrative, expanded knowledge and expertise, collection, and working hours*.

The collaboration is a big chance for the participants, having a collaborative reference service in place that connects public libraries to other members gives libraries a technical support and personal networking infrastructure (Lavender, Nicholson & Pomerantz, 2005). Unique interface of the system allows member libraries to learn the software, take advantage of training. "Most importantly, it meant the librarians did not have to learn how to use a different system" (Vondracek, 2006, p.86). Generally collaborative reference services have been conducting based on one system and all the member libraries in the pool have the same infrastructure and interface.

Kwon mentioned the benefits of collaboration from the librarians' perspectives by stating that library users could get help for their information needs through the help of participating libraries in a reference consortium. Even when their local library has not provided the right information resources or the librarian is not able to supply the information which is demanded (2006). He also added, "libraries can deploy staff more efficiently by participating in a bigger pool and embrace otherwise more costly virtual reference services" (p.2). Besides. cost reduction, a member library of a consortium could answer difficult subject-based research questions more easily by referring the questions to subject specialists in other libraries in the consortium (Kwon, 2006). Therefore, collaboration brings a benefit by sharing experiences and exchanging knowledge with colleagues from virtually anywhere (Jin, et al., 2005). The idea was also supported by Berube (2003); she pointed out that collaborative service helps to expand the service coverage, while not adding an extra burden on staff. Further, participation at a national level allows local libraries to handle locally based questions and to refer other types to the national service. In addition to these, benefits from librarians' perspective were presented at Kris Johnson's (et al. 2012) article. According to authors, librarians are still responsible for finding, evaluating, and retrieving credible information for their users. Virtual referencing allows reference librarians to expand their scope and reach to the greatest number of users, and library staff learned most of reference skills by participating in virtual consortium, and they believed that they can develop these skills more quickly in a collaborative environment.

CVRS is useful for participating libraries in terms of the knowledge base. As Ciccone & VanScoy (2003) pointed out "If virtual reference staffs are primarily answering

questions and making referrals, then a knowledge base would be extremely useful and in the long run the time spent creating it would be worthwhile” (p.104). And also Kwon's research (2007, p.87) found it out "if most reference questions do not involve local knowledge or resources, or if those local questions are answerable by outside librarians successfully, the library will benefit by joining a consortium." Accumulated answers of the questions from users create an information bank, so that a treasure of knowledge was consisted by the process of the alliance.

On the other hand, the collaboration has greatly increased the visibility of libraries and has helped the libraries achieve their mission of providing public access (Stahlberg & Pinard, 2008). Promotions and marketing campaigns are one of the most challenging situations, especially in these days for the libraries. The collaboration has raised the voice of libraries within the community.

Apart from these benefits for libraries, some research revealed that CVRS is highly helpful for the library patrons as well. It was reported there were a high level of satisfaction among the chat reference users. Chat referencing was also noted to be effective in question answering (Kwon, 2007). Collaboration allows the users from any participating institution to engage a librarian in a real time chat (Wright & Tu, 2008).

2.3.3.2 Issues and challenges of collaboration

The virtual reference has brought not only benefits, but also several issues have emerged besides opportunities of virtual reference such as selecting a medium of the service, policy making, staffing, integrating the system in library enterprise, software and standards, cost (Lankes, 2003).

When libraries have decided to create a consortium for virtual referencing, each library should consider some certain points for the accomplishment. As Jane & McMillan (2003, p.243) emphasized “A successful cooperative partnership would require not only very careful selection of a partner ensuring a good institutional “fit”, but also for staff to have a very detailed knowledge of both sites’ policies, Web pages, databases and subject specialists.” This criterion concerns especially international collaborations or interdisciplinary consortiums.

There are a number of issues and challenges that were listed in the literature such as maintenance of the service and quality; local questions from other member libraries, databases and resources/licensing, communication, cooperation, hours of service, staffing and staff training, marketing and promotion, using the software, archiving and management (Kern 2009; Lavender, Nicholson & Pomerantz, 2005; Yost, 2004; Berube, 2003). Among these challenges, gap of subject expertise, staff training, technical difficulties, user orientation and promotion particularly came into prominence. In addition to these challenges maintaining local identity of each member library in the alliance considered as an issue (Vondracek, 2006; Parker & Johnson, 2003).

Matheson (2004) pointed out that collaborative nature of the project presented special challenges and unique opportunities to participating libraries. According to the author, collaborations generally cover some issues such as scheduling, software selection, policies, licenses, staff training, promotion within the service, reporting and evaluation. The cost is a very important factor and one of the most common issues in collaborations. The cost of the collaboration generally goes to the software, staff training, and promotion of the service (Matheson, 2004; Wright & Tu, 2008; Lankes, 2003; DeHart, 2002). It is an advantage to share the cost but in the same time financial distinctions of the members may cause inequality since each library is not contributing to the consortium in the same level.

Virtual reference has developed and changed to include not only e-mail, but also consortium-based chat reference, and now, instant messaging reference. Many virtual reference projects using chat software were successful and increasingly viewed as integral parts of reference services (Radford & Kern, 2006). However, there some complain from users because of slow transaction time and the lack of face-to-face interaction (reference interview) (Steiner & Long, 2007). The new generation is not very patient; patrons want to grt the information as soon as possible therefore, libraries may lose the users who are waiting in chat sessions for the response of the librarians, especially during the busy times of services.

The member libraries in the consortium for virtual reference services should have an effective communication not only with library patrons but also each other because

collaborative management becomes more challenging with each new member library to the consortium (Bromberg, 2003). The success of a collaborative venture lies mainly with communication of participants (Fletcher, Hair & McKay, 2005). Communication is especially important in the case of nationwide collaboration since its members are spread out geographically.

The capability of a consortium to handle local questions is important because successes of inter-institutional reference collaborations are belonged to this capacity. Conversely, as it was mentioned in *benefits of collaboration* section, “If a local library deals with a high proportion of questions that are answerable by its locally restricted resources and services only, joining the consortium would not be recommended” (Kwon, 2007, p.87). Libraries need to agree on policies and procedures when they are in a consortium. Single delivery of VRS is that a library determines its own policies and procedures; therefore, no compromises with other libraries are necessary, however, the situation is much more different when the collaboration is in subject (Boss, 2007).

The technology and users demand are changing by day and libraries are in a constant transition therefore, one of the biggest challenges faced by participating libraries is future sustainability of the collaboration (Bromberg, 2003). It is possible to withdraw from the consortium and it may cause collapsing of the services. Small libraries that cannot able to offer virtual referencing to the users may be highly affected from this scenario. The literature showed that there were many examples of unsuccessful collaborative initiatives, because of lack of financial support, lack of staff and neglect of users.

2.3.4 Summary of the review

Resources related to Virtual Reference Services in general and Collaborative Virtual Reference Services, and also benefits and Issues of the collaboration were reviewed in this chapter.

Although many new developments have changed the environments of the library, reference service has been a core of the library and it will be remained as it has been. Virtual reference service an innovative service in the libraries which is still under

development. Libraries are conducting the services in many ways through facilities of the web. Reference services vary by different libraries or countries, and manifestation of the services may look different in each region. But the service's mission is the same: to meet patrons' information needs.

Virtual Reference Service has been inspected through reviewing the selected literature. The studies and research showed that, virtual reference services have become necessity in the digital age and libraries both individually and collaboratively are building and running virtual reference services, most libraries have considered that VRS as a one of the best solutions to meet the users' information need so far. Many of libraries have joined consortia to give the best reference services while some of them stand alone. The collaboration for VRS comes forward in the literature as an important movement and fundamental need for the libraries.

The library professionals were considered as a master of the reference services in the center of all the process. Utilities and possibilities that were provided by technology enabled the librarians to improve the service quality and raised the competencies of the professionals. Therefore, reference librarians have carried out their duties in a virtual platform.

Collaborative Virtual Reference Service has introduced new opportunities as well as challenges to libraries and librarians. A collaboration allows to be utilized by many libraries in terms of economic and social perspectives. The literature displayed that collaboration for virtual referencing enriches the member libraries to maintain their positions in the digital age.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter presents the methodology and research design of the thesis. The chapter starts with the research strategy through explaining a case study theoretically and practically for the research. A qualitative methodology which was used as the basis of inquiry for this study was explained under the research design. The data collection methods which consisted of semi-structured interviews and an online questionnaire were introduced in the chapter as well as the sampling strategy. In addition, data analysis, research limitations and ethical considerations were also explained in this chapter.

3.2 Research strategy

The thesis is an instrumental case study, and mainly focuses on a single case. The case study research is a method designed to study the particular context and has a specific purpose. A case study is a study of a specific functioning system, which operates within certain boundaries (Pickard, 2007). The case study is selected as the purpose of the research to use the case as the tool in order to find out the answers to the research questions and to examine a particular phenomenon. In case studies the purpose is to investigate a particular circumstance or theory and the case itself becomes less important other than as a vehicle for the investigation (Pickard, 2007). The purpose of a case study is to provide an entire account of the case and in-depth knowledge of the specific through rich description situated in context (Pickard, 2007; Matthews & Ross 2010). This study investigated a collaborative virtual reference service by establishing a broad aim and identifying a number of objectives at the outset.

A case study research was chosen for the thesis in order to establish a focus on phenomenon and understand the situations which is related to object so that it can be referred over the course of study of the object. The goal of this research was to investigate on a Collaborative Virtual Reference Service in Norway and the research object in this case study was a collaborative work which was established and conducted

by public libraries of Norway. This research focused particularly on the issues related to the consortium of *Biblioteksvar*. The researcher investigated the object of the case study in depth using a variety of data gathering methods to produce evidence that leads to understanding of the case and answers the research questions.

The thesis is a case study in the context of a collaborative nationwide virtual reference service, Biblioteksvar (www.Biblioteksvar.no) and mainly focuses on the motivations and future perspectives of librarians who worked for Biblioteksvar towards collaboration and virtual reference services as well as facilitations and impediments of the collaboration.

3.3 Research design

The methodology of this research is qualitative. The decision to take a qualitative or quantitative approach should be based on the research questions (Matthews & Ross 2010). The research questions of this study mainly compromised with a qualitative approach. The research questions reflect the interpretive nature of qualitative research. The qualitative research questions are suitable for qualitative research because they focus on exploring the process behind to understand the opinions of participants (Hennink, Hutter & Bailey, 2011).

In this research open-ended questions were used in the interviews and in the questionnaire in order to gather richer responses and a greater insight into the rationale behind the participants' answers than a purely quantitative design would permit. The qualitative research provides detailed description and analysis of the quality, or the substance, of the human experience. "Qualitative research is an approach that allows you to examine people's experiences in detail, by using a specific set of research in depth methods such as interviews, focus group discussions, observations, content analysis, visual methods, and life stories or biographies" (Hennink, Hutter & Bailey, 2011, p9).

3.4 Data collection methods

Primary and secondary data were collected in this study. The primary data was collected through interviews and an online questionnaire. The secondary data was collected

through gathering of information from Biblioteksvar's web site and related documents provided by the supervisors such as annual reports, institutional statistics and other documentation from Biblioteksvar.

For this study initial data collection was started through interviewing key informants who were the supervisors of the service. The current and former supervisor of Biblioteksvar were interviewed during the data collection process. Interviewing of key informants was aimed to set up the base and to adjust the directions for the further interviews and questionnaire. They assisted for recruiting the remaining members of the case study sample. Through these interviews, the clarity of interview questions was tested and some of the questions were modified. After having initial informatory meeting, the pilot interview was conducted with librarians from Tønsberg Library (Tønsberg og Nøtterøy Bibliotek) in order to test the suitability of the questions. Tønsberg Library was chosen for the pilot interview since it was one of the founder members and key players of Biblioteksvar from the beginning.

3.4.1 Survey instruments

It was important from the outset to select a site that will provide rich and detailed sights, therefore multiple data collection techniques were applied and accessed to "artefacts and people holding relevant information about the case" (Pickard, 2007, p.86). A semi-structured interview and an online questionnaire were selected as data collection methods which allowed the researcher to learn about the insights and different perspectives of the participants.

3.4.1.1 Interviews

Interviews are one of the main data collections methods used by social researchers, providing the opportunity for direct interaction between researcher and the research participants. Interviews are used to find out more by asking questions in a wide range of context. Interview enables the researcher to elicit information, feelings and opinions from the interviewee using questions and interactive dialog through direct communication either face to face or at a distance via telephone or the internet (Matthews & Ross 2010).

Semi structured interviews are used to collect the data in wide variety of research design. They are most typically associated with the collection of qualitative social data when the researcher is interested in people's experiences, behavior and understandings and how and why they experience and understand the social world in this way. The researcher is interested in both information the participant can give about the research topic and how the participant talks about their experiences and attitudes. In other words, the researcher is interested in both the content of interview conversation and the way the participants express themselves – the words they use (Matthews & Ross, 2010, p.222).

The interview was chosen as a one of the data collection vehicles because it provides to researcher opportunity to gain participants' ideas related to the topic and participants' perspectives on the phenomenon so that the participants express their opinions openly. Interviews also allow discussing the theme between researcher and participants. In this study it was aimed to acquire the respondents' views and perception on the Biblioteksvar with the interviews.

The period of interview was started from February 28 to April 31, 2012. The average time for each interview was approximately 35 - 40 minutes. The interview was recorded via sound recorder device with the permission of interviewee; important ideas were noted by the researcher during the interview. In the beginning of each interview, researcher was introduced himself to the interviewee, and the aim of research and the anonymity issue for interview was clarified.

Due to the limited time and funding, it was difficult to conduct all interviews face-to-face by traveling to all of those places; therefore, only three libraries (Deichmanske, Tønsberg and Drammen Libraries) were visited for the interview. To interview the rest of libraries Skype was used as the main tool.

3.4.1.2 Questionnaire

Questionnaires are, perhaps, the most common way of gathering data from research participants. A questionnaire is a set of questions which can be answered by the research participants in set of ways (Matthews & Ross, 2010). Most questionnaires are designed to gather already structured data and so include a set of answers which

respondent can choose from, although some may include more open questions which allow the respondent to answer in their own way. Questionnaires were used in a wide range of social research situations and to find out about all sorts of social issues and phenomena.

The questionnaire was used for this research to get feedback from a large number of member libraries and to examine the general characteristics of a population, to compare attitudes of librarians from different libraries.

3.4.1.2.1 Questionnaire design and distribution

An online questionnaire was designed by online questionnaire software (www.esurveypro.com). The questions were developed and formulated after the interviews to cover substantial points as well as additional important points that were derived from interview findings. After the questionnaire was prepared the link to questionnaire was distributed to the sample through email with a cover letter. The questionnaire was sent to email list of Biblioteksvar on 12th of April by supervisor of the Biblioteksvar. A reminder was sent on 23rd of April in order to get more participants. On the 30th of April 2012 the questionnaire was closed and results were collected from software for data analysis.

3.5 Population of the research

The population includes librarians who worked for the Biblioteksvar in various public libraries in Norway. There were 55 public libraries that were participated in Biblioteksvar. The number of the participants has been decreased. When the research was started Biblioteksvar had 33 participating libraries in the consortium.

3.6 Sampling strategy

3.6.1 For the interview

The sample was chosen depending on research questions and nature of the data. This study is case study with qualitative approach. Purposive sampling is virtually synonymous with qualitative research (Palys, 2008).

The purposive sampling technique was chosen as sampling method. Researcher established a sample framework before sampling began. “Purposive sampling approach is generally associated with small, in-depth studies with research design that are based on the gathering of qualitative data and focused on the exploration and interpretation of experience and perceptions: this includes case studies...” (Matthews & Ross 2010, p.167). Purposive sampling represents a group of non-probability sampling and people are chosen with purpose in this approach. Also it is “known as judgmental, selective or subjective sampling, purposive sampling relies on the judgement of the researcher when it comes to selecting the units (e.g. people, cases/organisations, events, pieces of data) that are to be studied” (Pickard, 2007, p.64). There are two approaches to purposive sampling: a priori criteria sampling and snowball sampling. “A priori criteria sampling is an approach which establishes a sample framework before the sampling begins, whereas the snowball sampling is an approach which takes an inductive approach to ‘growing’ the sample as the research progress” (p. 64).

Sampling for this study was based on purposive sampling therefore, libraries were selected based on their characteristics. For that reason, the participants were chosen among member libraries those who were actively involved in the Biblioteksvar.

The sample for this research was decided with the key informant. The sample was chosen according to their role in the consortium and communication channels that they used with the users to ensure the variety. These libraries were both large and small size libraries in the consortium. The libraries were identified and listed in their groups according to their role and size in the consortium. The most contributed / large size and less contributed / small size libraries were chosen among the all participating libraries of Biblioteksvar.

As it was mentioned earlier the number of the participating libraries of Biblioteksvar was 33 when the research was launched. The system was started by 55 libraries and in the course of time some libraries withdrew from the system. While eight librarians from eight different participating libraries were selected as a sample for the interviews from the entire population, all the current members were invited to respond the questionnaire.

3.6.2 For the questionnaire

As it was mentioned in the population of research, Biblioteksvar had 33 participating libraries in the consortium when the research was started. In total, 55 public libraries were participated in Biblioteksvar from beginning to end. Since the population was small it was possible to consider using all of them as a sample so that the questionnaire was disseminated to all the population.

3.7 Data analysis

Essentially qualitative data analysis involves a process of immersion in data, through which you can identify and interpret the experiences of the participants (Hennink, Hutter & Bailey, 2011). The discourse analysis is a qualitative method that has been adopted and developed by social constructionists. The discourse analysis is popular in many social sciences and “can be applied conversations, letter, emails, television programmes, documents, archives, and many other things” (Matthews & Ross 2010, p.391). In this case it was applied for conversations of interviews and questionnaire results. The recordings were transcribed manually immediately after the interviews. Significant parts of the conversations were cited in the narrative forms and quoted directly from the recordings. The findings were presented in descriptive form with quotations and narrative interpretations. The quotations were kept in their original form and were not edited by the researcher. Generally quotations which were the most frequently mentioned and provided varieties were added in the data analysis chapter while the duplicated conversations were eliminated.

The data which was collected via survey was sorted into different categories and classified thematically and also all the data which were gathered via interviews, questionnaire and data from Biblioteksvar’ web site and annual reports were used to bring out a complete picture of the study.

3.8 Research limitations

Biblioteksvar which was the case for this research were terminated during the research process because of financial problems and organizational issues. This happening might influence the thoughts of the participants of survey and the results indirectly. However,

as Pickard (2007) pointed out, qualitative case studies can grow beyond the original aim(s) of the research once issues identified and discoveries begin to surface. Therefore, the research has focused on the purpose of the research even there were some issues which could distract the researcher during the research.

Due to the limited time and funding, it was difficult to conduct all interviews face-to-face by traveling to all of those libraries around country; therefore, only three libraries which were in or nearby Oslo were visited for the interview. To interview the rest of participants online interviews were conducted via Skype. An online interview may cause some disadvantages for example lack of non-verbal clues and facial expressions and interviewees may not be able to give their full attention to the conversation through online interviews.

Another potential risk might occur from the language barrier, since the interviews and the questionnaire were designed in English, for this reason the interviewees might not express their thought clearly against the questions. To overcome the language barrier and to gather more fruitful data, participants were allowed to respond to the open ended questions in Norwegian in the questionnaire if they wish.

3.9 Ethical considerations

Ethical considerations in qualitative research may be more significant due to the nature of qualitative research because qualitative research methods are applied to get to know perceptions, beliefs and feelings of people and researcher want to hear participants' voices, to achieve this, and researcher should establish a trust relationship with the participants (Hennink, Hutter & Bailey, 2011)

The main ethical considerations in this research were connected with conducting interviews. The purpose of the research was explained to all interviewees and all of the participants who took part in the research project were asked to seek their consent for recording their voice. All participants were ensured that acquired information will be kept secure by making the data anonymous and the information got from participants will be used only for the thesis.

For this research the informants not disclosed to others and data were anonymized to ensure privacy of the participants. In data preparation all the identifiers were removed from the transcripts to preserve the participant's anonymity.

CHAPTER 4: DATA ANALYSIS

4.1 Introduction

This section presents and analyzes the findings of the research. The results of the interviews and the questionnaire were presented and analyzed in this chapter. The findings were categorized thematically and presented under sub headings in accordance with the stated objectives. Quotes from informants and interviewees were cited as they were written in the transcription of the interviews and questionnaire results.

4.2 Informants' background

4.2.1 Interviewees

8 librarians who were charged for Biblioteksvar from various public libraries of Norway - *Tønsberg and Nøtterøy Library, Stavanger Library, Deichmanske Library, Larvik Library, Drammen Library, Trondheim Library, Bergen Library and Sandefjord Library* - were interviewed. Besides these informants current and former supervisors of the Biblioteksvar were interviewed as key informants.

4.2.2 Questionnaire participants

The questionnaire was distributed to all member libraries of the Biblioteksvar. A link of the online questionnaire was emailed to 55 member libraries via a mailing list of Biblioteksvar. 19 of them were responded to the online questionnaire.

4.2.2.1 Number of the registered users and staff

Table 4 presents the number of the registered users: the number of the staff who were involved in Biblioteksvar from each member library: period of participation in Biblioteksvar and communication channels which were often used to answer the questions by member libraries.

Table 4: Number of registered users and library staff, participation year of libraries and communication channels used for Biblioteksvar

No. Library	No. of the Registered Users (Approximately)	No. of Library Staff involved in Biblioteksvar	Participation year in Biblioteksvar	Communication Channel
1	1.000	1	1-3 years	Chat & E-Mail
2	90.000	12	10-12 years	Chat &E-Mail &SMS
3	10.000	4	10-12 years	Chat
4	650	1	1-3 years	Chat
5	10.000	8	10-12 years	Chat
6	No answer	4	4-6 years	Chat
7	No answer	1	4-6 years	E-mail
8	No answer	8	10-12 years	Chat & E-mail
9	No answer	5	1-3 years	Chat
10	130.000	6	4-6 years	Chat &E-Mail &SMS
11	15.000	2	4-6 years	Chat
12	12.000	2	1-3 years	Chat
13	22.000	3	7-9 years	Chat
14	4.000	2	7-9 years	Chat
15	No answer	5	10-12 years	Chat
16	20.000	4	1-3 years	Chat
17	3.500	4	1-3 years	SMS
18	7.000	1	4-6 years	Chat
19	30.000	1	4-6 years	Chat & E-mail

As it is seen from the Table 4 the number of registered users differs from library to library in the consortium. This implies that there were different sizes of libraries that participated in Biblioteksvar. According to the findings the number of the staff who were involved in Biblioteksvar differs from library to library and the range was between one and twelve. The maximum number of staff who was assigned for Biblioteksvar from one member library is twelve while the minimum number is one. The number of

the staff assigned for the Biblioteksvar was not proportionate to the capacity of the library. Some libraries that have more registered users than others appointed less staff for the Biblioteksvar. It was also found out that libraries were generally communicating with patrons by using one communication channel. Just few of the member libraries were using more than one communication channels.

4.2.2.2 Participation period of libraries in Biblioteksvar

As Figure 3 displays below, 6 libraries participated in Biblioteksvar for 1-3 years while another 6 of them for 4-6 years. 5 of the member libraries have participated in consortium almost from beginning until the end of operation (10-12 years). Two of them have involved in Biblioteksvar for 7-9 years. The findings asserted that majority of the libraries (17) have been participating in Biblioteksvar for 1-6 years.

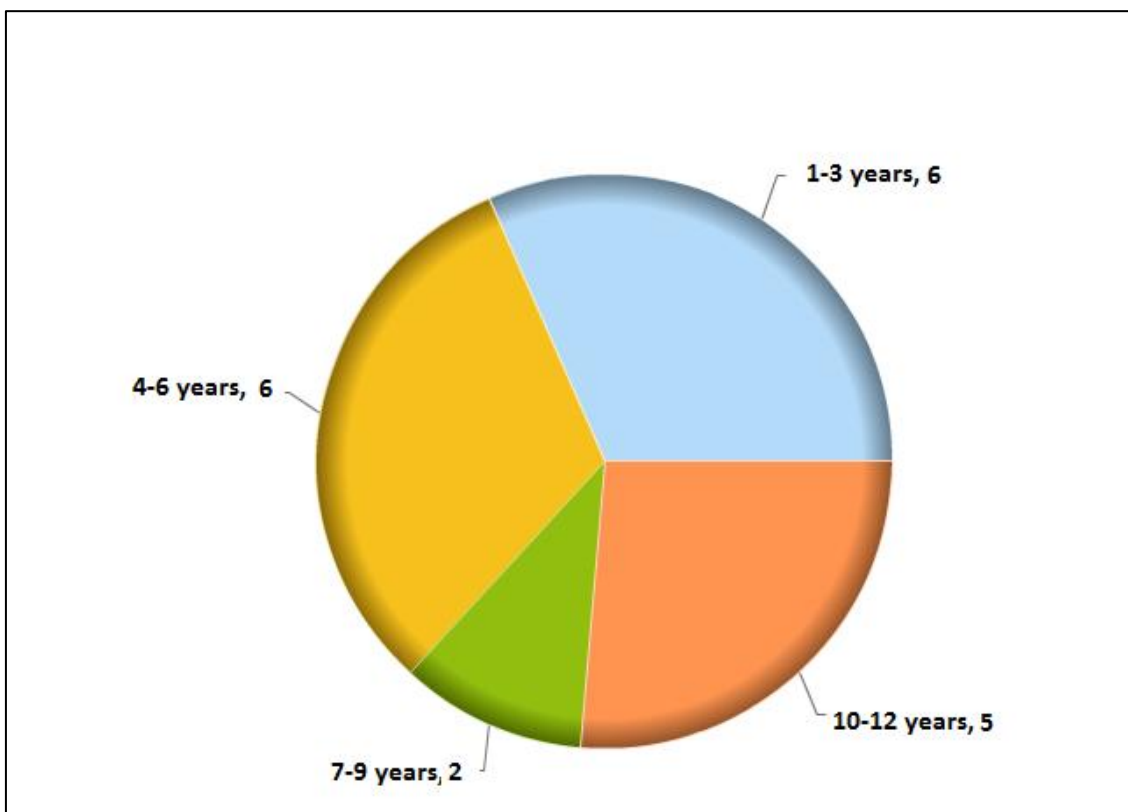


Figure 3: The participation period of member libraries for Biblioteksvar

4.2.2.3 Communication channels which were often used to answer questions by member libraries

Biblioteksvar provided to patrons a way to have a dialog with a librarian through internet Chat, SMS, or an Email. As Figure 4 demonstrates the majority of participant libraries (65%) answered the questions via Chat channel in the consortium. 23% of them responded the inquiries via E-mail while 12% of them via SMS (Text message). Some libraries used more than one communication channel in the same time while the minority of them used only one channel.

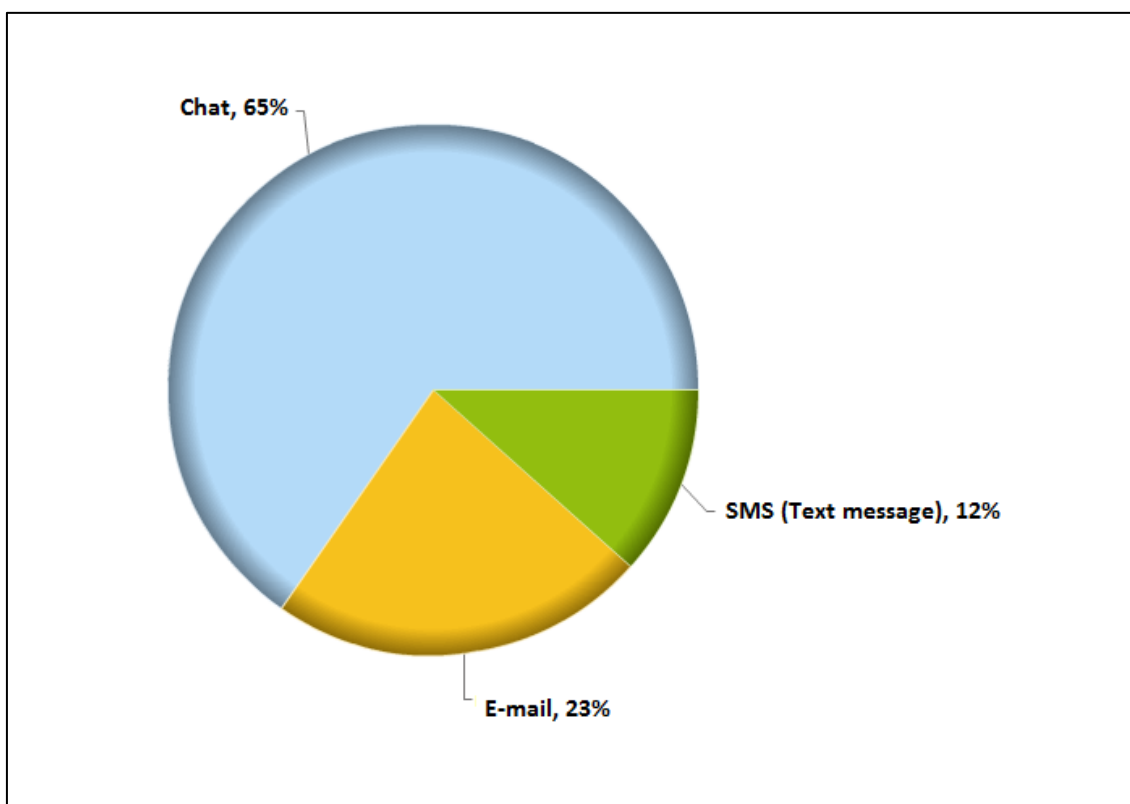


Figure 4: The communication channels which often used to answer questions by member libraries

4.3 Interview results

4.3.1 Motivations of libraries for Biblioteksvar

Informants were asked about their motivations that led their libraries to participate in a collaborative virtual reference service. It was found out that Biblioteksvar was a

national collaboration of public libraries for virtual reference services therefore, the libraries were highly eager to participate in the collaboration so that they could contribute in a national service. According to the informants most of the member libraries took the decision to be part of the Biblioteksvar for “Cooperative Volunteerism” (*Dugnad in Norwegian*).

The findings revealed that many public libraries in Norway had no synchronous interaction facility with patrons before Biblioteksvar. They used generally email and web-based forms for virtual referencing. Biblioteksvar offered them an opportunity for diversity which includes new channels such as chat referencing. According to some informants to be able to communicate with users through chat and to interact with them simultaneously was very important therefore, libraries were motivated to take part in the collaboration.

“Before Biblioteksvar there was no chat facility in the reference section of the library, there was only email based reference service. To have a chat opportunity for the information and reference services was an important reason to be part of a consortium.” (*Informant #1*)

”It was necessary to interact with customers virtually and Biblioteksvar was offering multiple virtual reference services to its members.” (*Informant #2*)

To develop virtual referencing and improve information services by transforming from a traditional way to a virtual way and to be able to give effective virtual reference services to the library patrons as well as to capture new user groups were considered as a significant motivation for the collaboration by many participants.

”We needed collaboration; it was the only way to have virtual referencing. Users must always get best answers in a short time from the library. It was one of the most important motivations.” (*Informant #1*)

”It was promising the possibility of reaching to several users and maybe other users than the traditional user groups of the library.” (*Informant #6*)

The responses received from informants show that librarians were aware of transition period of libraries in the digital age and they were motivated to contribute to development of libraries via collaboration.

”We needed to learn more about the digital library world, now many resources are available on the internet. We are very good at printed books as librarians but in online resources I can’t say that we are that good.” (*Informant #7*)

Two informants pointed out (*#1, #4*) that Biblioteksvar was a new and an interesting as well as an exciting service for their libraries, the collaboration drew attention of the libraries in terms of innovation. Libraries were eager to learn about new tools of virtual communication channels.

”It was a new system, and librarians are generally curious people and they want to learn to be in control of managing information.”(*Informant #7*)

In the consortium there were various sizes of libraries, even small size libraries which couldn’t run the virtual reference services by themselves on the account of inadequate staff and lack of funds. As some of informants indicated (*#3, #5, #7*) altruism was one of the most significant reasons to participate in the consortium. Some informants who were belonged to respectively larger libraries than others in the consortium indicated that they wanted to help small size libraries by participating in consortia so that virtual reference services would be disseminated in every region of Norway.

”Our library is a big library but in Norway there are many small size libraries which cannot afford to manage the virtual reference services alone, that’s why we wanted to be part of the project, to disseminate the power and balance the virtual reference services in Norway.” (*Informant #3*)

Biblioteksvar worked based on a software which enabled a virtual communication between users and librarians. The expenses of this software were covered by the Biblioteksvar. To own such a system for virtual referencing was not possible alone for a library since the public libraries do have a limited budget therefore, the libraries wanted to benefit free charge of software by participating in the consortium.

”Public libraries in every region of Norway are funded by their own municipality; the budget allocated for libraries would not be enough to have such a program individually.” (*Informant #1*)

”Norway is a wealthy country but libraries are in the top of the budget cuts list, without Biblioteksvar one single library wouldn’t afford it.” (*Informant #2*)

According to the informants, many of member libraries were significantly motivated to participate in Biblioteksvar since it was a National Service. Also most of the members were interested in facilities of Biblioteksvar in terms of virtual referencing such as instant messaging. Libraries were aware of the requirements of the digital era and user demands therefore, they were ambitious to adapt to the transformation of information services from traditional reference to virtual reference.

4.3.2 Anticipations of libraries from Biblioteksvar

Some public libraries preferred to participate in a collaborative alliance to meet information needs of the people in Norway via Biblioteksvar. Informants were asked about anticipated benefits from Biblioteksvar. Most of the participants had high expectations from collaboration in terms of effective virtual reference services.

“We hoped that we would have a comprehensive and an effective virtual reference services by using different communication channels for the reference services.”
(*Informant #4*)

The majority of informants mentioned that they were expected to raise the competencies of the library staff in terms of virtual referencing by using more electronic information resources and new communication channels.

“Online information resources would be in use much often than printed collection by virtual reference services. We could improve our information searching skills through using online resources. And also Biblioteksvar was a good opportunity to learn about new tools for virtual conversation, and we believed that it would bring along benefits to the librarians in terms of searching quality information skills online.” (*Informant #2*)

”We were expected that with Biblioteksvar, learning skills of the librarians would increase; and they would be much more familiar with electronic resources.”
(*Informant #7*)

“To gain virtual reference skills is very important in digital age, the library had only traditional reference desk, with the Biblioteksvar the librarians would learn about online searching skills.” (*Informant #8*)

“Virtual reference services first time would be introduced to many libraries and librarians by Biblioteksvar. Many library directors were convinced that the Biblioteksvar would increase the competences of the librarians and would facilitate them in terms of virtual reference services, online communication and

electronic resource usage. Librarians would be gained knowledge and criticism about online resources.” (*Keyinformant#2*)

As it can be understood from opinions the of participants, the librarians believed that Biblioteksvar would increase the skills of the librarians and they were expected to increase the competencies of library staff in respect of virtual reference services via collaboration.

Biblioteksvar comprised of several public libraries around Norway and the core of the project was based on solidarity which was aimed to connect the libraries in terms staff expertise for the virtual reference service. Most informants indicated that they were expected to benefit the expertise of staff who worked for the consortium.

“We were expecting to take advantage of knowledge of library professional from other libraries.” (*Informant #2*)

Libraries were anticipated being more visible on the web and being reachable easily by patrons. They were in expectation of increasing the reputation of the libraries as well as publicizing of the virtual reference services via Biblioteksvar.

”Public libraries would able to reach a lot of users that was not much possible in traditional way.” (*Informant #7*)

“A link to the Biblioteksvar was appeared on the main page of the library website with this library would have a new face.” (*Informant #2*)

To have an effective virtual reference service and to increase the competencies of library professionals via Biblioteksvar were highly expected by member libraries. Librarians generally found themselves good at reference the desk however, some of them considered that they needed to learn about virtual reference services. Therefore, they were expected that Biblioteksvar would increase the skills of the librarians. And also they thought that it would be an efficacious way to publicize the library services within community and they were looking forward to have a widen access to user community at all levels.

4.3.3 Impediments faced by librarians in Biblioteksvar

The participants were asked to respond to ‘what were the obstacles of collaboration?’ The libraries came together to establish the goals of a collaborative virtual reference service. As several informants mentioned, in the beginning there were not much libraries in the consortium and it was not easy to run the collaboration effectively. Informants had some hard times because of inadequate number of participant libraries in the consortium. The number of the staff was not enough to run the service as required.

“There were not much libraries in the beginning of formation, we were struggled to get enough libraries. We thought that it was not much possible to implement the project since inadequate number of staff.” (*Informant #1*)

“Staff issue was a big obstacle in the consortium, there was not enough staff for the shifts. Especially high volume of the chat inquiries crated pressure on staff.” (*Informant #5*)

“We were few librarians who work for Biblioteksvar when we started, to make the service much more effective was not possible, for example the opening hours of the service could have been better with contribution of more libraries and librarians.” (*Informant #6*)

Several informants indicated that librarians were already busy with their routine duties. Membership for Biblioteksvar was required busy shifts and some responsibilities. In each member library generally one or two librarians were assigned for the Biblioteksvar therefore, it was not easy to manage the time table of reference staff for providing the service for Biblioteksvar, especially for the chat services. The results revealed that the main reason of this situation was inadequate number of reference staff.

“The time table was a problem, to assign librarians each week for Biblioteksvar at the same time was an issue; it was a peak time for the library, so it was hard to manage the staff schedule for the duties.” (*Informant #7*)

“Amount of the work hours was much, number of the library staff was not, and librarians were already busy with their desk shift, to maintain the service needed more staff.” (*Informant #1*)

“Answering the questions was extra work for the staff, they had to deal with their daily job besides questions from Biblioteksvar, and they didn’t have enough time to do both in the same time.” (*Informant #3*)

On the other hand few participants pointed out that handling the shifts and following up the duties were not easy as it is explained below:

“Library staff from other libraries may not be on the duty even they supposed to be online for the users. So it was not easy to control and commit them when they are not on the duty. Some librarians didn’t fulfill their responsibility.”
(*Informant #1*)

As it was mentioned earlier many public libraries started to use chat referencing by Biblioteksvar. Learning the chat service tool and adapt to a new technology for some librarians took some time. Some extra training was needed for those who were not familiar with the new technologies.

“In the beginning it was stressful to answer questions through chatting, in such a short time, when the users are waiting for the answer, librarians get stress to work in a short time. They felt pressure. Technology made some librarians little bit nervous, they scared of the technology.” (*Informant #1*)

“Chat services was not natural for some librarians, it was also related to age of the librarians. They were not familiar with the system. So, special training required for the librarians to able to use the software.” (*Informant #5*)

Biblioteksvar was offering its services to all population of Norway and librarians were receiving many different questions from the different regions and facing a lot of inquiries on various subjects. The variety of the inquiries called for expertise in some occasions to provide best answers.

“Sometimes you cannot give a satisfactory answer to users who asked very special question since the librarian on duty may not able to cover the topic. But in some occasions librarian might be interested in the topic personally, then it would be a good match of users and librarians. Of course the librarian who is on duty could answer the question but when the matching is fit, user may get much more detailed information about the topic.” (*Informant #2*)

”Another problem was the variety of the questions. Since the Biblioteksvar serve to all population, any kind of questions was asked by users, so the team had to decide to draw borders of the capabilities of answering system.” (*Informant #1*)

Local questions were considered as a problem by some informants. The staff on the duty had to handle the questions submitted by users who did not realize that they were

not contacting their home libraries on the chat and they were asking the questions which concerned to their own library such as opening hours or circulation rules. Also sometimes libraries received the questions related local issues via email service which were disseminated from central pool.

“Some questions from pool to the libraries can require local expertise or related to local library for example local collection or circulation inquiries so these type of questions return back to pool to be addressed to the relevant library. Hence users have to wait until get the correct answers.” (*Informant #2*)

“To deal with local questions of other libraries’ user was time consuming, the users sometimes don’t have any idea where they ask their question, they thought the questions go to their local library but the fact is that it is not working like this and they don’t know it.” (*Informant #3*)

In the collaboration, there were some differences among libraries and librarians. Not only different backgrounds but also competences level of the librarians from different libraries was a great opportunity, however, some informants considered it as an obstruction.

“Differences among librarians concerned me because everybody is not the same and there is no standard quality of the service.” (*Informant #4*)

According to the informants, there were some disadvantages of participation in a consortium. Member libraries of the Biblioteksvar considered the inadequate number of libraries in the consortium and lack of staff in the member libraries as main impediments of the collaboration. As it was mentioned by many librarians, lack of technical skills of information professional and technology phobia of staff were caused some difficulties in the consortium. Various types of questions were regarded as obstacles as well as local questions.

4.3.4 Strengths of Biblioteksvar

The interviewees were asked to share their opinions about the strengths of the Biblioteksvar. Many librarians who worked for the Biblioteksvar had great feelings and were happy with the project. Most of the informants had positive comments regarding Biblioteksvar; especially in terms of raising the competencies of the library staff.

“If I had not started to work in this project I would not be very good at electronic resources and internet. And it also increased my curiosity. I motivated myself to be more updated for my users in many fields. I have been following the news much often than before. It was broadening my sights.” (*Informant #1*)

“The library staff got better at using electronic resources and information search skills on the web; it was good to gain some knowledge and skills on the source criticism and evaluation of electronic resources.” (*Informant #3*)

“Biblioteksvar increased the competencies of the staff, librarians have learned to communicate with users online and they became experienced on virtual referencing.” (*Informant #5*)

“The system encouraged the librarians to be updated to follow current trends in library and in general for the patrons; the librarians caught the requirements of the digital age, Librarians have become more confident, and gained wide knowledge.” (*Informant #7*)

“Librarians have become more skilled in terms of search skills on the internet and these skills were reflected to reference desk.” (*Informant #8*)

For participating libraries some courses and conferences were held when the project was initiated. Member librarians were given conferences and seminars related to the virtual reference. These events contributed to the librarians both professionally and socially.

“The conferences which were organized by Biblioteksvar helped us to learn about new virtual reference services and technologies.” (*Informant #4*)

Biblioteksvar created a good networking among member libraries. Most of the informants mentioned that Biblioteksvar interconnected the libraries and librarians in the consortium and it created an information and expertise sharing mechanism among the libraries. According to the informants mutual information and knowledge exchanging atmosphere were created via collaboration therefore, Biblioteksvar was a mutually beneficial partnership.

“Libraries learned a lot via Biblioteksvar and they applied in the local library what they learned from collaboration.” (*Informant #7*)

“We got a chance for an effective networking thus we were getting know many colleagues around the country. With small amount of time, we got many opportunities; we were getting benefits from other libraries works.” (*Informant #4*)

“It was a great opportunity consulting to the colleagues. The expertise of the librarians was created a knowledge base. For example there was one colleague in the consortium who is expert on Chinese culture and literature. And I was looking for some information about a Chinese author so I was able to find the book thanks to my colleague.” (*Informant #2*)

The majority of informants emphasized that library professional provide qualified, healthy and professional help for users so Biblioteksvar was a good information hub and access point against untrustful information available on the web.

“It is very good to have a way to access to Norwegian library system. Even users do not know how to reach to library; Biblioteksvar was an access point for the users. It was a hub for the information.” (*Informant #4*)

“This system was very useful for users. Users search for information on the web; it was a good service against untruthful information floating on the web.” (*Informant #1*)

“The main user groups of the Biblioteksvar were from mainly young generations, and it was a great chance to catch these users, and show that the libraries can provide information for them on the web, as does other web resources or better than them. They grew up with Internet.” (*Informant #3*)

The questions and answers which were circulated between users and library staff have been accumulated in the system’s archives. A ‘knowledge pool’ was created by these previous answers in the system and both librarians and users had access to this answer bank.

“The answer bank was open for users too in some extent, so users could see the asked questions and answers previously.” (*Informant #4*)

“Being able to looking up previous answers from answers bank is an advantageous part of system. Sometimes same questions were asked by different users. So these kinds of questions answered in a short time and it doesn’t take the librarian’s time.” (*Informant #2*)

According to the informants Biblioteksvar have increased the reputation to member libraries to a certain extent and help to promotions and marketing movements of the libraries. The library gained new user groups via Biblioteksvar and reference services of the librarians have become more available for users.

“It was modernity, after collaboration library took place in the local newspaper so it was a very good change to promote the library.” (*Informant #1*)

“Biblioteksvar increased the reputation of the libraries and made the library more important place to look for information from users’ perspectives.” (*Informant #5*)

“Collaboration has made many libraries much more visible on the web and libraries in Norway have got one more point to be good information stores for Norwegians.” (*Informant #3*)

All informants commented on the project positively and they indicated that Biblioteksvar helped to transfer the reference services from desk to the desktop and allowed to users to submit their questions electronically and anonymously. Many participants believed that Biblioteksvar gave the users much more possibilities than ask a librarian services before.

“Chats became available for users by the Biblioteksvar. It was time to use the instant messaging for communication with users.” (*Informant #1*)

“Thanks to the Biblioteksvar we gave possibilities to the users to ask to library whatever they want without coming to library.” (*Informant #2*)

“I believed that library got much more inquiries especially from teenagers since it was anonymous services.” (*Informant #7*)

“Another good thing about the system it was totally anonymous, so users’ privacy was protected.” (*Informant #1*)

Biblioteksvar had a unique system, a unique interface, and infrastructure. According to the informants, the system was satisfactory for librarians in terms of usage, except some librarians who had technology phobia.

“The librarians adapted to Biblioteksvar easily after a short period, staff was comfortable to use the system and able to answer the questions from users electronically.” (*Informant #7*)

“There was only one interface of Biblioteksvar so it was a good facility, all of us learned the system once and we all know the system all together.” (*Informant #1*)

“The software worked quite well. And librarians were trained about Biblioteksvar, technically and professionally. Technically application worked well so there was no adaptation problem for me.” (*Informant #2*)

With the Biblioteksvar some small size libraries in Norway were facilitated in terms of virtual reference services through contributions of other larger member libraries. As it was mentioned in the motivations sections some small size public libraries needed more staff and budget to run virtual reference services therefore, they benefited from collaboration. And also libraries were happy with the Biblioteksvar since it was free of charge. Libraries were not charge of the cost of the software.

“It was an important service for the small size libraries where only one librarian works.” (*Informant #1*)

“It provided a huge profit to libraries that possibilities are limited.” (*Informant #4*)

Biblioteksvar was regarded as an effective virtual reference project by many member libraries. It was a handy system in terms of usage and access. And also the system didn't require a registration, so user could submit the inquiries anonymously. With the Biblioteksvar most of the librarians from member libraries got experiences on virtual referencing and synchronous interaction with users. Besides, electronic resources have been used more frequently and libraries got experiences on electronic resources. Biblioteksvar has created an atmosphere where the all the member libraries could be in a communication and in a solidarity. Furthermore, some public libraries increased their reputation within community; they become more visible on the net.

4.3.5 Weaknesses of Biblioteksvar

The interviewees of the survey were asked about their opinions towards the weaknesses of the consortium. Almost all informants had unfavorable thoughts on the organizational issues of Biblioteksvar. They indicated that the organizational issues led the project down and brought an end to the Biblioteksvar. Many of them believed that system would be better if the project got continuous support from administration at the national level.

“Such a national service only could be survived under national authorities. National library should have taken the responsibility from beginning, as in other countries. It should be controlled and managed within the national library.” (*Informant #1*)

“Lack of support from authority (national level) in terms of financing was weakest part of the project.” (*Informant #4*)

One of the informants pointed out that the lack of communication between management level and member libraries affected the project.

“We should have got some feedback from administration and we should have been in a dialog with the administration. If we had in a dialog we could take precautions and make changes which were required and thus we could maintain the system.” (*Informant #8*)

The libraries came together to contribute to a national reference service voluntarily. The aspiration of the libraries has not remained as it was in the beginning of the project as one of the informants mentioned:

“It was inspirational and motivating activity, and librarians learnt a lot. Enthusiasm for the project has decreased among members. The project has lost its importance gradually. Libraries’ attention and interests towards the project have become less.” (*Informant #1*)

According to the informants, with Biblioteksvar many public libraries retrieved prestige in Norway however, the system was not well known within community. Promotions of the system were not very successful and awareness of the users was low.

“Biblioteksvar was a hidden service and users were not enough aware of the system. Biblioteksvar was not the first place for some user to look for information. Lack of promotion of the service was a problem and it would be great if the services well known throughout the country.” (*Informant #2*)

One informant suggested changing the name of the system.

“I don’t think so that Biblioteksvar was the best name for this service. It could be more informative name.” (*Informant #5*)

A large number of the participants indicated that the main users of the Biblioteksvar were school children therefore, context of the questions were in a school setting and these inquiries were not include in serious reference questions.

“The questions were generally facts such as opening hours. Lack of the quality reference questions from users, users’ profile emerged from teen agers.” *(Informant #7)*

“Especially the chat services was busy generally for simple questions, there was not much serious research questions.” *(Informant #5)*

“Anyone could contact to library by email, but the library didn’t receive many reference questions which needs staff expertise. The questions were generally simple reference questions.” *(Informant #8)*

The librarians complained about the lack of reference guides for users about how to search information and how the system works.

“Users should have been oriented how to find the information or at least taught how we work; users should have been guided better. The librarians who works for Biblioteksvar, did homework of the students sometimes, users could be taught how they find the information themselves.” *(Informant #5)*

“The lack of informative guideless of the service should have been considered then users could use the services effectively.” *(Informant #3)*

Because of inadequate number of staff, sometimes there were many users who were waiting for getting answer in the same time through chat. This busyness caused lost chats (*Tapte Chat in Norwegian*). Users were in the queue to get an answer on the chat but they were not much patient to wait.

“Users were queuing for chat and then leaving the page when they not get respond from the system. Also queue on the chat line created stress on the librarians.” *(Informant #4)*

“Sometimes users need the answers immediately, so it was not possible through email service. Chat was giving the chance to user for quick respond but when the system was busy users were leaving from the chat without waiting.” *(Informant #2)*

“It was too stressful and difficult to find the quality information in short time when users were waiting on the queue.” *(Informant #6)*

Another issue mentioned by the informants was responding to the email inquiries because the emails required a long response time, so users who submitted their inquiries by email had to wait to get the response at least for a day.

“Users those who asked reference question by email get the respond following day during the week. Email based services was not replied immediately; it was taking sometime.” (*Informant #2*)

Biblioteksvar was available in the day time during the week therefore, the opening hours of Biblioteksvar were considered limited by some informants.

“Day time only teenagers might able to connect to the systems. Working people might not be used the system.” (*Informant #1*)

“We should able to give service during the weekends as well.” (*Informant #3*)

It is obvious that the organizational issues of Biblioteksvar were one of the important factors that depleted the project. Member libraries were in high expectation from the national library to get support and maintain the project. On the other hand enthusiasm of the member libraries towards the project has decreased mainly because of lack of staff. As many participants mentioned lack of promotions also affected the system in a negative way. Also it was found out that some questions which were being asked couldn't be classified as reference questions, for example users were asking questions which could be find simply at a dictionary. The lack of guidance and orientations for the users in the system were also considered as a weakness. Furthermore, the participants complained about the lost chats and concerned about duration of the responses to the email inquiries.

4.3.6 Librarians' opinions towards future of virtual reference services and collaboration

4.3.6.1 Towards virtual reference services

Email and chat services were the most frequently used communication channels in the Biblioteksvar. When the informants were asked about their future vision on the communication channels for virtual reference services, most of them, whether they were charged in the chat service or in the email service, believed that email services may be one of the most frequently used communication channel for virtual reference services. The participants were generally satisfied with email services from their point of view since the asynchronous reference service allows librarians to answer inquiries on their own time.

“Email services will continue to be more often used channels in public libraries especially in small ones. In terms of finance and human resources it seems that email service is convenient.” (*Informant #1*)

“We would like to give reference services by email because for the email inquiries there was no rush to answers to questions in immediate, so it gives chance to library to answer the question correctly and detailed.” (*Informant #2*)

“In the future email will be the best quality service for remote users. You can take your time with the email, as long as users are ok with it.” (*Informant #3*)

“Email will be one of the most important communication channels to interact with users. Email will satisfy the users, a good formulated answer for the users will make them happy.” (*Informant #4*)

The informants were asked to share their opinions about the chat reference services. Some participants indicated that chat was very good for the customers because it allowed users to interact with librarians instantly and synchronously and also it gives an opportunity of a reference interview between librarians and patrons.

“It is so fast on the chat session, and when you are directing users you belong to mainly quick information resources available on the web such as Wikipedia.” (*Informant #3*)

“Chat is instant help for the users, users who those want to get answer for quick reference questions it is very good tool to use it in referencing.” (*Informant #8*)

“Chat is good for the quick problem solving, but for the serious reference questions which requires reference librarian’s expertise and time. If users can reach to library instantly it is excellent. Chat provides immediate dialog with librarians and it is flexible and informal.” (*Informant #7*)

“Chat is a good way for the reference questions because it allows the reference interview with users during the session. Reference interview is most important part of reference librarians’ job.” (*Informant #5*)

On the other hand, the email based service was regarded as a useful for serious reference questions by some informants since it allowed reference librarians more time to answer the questions.

Besides the email and chat/instant messaging facilities other alternative communication ways were raised up by some informants. They considered the social networking tools as an alternative future communication channel with users.

“I think social media will be used by libraries, such as Facebook, Twitter for patrons. Chat will be old fashioned but social networking channels will be more common.” (*Informant #3*)

“Social networking tools, especially Facebook chat can be one of the active ways to communicate with users. But it is just because users are on Facebook. It is not completely satisfactory way to answer reference questions but at least to catch the users.” (*Informant #5*)

However, some informants had a negative thought towards social networking tools especially Facebook.

“Facebook is a good idea but we cannot trust the social networks; Facebook may disappear one day. On the other hand Facebook has been a very famous since it was created but now all the grandmothers are on Facebook so the young generations are leaving slightly.” (*Informant #7*)

“Social networking could be one solution for contacting users to save the day we cannot build our plans on it. (*Informant #8*)

Some informants were also mentioned the mobile technologies and applications for virtual reference services.

“Mobile applications should be considered because many people have smart phones and tablets.” (*Informant #8*)

The electronic resources have been already in usage in the public libraries of Norway and informants asserted that more usage of electronic resources and providing digital library services to the users will make the libraries more important in the future. Many participants mentioned that virtual reference services will play a significant role in the development of libraries.

“We have to rethink; we have to choose where we will put our resources, where are the libraries going to work? I believe libraries will become more digital and the will give priority to the electronic resources but this will take such a time, because we are mainly traditional libraries still.” (*Informant #1*)

Informants were generally were positive about the future of the libraries and librarians even in the competition with the web resources and the search engines.

“Google or similar mechanisms will be there and our mission as librarians will continue so that we will try to provide best quality information in a short time for the patrons.” (*Informant #3*)

“We are able to give a good service, and libraries will be needed in the future. Of course Google will not take the place of the libraries. Librarians are still very qualified at answering research and reference questions and these questions will be there in ten years, so librarians will be needed.”(*Informant #2*)

Several participants suggested that students should be educated about how to find information on the web and information seeking lessons for the students should be taken place in educational curriculum.

“Norway is quite a wealthy country. There is not much effort for school children in terms of researching so that they are not educated very good at how to find trustful information sources. For the future; education system should include how to find the information classes.” (*Informant #5*)

“The users are not coming to library, and generally they don’t know how to find information, therefore libraries will be in the curriculum of high schools, the students will be educated in terms of library resources and how to find useful and trustful information. Libraries will teach young generations the skills of how to find useful information at schools.” (*Informant #7*)

One participant mentioned that the generation of current staff who has been working in the libraries may not fit the requirements of the digital age.

“Continuous education and train is important, librarians may be educated in terms of technology to catch up new developments.” (*Informant #1*)

“We have to be alert and we have to be ready for the next place or way to reach young people, therefore we need younger library professionals in our libraries.” (*Informant #7*)

“The libraries need more enthusiastic and new graduated librarians who can be innovative for the user’s point of you.” (*Informant #1*)

Additionally, the informants pointed out that user studies should be conducted often by the libraries to understand the information needs of the users as well as their information seeking behaviors.

Majority of the participants considered that the email services will be frequently used in virtual reference services. The chat service was also considered as a future virtual reference tool however, visions of the librarians for the email was outweighed than the chat services because they preferred to answer reference questions perfectly to satisfy the users at maximum level and they believed that it is more likely with the email. Social media tools were also mentioned by participants as an alternative communication tool for the future, but there were some concerns related to sustainability of these tools. According to the findings participants were generally positive about the future of libraries and they were confident that libraries will not lose their names as trustful information centers. They suggested that libraries should be in educational curriculum somehow to raise conscious of students about the library services.

4.3.6.2 Towards Collaborative Virtual Reference Services

Informants shared their thought towards the collaboration for virtual referencing in the future. Biblioteksvar was terminated and most of the informants were unhappy with this situation. They were willing to participate in a consortium again for the virtual reference services. The informants suggested that there should be a country wide collaboration which will be organized and managed by the national authorities.

“After Biblioteksvar, we can build a new collaborative virtual reference services at regional level under leadership of county library. But it is not a solution; national library should take the leadership of the project and it should be a country wide.” (*Informant #1*)

“The management of the collaboration should be under a national authority; Deichmanske should not be leader for such a national project, Deichmanske is not enough.” (*Informant #1*)

“I hope that the National Library will develop some kind of virtual reference library services. Our library will probably not be able to develop virtual reference services alone, apart from plain e-mail service.” (*Informant #6*)

All the informants were expressed their feelings in favor of the collaboration. They were all shared the same thought that it was a big lose that Biblioteksvar was terminated because libraries were benefited via Biblioteksvar in many respects.

“The project for collaborative virtual reference service should continue because it has vital importance for small libraries.” (*Informant #1*)

“I can’t imagine that libraries will manage such a service alone. They will return to back and they will start to answer the inquiries via only email. We may fall in back again in competition with web. Libraries may struggle after Biblioteksvar.” (*Informant #1*)

“Biblioteksvar should have continued because budget of the libraries is not very good so it is hard to conduct such a virtual reference services alone.” (*Informant #8*)

“The collaborative virtual reference service will be a need it in the future. Individually libraries will face financial problems since they don’t have much money to run a system virtually active. And also we don’t have many offers for the online users, we are sad that the Biblioteksvar will be close soon.” (*Informant #5*)

Informants were asked about their plan for a new collaboration after the Biblioteksvar. All of them were looking forward to have a new collaborative initiative for the virtual reference services.

“The consortium was a power of the libraries. For the librarians’ image, these kinds of initiatives are important to show the value of the profession, we need to do something.” (*Informants #1*)

“It is incredibly difficult to get funded for a project so it will be hard to initiate again such a service but we definitely should try to build a new one. It will be reborn in somehow. I can’t see the future of public libraries in Norway without interaction with their library users.” (*Informants #2*)

Some informants believed that collaborations should have diversity in terms of library type. They asserted that collaborative work would be much more effective if it comprises more special and subject base libraries

“I can see the future of the collaboration with special libraries; libraries which are holding a subject expertise, not only public libraries but it should more homogeneous.” (*Informants #3*)

Since Biblioteksvar was terminated mainly because of lack of financial support, one informant mentioned the Open Source Code programs as a solution to create a new platform for the virtual referencing.

“If the collaboration doesn’t get support we have to continue by ourselves individually. I believe that some members of consortium will initiate the collaboration with open source code program.” (*Informants #2*)

Several participants pointed out that suchlike collaborative service should be promoted at a maximum level. They pointed out that if the collaboration creates a huge impression around the country, the project will worth for the investment.

“The marketing of the services should be more efficient, promotion is inevitable necessity for success.” (*Informants #5*)

“Lack of promotions and lack of support was main reasons that led the collaborations collapsed, this time we have to focus on marketing of the project if we have one.” (*Informants #7*)

Informants emphasized that before create a new consortium for the virtual referencing all the members should share their idea towards the project.

“Perspectives of librarians should be considered about how collaboration is important and how librarians can make it better.” (*Informants #5*)

Most of the informants were not happy with the fact of Biblioteksvar will not operate anymore. They believed that a consortium for the virtual referencing has vital importance for the libraries for now and for the future. They were in expectation that there will have a new collaborative virtual reference service in the leadership of the national library. The libraries look forward to participate in a new collaboration with more participant members and being more publicized within community.

4.4 Results of the questionnaire

4.4.1 The reasons for participation of libraries in Biblioteksvar

As it is seen from Figure 5 below most of the libraries wanted to be part of the Biblioteksvar in order to increase the competencies of librarians (14). Activities like sharing the knowledge and expertise of staff and development and enrichment of the library services via collaboration were indicated several times by librarians (12) as the main reasons for participation in the consortium. Besides, cooperative volunteerism and contribution to a national service motivated the public libraries (11) to join in the

Biblioteksvar. Being networked for virtual referencing in order to share information resources and to reach more users via collaboration encouraged the libraries (9) to participate in a consortium. Some participants (8) mentioned that they were motivated because of innovative nature of the Biblioteksvar and they believed that the project would advertise the libraries within the community. According to the results, several participants (7) were motivated to join the consortium by using more of the electronic resources along with Biblioteksvar and communicating with users through chat service. A few number of libraries (4) mentioned that they were enthusiastic to help small size libraries in Norway in terms of virtual reference services. Two participants stated that they wanted to be part of the Biblioteksvar because it was a more promising, comprehensive and efficient virtual referencing than an individual one.

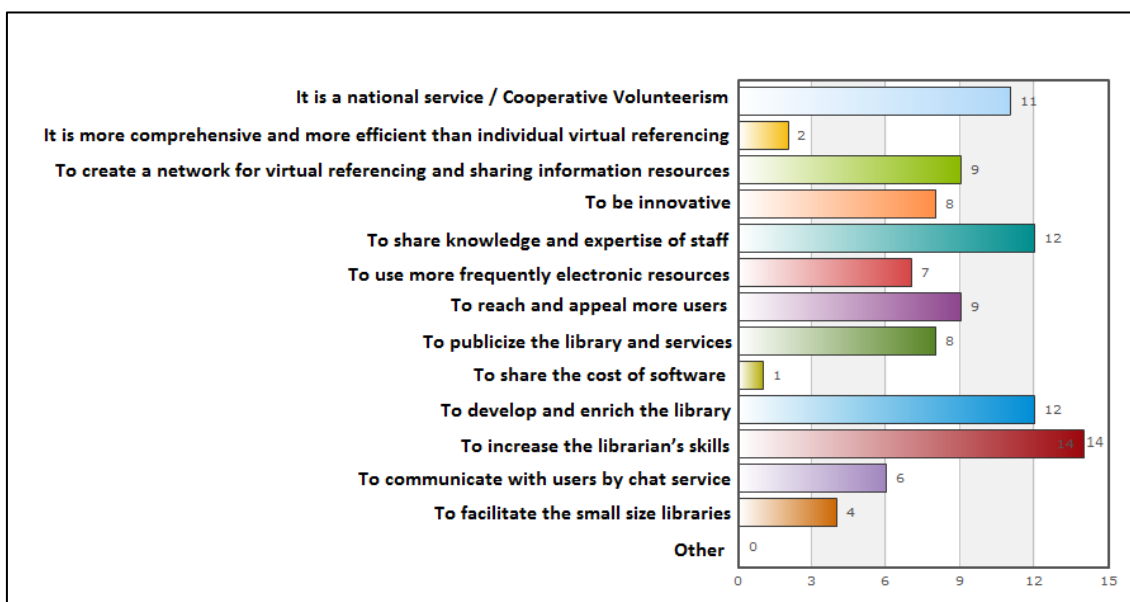


Figure 5: The response to “Why did you want to be part of Biblioteksvar?”

According to the findings there were some certain factors that particularly motivated the librarians to participate in the Biblioteksvar. These factors were generally related to professional purposes such as increasing the competencies of the library staff and development and enrichment of the library in terms of VRS. On the other hand, substantial incentives like altruism and self-interest were motivated the participants to join in the consortium.

4.4.2 Advantages of Biblioteksvar

The results of the questionnaire show that one of the most advantageous part of the Biblioteksvar was Staff expertise. As displayed in Figure 6, 12 out of 19 participants mentioned that benefit of staff expertise from other member libraries was very advantageous. 11 participants mentioned that Biblioteksvar was useful in terms of sharing information resources among participating libraries. Accumulative knowledge base in the consortium was also regarded as an advantageous part of Biblioteksvar by some of participants (7). Also marketing and promoting the library services were mentioned by 6 participants as an advantage. In addition, sharing the workload and expenditures were indicated as advantages of consortium by few member libraries.

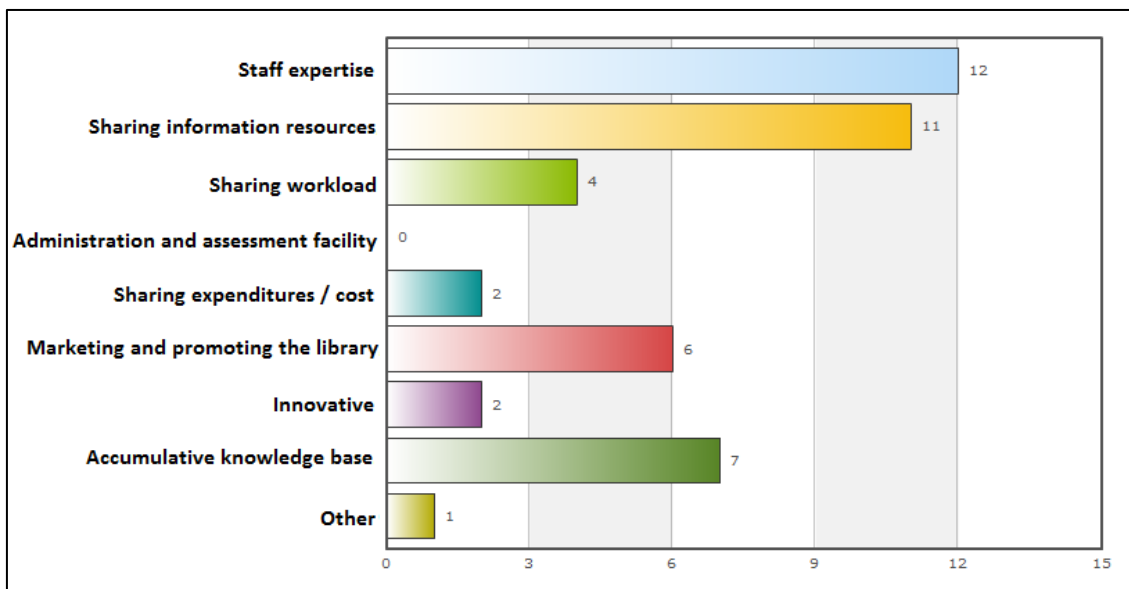


Figure 6: The most advantageous parts of the collaboration

Apart from the choices given in the questionnaire one participant shared his/her opinion about advantages of Biblioteksvar stating:

“I got expanded my knowledge of reference services for young adults. I also got to use some of the skills I learned in my bachelor degree and I learned a lot of different subject. I felt that I learned a lot more with Biblioteksvar than sitting in the reference desk at the public library.”

4.4.3 Challenges of Biblioteksvar

A question regarding challenging parts of the collaboration was asked to participants. As displayed in Figure 7, Lack of time and Extra burden on the library staff were indicated as the most challenging parts of the collaboration by 12 participants. 9 participants mentioned that Lack of staff was challenging, while 5 stated that the organizational issues of collaboration were challenging. Some participants (4) referred that answering the local questions from other member libraries' users was difficult and lack of technical skills of librarians for virtual referencing (3) was an obstacle. Two participants indicated that there was an issue related to advertising of the service and promotion of the service. Furthermore, Communication among the member and the Trust issues in the consortium were considered as challenges by two participants.

Besides these challenges “*Lack of knowledge of librarians in virtual reference service*” was regarded as a problem by one participant. One participant complained about low quality of the questions submitted by users to Biblioteksvar:

“Pupils and students were asking school level questions that should have been specified better.”

On the other hand one participant contradicted with the opinion mentioned above:

“There were too many high level questions”

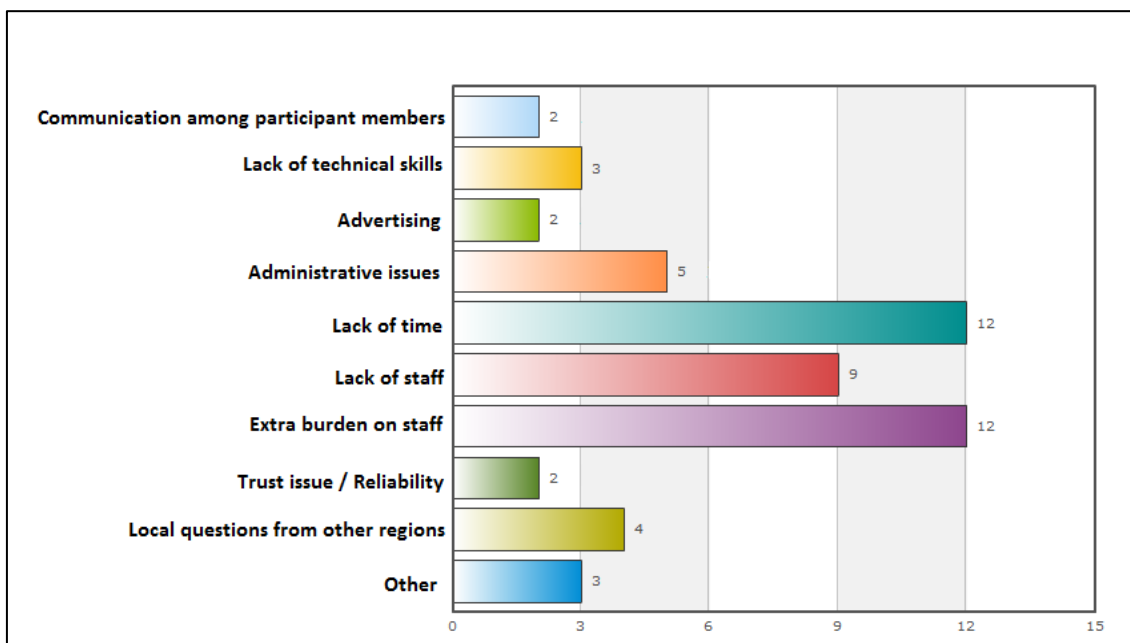


Figure 7: The challenging parts of the collaboration

According to the findings, Lack of time, Lack of staff and Extra burden on library staff were emphasized by many participants as the main challenges. It was found out that challenges related to consortium were mainly concentrated on staff issue.

4.4.4 Opinions on communications channels for Virtual Referencing

Participants were asked to respond to “Which of the following communication channel/s would provide best reference service to the users overall in your opinion” in the questionnaire. Figure 8 displays the opinions of participants towards VR communication channels. According to the results, almost all participants (16) said that the Email / Web Based email services would provide the best virtual reference service to library patrons. Many participants (12) indicated that Chat service (Embedded in software or webpage) would be an ideal way of providing reference services for the virtual conversation with users. Social networking tools such as Facebook, Twitter and also SMS (Text message) were also mentioned by some librarians (3). Instant messaging tools such as Messenger and Skype were also indicated as a communication tool between librarians and users by two participants.

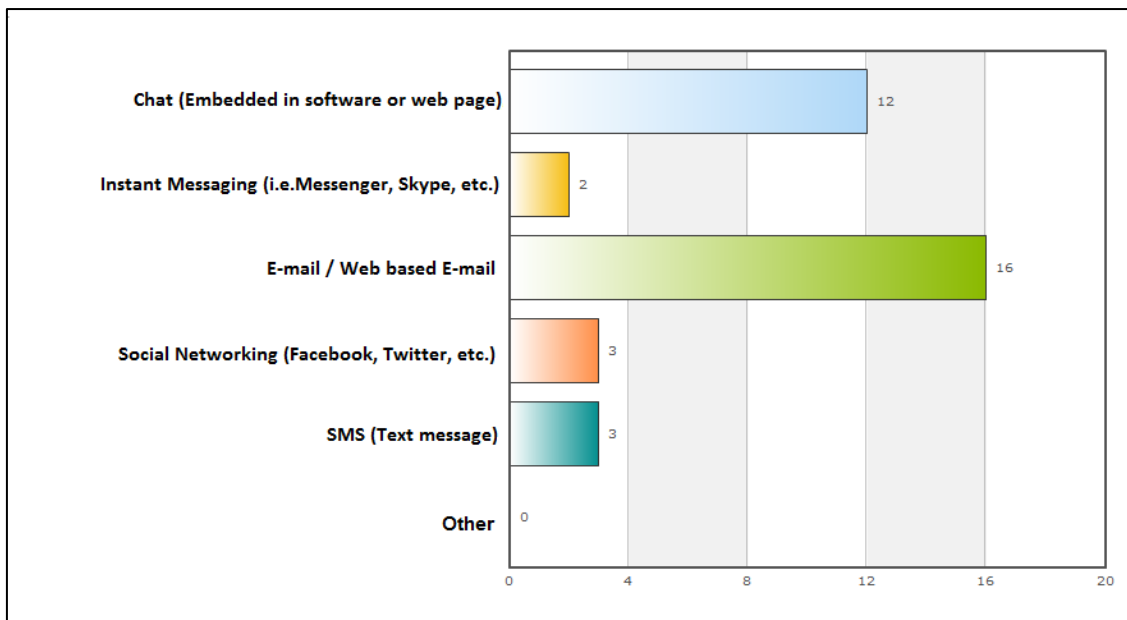


Figure 8: Participants’ response to which communication channel/s would provide best reference service to the users overall in your opinion?

4.4.5 Overall satisfaction of libraries with participation in Biblioteksvar

Figure 9 displays the overall satisfaction of the librarians with their participation in the Biblioteksvar. The findings revealed that more than half (53%) of participants were Satisfied with their participation in the consortium, while 26% of participants were Neutral. According to the results 16% of participants were Very Satisfied to be part of the collaborative virtual referencing while 5% of them were Dissatisfied. None of the participants marked the Very dissatisfied rating.

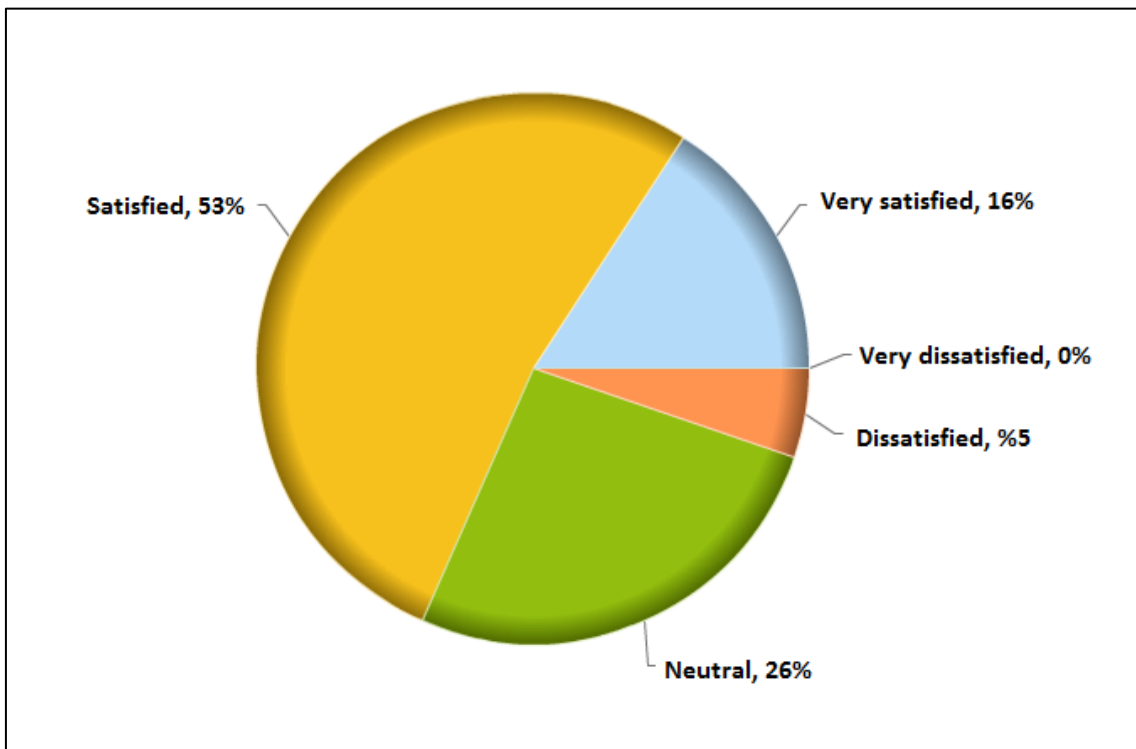


Figure 9: The overall satisfaction of librarians with their participation in Biblioteksvar

4.4.6 Reasons for leaving from consortium

During Biblioteksvar's operation some member libraries left the consortium. Therefore, participants were asked "If you stopped participating in Biblioteksvar before it was terminated, what were the reasons?" with an open ended question. 6 out of 19 participants indicated that they left the consortium before it was terminated. Some of the reasons are stated below:

“Lack of time, too many local questions from other regions and too many unserious questions especially on the chat.”

“We stopped one month before it was ended. The reason was that it demanded too much of librarians' time. It was also estimated that few users were asking to Biblioteksvar from our region.”

“The work we put into service gave little result. Biblioteksvar became a platform where particularly school students submit their questions related to their homework.”

“The library participated in answering SMS only. When the SMS part of the service was discontinued, the library automatically stopped participating in Biblioteksvar.”

The responses revealed that the main reason of leaving the consortium was inadequate number of staff. Participants mentioned that the reference librarians were busy with duties at their home libraries and there was not enough staff in each of the member libraries for the shifts so they generally did not have extra time for the Biblioteksvar. It could be understood from the statements above that major reasons of breakaway from the collaboration were staff issue.

4.4.7 Experiences that were gained by librarians from Biblioteksvar

In the questionnaire, participants of the consortium were asked to respond to an open ended question of “What were the valuable experiences which you have gained from Biblioteksvar?” Some participants shared their opinions on the experiences they gained throughout Biblioteksvar as stated below:

“Developed skills in virtual reference work got much better in "how to answer quick, and what is enough information" positive contact with a lot of people (that we not would reached otherwise) very good training in communication with young people.”

“We gained experience in using electronic resources more often and more extensively. (In fact, we also started using some of our printed resources more often.) Being a part of a virtual reference service was also useful because those among the staff who were somewhat hesitant towards digital reference work discovered that they could master the new format.”

“We got new types of questions that I might not have from my own local users. I proved my own knowledge to find information, both in printed and online resources.”

“We tried Chat as a form of communication and also got better knowledge about information resources on the Internet Cooperation.”

“Experience with making searches on the computer in relatively pressure of time and opportunity to learn lots of news on different topics.”

The results showed that the most important experience that librarians acquired thanks to the collaboration are increasing staff's competencies through using more electronic resources as well as virtual referencing tools.

4.4.8 Future opinions of the librarians on the virtual reference services

Librarians were asked to share their aspects on the future of virtual referencing and collaborative virtual reference services in the question of “What places do you envisage Virtual Reference taking in library services in the next 5 years? Where do you see your library in the near future in terms of Virtual Reference Services?” Following are some noteworthy comments from participants related to future of the service:

“We sincerely hope that some form of virtual reference service run by libraries will continue in the future. It is important that not all virtual reference services are either automated and/or commercial in nature. Our library is positively inclined to participating.”

“I think that it is very worrying; the National Library has not continued to focus on Biblioteksvar. I am very excited about how the National Library will continue to invest in virtual reference services work in the future. I think that Biblioteksvar covered an important need in the population, and it is very disappointing that this service was not further developed.”

“It needs to be professionalized if it is going to be used. There are commercial services in the market and a library service must compete in quality. The way the service was organized I think that the answers varied a lot. Specialist in reference work against youths would be better.”

“I don't think that something will happen very much, we are likely to respond to several questions by e-mail and use social media more, but I do not think we're going to have a separate virtual reference service locally or be part of a national service.”

“We will still be a place where people will come to find an answer in a myriad of information. We have the ability to find the right answers.”

“We expect more of virtual reference. One question is if the service will be more specialized than it has been so far. Biblioteksvar was general and we answered all

kinds of questions. The main responsibility for virtual services was placed with another section of our library. Most of them have participated in Biblioteksvar to a certain degree.”

There are many various opinions from participants regarding the future of reference services. Some participants indicated that they will continue to provide the VRS to their local community by email or cost free communication tools as well as social media applications. However, most of the participants advocate in favor of continuing the collaboration or developing a new one which would be organized and run by the National Library in the future.

4.4.9 Additional comments of the participants

In the last part of the questionnaire participants were asked to add comments/opinions in addition to previous questions by an open ended question. Some librarians shared their opinions as stated below:

“We will take with us good ideas for solving problems from Biblioteksvar. It might have been a good idea if more libraries participated and could see all questions. They could have sorted out local questions and we would have had more experts on various topics. It might have been an idea to have more time to answer the difficult questions (they should all be answered the same day we got them.)”

“Digital referencing is challenging because of the anonymous users. That will encourage unserious questions. This is the case especially by children and young people who have used Biblioteksvar without sufficient motivation. It was a great relief when Biblioteksvar stopped. The amount of unserious had gone too far in my opinion.”

“Biblioteksvar covered clearly a need. Some users took up very personal questions, which can be difficult to take up face to face. I think I was able to comfort some way. Sometimes there were so many questions at once that I know I did not give good enough answer because I was stressed. Users could be impatient and whining, and then it took even longer, since they then blocked for my searches.”

“I agree that it should be developed further, but it was rather sudden that it was just decided to stop this reference service entirely.”

Formation of a new collaboration after Biblioteksvar with more participants is on the agenda of public libraries. There was also anticipation of having more subject

specialists in the consortium in order to expand the border of the service within the community. On the other hand, librarians were looking forward to deal with more challenging users other than school students and provide professional reference services to them. The project was terminated for the reasons as it was stated earlier. However, librarians were determined to revise all these factors in order to learn from the mistakes before initiating a new collaborative network.

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the major findings of the study as well as the issues raised during the research. The aim of the study was to gain an insight on the collaborative virtual reference service from librarians' perspectives. This work investigated insights and understandings of the librarians as well as future perspectives towards the collaborative virtual reference services and facilities and impediments of the country wide virtual reference service. The findings related to the research questions were represented in the previous chapter. This chapter discusses the findings and provides recommendations based on the findings.

5.2 Motivations that led libraries to participate in nationwide collaborative virtual reference services

In this study it is found that there were two main motivations for public libraries that led them to participate in a nationwide collaborative virtual reference services: "Cooperative Volunteerism" (*Dugnad in Norwegian*) and to increase the librarian's competencies. Biblioteksvar was a national collaboration of public libraries for virtual reference services therefore, the libraries were highly eager to participate in the collaboration so that they could contribute in a national service. Besides, librarians were aiming to increase the skills of the library staff in terms of virtual referencing. According to the results, many public libraries in Norway were eager to improve and design their services in accordance with developments in the library environments. Biblioteksvar was one of the chances that offered them an opportunity to practice a new virtual reference service.

The results of this study strengthened Kresh's (2002) idea that reference librarians are improving their skills and competences required in the digital era and carrying the reference services to the users wherever they are. According to the findings public libraries were aware of the transformation from traditional reference services to virtual reference services and they were trying to improve the competences of the reference

staffing and create staff efficiency through the collaboration that's why public libraries headed towards the consortium.

The results of this study confirmed Kwon's (2007) view that reference collaboration has brought a new opportunity to the libraries for reference services in the digital library environment. The virtual reference services enabled online, real-time interactions between the patrons and the librarians at regional and national levels. Participants of this study considered that communication with patrons through the instant messaging and interaction with them simultaneously was very important and the consortium offered this feature to the members therefore, libraries were motivated to take part in the collaboration.

In order to satisfy users who submitted questions virtually to the library, collaboration with other libraries might be a solution. The purpose of the collaborative virtual reference services is to provide best possible reference service to community (Jin, et al. 2005). This study showed that many public libraries decided to be member of a consortium for the virtual referencing to offer best reference services to the patrons.

The libraries were expected to benefit from the knowledge expertise of the librarians who worked in other member libraries. It was found that Collaborative Virtual Reference Services motivated the libraries to get benefit from a knowledge base created by the collaboration. In addition, the libraries were anticipating being more visible on the web and reachable by patrons easily. They were looking forward to increasing their reputations and publicizing services via collaboration.

5.3 Facilitations and impediments of the Collaborative Virtual Reference Services

5.3.1 Facilitations of Biblioteksvar

The findings of this study confirmed the earlier studies (Kern, 2009; Shachaf, Meho and Hara, 2006; Kwon, 2006; Berube, 2003; Chowdhury, 2002) that collaboration is beneficial in staffing and increasing competencies of librarians. Raising the competencies of the library staff in terms of virtual reference services and the usage of

electronic resources, and benefit of the staff expertise from other member libraries were regarded as one of the most advantageous parts of the consortium by participants.

As it was mentioned in the literature review, the collaboration combines the power of local collections and the staff expertise with the diversity and availability of libraries and librarians in the consortium (Truelso, 2004). The findings asserted that Biblioteksvar connected the libraries and librarians in the consortium and it created an information and expertise sharing mechanism among the member libraries. This consequence was also supported in the literature by Lavender, Nicholson and Pomerantz: Collaboration is a big chance for the participants, having a collaborative reference service in place that connects public libraries to other members gives libraries a personal networking infrastructure (2005).

The research findings confirmed the opinion of Stahlberg and Pinard (2008) which indicates that collaboration has greatly increased the visibility of libraries and has helped the libraries achieve their mission of providing public access. According to the results Biblioteksvar have increased the reputation of member libraries thus libraries had an opportunity to gain new users.

The findings of this study discovered that library professionals provide qualified, healthy and professional help for users in the collaboration. It was revealed that libraries got positive feedback from many users about how the service was useful for them and the librarians reported that they received many thanks for their works.

Additionally, based on the results of the research, it was understood that the collaboration was important especially for the small size libraries in the consortium because some small size libraries has been introduced with the synchronous reference services through being a part of the virtual reference consortium.

5.3.2 Impediments of Biblioteksvar

According to the findings, the organizational issues were considered to be a major challenge in the collaboration because they led down many activities and called off the project. The collaboration could not be maintained due to the financial problems and

lack of support from the national authorities. The project's budget was not sufficient to afford for the license of software and wage of the supervisor therefore, it was stopped. As it was indicated in the literature many examples of collaborative initiatives failed because of lack of financial supports (Bromberg, 2003).

In addition to the organizational problems, the number of member libraries in the collaboration has decreased over time and the project was stranded. The findings revealed that major impediments of the collaboration were inadequate number of libraries in the consortium and lack of staff. Although the collaboration provided staff force and expertise, sometimes problems were happened related to shifts since there was not enough staff in the each member library for the shifts. The reasons behind the withdrawing from the project were mainly because of the staff issue of the member libraries. Generally, each member library assigned one staff for the Biblioteksvar and sometimes there was no substitute for this staff in the library so that some libraries discontinued of the project for the natural reasons.

The study discovered that the awareness of the service was not provided all around the country, promotion initiatives for the project were not very successful. The participants of the study believed that, Biblioteksvar would be much more useful if the project was publicized well in the community. However, some libraries achieved the publicized their libraries increased their reputation at their local community via collaboration.

Furthermore, lack of reference guides for the users such as manual which explains how to use the system, limited service hours, excessive number of online users at the same time, and content of some questions were counted as the main obstacles. The primary user groups of the service were from school children therefore, some questions were not considered as challenging reference questions that lead the user to a variety of sources that will give them a broad range of information on a topic. On the other hand, librarians had to deal with some pointless questions submitted by user. For this reason it was important to make users conscious regarding the services.

In this study informants expressed that handling the local questions submitted by the users who did not realize that they were not contacting their home libraries were

challenging. The findings of this study confirmed the Kwon's study (2007, p.87) that "If a local library deals with a high proportion of questions that are answerable by its locally restricted resources and services only, joining the consortium would not be recommended."

Recently, public libraries have taken up more duties besides their traditional responsibilities and they take over more roles in the society than ever. Public libraries have long held a position of special importance in educating not only the public but also schoolchildren students and teenagers. Now they are helping to address illiteracy and contributing to Lifelong Learning. Public libraries are a hub for the citizens and access point to the computers for all. However, they are under the responsibility of the local authorities in terms of management and funding. To contribute in such central projects or deliver the services around the country may not fit the nature of the public libraries. Therefore, it is possible to be faced with some obstacles in participation in a nationwide consortium for public libraries.

5.4 Librarian's opinions towards future of virtual reference services and collaboration

The importance of the virtual reference services for libraries was highlighted in this research. The findings pointed out that, almost all participants do believe that the future of the libraries will chase the requirements of the digital age; and whether it is individual or collaborative, the virtual reference services will remain as a significant service by linking people with the information.

The current primary modes of delivery for virtual reference services are generally e-mail, and real-time chat communication. The email is already a popular communication tool and in use at many libraries. On the other hand, the usage of instant messaging has been increasing as a new communication way recently. This research discovered that the email service in the future may be a more frequently used communication channel than the chat services in terms of interaction with the library users. The reason why the email service is considered as a significant communication tool for the future is that it provides satisfactory reference services to the patrons in terms of content of the answer.

Even though the instant messaging or chat tools were highly demanded communication tools nowadays by the users, the participants of the research generally do agree that future of the reference services will be conducted frequently with the email based channels.

In other words, the majority of the participants considered the chat service as a useful communication tool especially for the ready reference questions and for the users who wanted to get quick responses. However, the result of the study discovered that some public librarians did not agree on chat reference services, while some of them considered it very significant for VRS and were very excited about the concept of real-time reference services. They prefer the email services to answers user's questions because some questions were not amenable to the synchronous reference and some of them considered it overwhelming in terms of “queues” for submitting inquiries.

There has been an increasing connection between the virtual reference service and Web 2.0 tools/applications in the last decade. Web 2.0 tools and applications such as blogs, wikis, social networking, tagging, bookmarking and RSS feeds are widely in use in the library reference services, especially social networking. The minority of the participants mentioned social networking tools for the future of virtual referencing. Since some social networking tools allow cost free chat possibilities and many users, especially young users, are highly into social networking, public libraries may consider using these potentialities for virtual reference services to save the day. Social networking tools or some other cost free IM applications may not fit into reference services for a long term because of the difficulties that would arise in collecting statistics and helping patrons perform software downloads.

Many librarians were concerned about meeting user's information needs in the future however, they believed that the librarians as trusted advisors and mediators of information will play the key role for the meeting these needs as it has been before. The research outcomes revealed that public libraries and reference librarians have an important duty as a bridge between the community and the information accumulations.

The findings pointed out that library usage and how to access the information and information resources should be part of curriculum of the schools as a topic especially before higher education in order to develop the research skills and increase the ability of access to true and quality information for students.

Based on the results of this study the public libraries in Norway were eager and happy to be part of the collaborative virtual reference service for the citizens of the country. Biblioteksvar was an effective and useful networking initiative for the member libraries as well as for the users. Public libraries of Norway are already looking forward to having a new collaboration in virtual referencing after Biblioteksvar. On the other hand there were a few participants who were happy that Biblioteksvar were terminated. One of the reasons of dissatisfaction with the project was mainly because of the user groups. As it was stated before, the majority of the users of Biblioteksvar were among school students and the participants explained that Biblioteksvar turned out a service that just helps the students for their homework. The opinions of these participants would be definitely helpful to see the other side of the coin, especially for the setting up a new collaboration.

As Bromberg (2003) stated in literature, the biggest challenges faced by participating libraries is future sustainability of the collaboration. Maintaining the alliance and getting benefits from the collaboration is depended on the members as well as the administration of the consortium. A well-managed consortium and high volume participation of libraries to the consortium would make the mechanism stronger and more effective.

5.5 Recommendations

Based on results of this study and reviewed literature there are some recommendations in regards to virtual reference services and collaborative virtual referencing. These recommendations will suggest the ideas for libraries to establish an effective consortium for virtual referencing and to maintain the services as well as operate virtual reference services separately. After the analysis and discussion of the findings and review the literature, the following recommendations are made by the researcher:

The idea of setting up a nationwide virtual reference services should be initiated and developed in cooperation with the national authorities. The biggest impediment faced by the members in the consortium was the organizational issues therefore, to have a strong collaboration; the leadership of the project should be the best and the strongest part of the consortium. In public libraries that belong to local municipalities, the responsibility of the projects such as Biblioteksvar which cover all the country should be under the national library. Deichmanske Library (Oslo Public Library) has been supervising the Biblioteksvar but the National Library might be a better chair for the project.

The participation to the consortium should be ensured with as many of member libraries. All public libraries around the country should be encouraged to participate in collaboration as much as possible. It may not be expected that all public libraries would join to the consortium therefore, initiatives may start by identifying and including enthusiastic supporters. And also staff who are interested and committed to the concept of the virtual reference should be assigned for the service. On the other hand, the collaboration should include more diversity in terms of library type. Different types of libraries other than a public library may contribute in the collaboration by providing specific information. The collaboration provided answers almost in every discipline however, the system is naturally limited in terms of the type of questions. For example Biblioteksvar didn't give medical diagnoses or answer legal questions. Some academic libraries and some subject libraries should be included in the consortium in order to provide an excellent digital information service so that the collaboration may take advantage of the different libraries. Best practices of the virtual reference services from other countries should be taken as an example such as Sweden and Denmark.

The virtual reference services should be offered via various communication channels for the users. Beside to chat and email services, social networking applications may be included into the project as well as mobile technologies. Chat services or any other synchronous communication opportunities should be provided to users to allow them to connect to libraries instantly. Although chat service may not provide the best reference services, it would be simple for the users to have an instant communication with librarians and be a chance for the librarians to connect with user easily.

For public libraries to reach the population as much as possible is a major success regardless the age of users. The results revealed that marketing of Biblioteksvar was not very satisfactory therefore, the awareness of the services should be advertised throughout the country ideally. Public libraries should do a better job of marketing and use trendy ways. Cost free communication channels such as a Twitter or a Facebook fan page may be used for marketing purposes. The value and possible advantages of the service should be explicated to users by promotion strategies such as publicity campaigns and creating awareness of the service in the community. Thus, the audience of the service would be extended and many users would be reached other than school students; so that libraries may stand against popularity of commercial ask services and search engines by virtual reference services.

The consortium should have software which has advanced features of the virtual reference for the service and it should belong to the consortium. The software should meet the needs of users and librarians. The software which has co-browsing or other file sharing capabilities may help to create an effective mutual communication between patrons and librarians. Instead of buying from the vendors and paying for the license of software, an original one may be built by the national library or if it is possible by IT staff of the member libraries. Maintenance of the software is very importance for sustainability of the system that's why it should be taken into consideration by the system manager and member libraries.

Working hours of such a service may be changed or extended; the service may be operated not only day times but also in the evenings or in the weekends to catch user groups who do not have time for research during the day time.

Library professionals who can able to use communication tools effectively and also who have strong communicational skills should be assigned for the virtual reference services in order to provide the best reference services to the patrons; so that the lack of face to face interaction with clients would be compensated. Virtual reference services should be paid attention to create the staff efficiency and to reduce the physical reference desk points in the library building.

In-service training should be provided for the reference librarians in order to make them ready for the new technologies related to virtual communication. Librarians also should be trained in terms of technology to keep up with the new developments and innovations.

The main user groups of the project were school children therefore, librarians and teachers may create a collaborative partnership in preparing students for a complex society where the vast amounts of information must be understood and managed. This partnership may increase the awareness of the project and guide the students about how to use the system by providing user training and information literacy programs.

Formation of a new collaboration should be based on an agreed decision taken by all members of consortium as well as user demands. The user studies should be conducted in order to understand and keep up with the users' changing information needs. In order to improve the service, a periodic review would be essential. The usage statistics and analysis of the types of queries and answers would determine the effectiveness and efficiency of the service.

Reference services have taken a central place in the library and information services by this time. Virtual reference services are a necessity of the era and a significant part of the digital libraries. Libraries should build the virtual reference services and stay updated with the developments for information services in the next generation of digital libraries.

All the members of the consortium must benefit from the collaboration for it to be successful. However, the central and larger libraries in the country should be aware of the fact that many small size libraries benefit from such country wide collaborations in many respects and they may not afford to handle some services alone for instance synchronous interaction with users. To distribute the best reference services in every corner of the country via consortia smaller libraries should be supported by bigger libraries.

5.6 Implications for further research

There are natural differences between traditional reference services and virtual reference services. Virtual reference services has been already under debate since the electronic resources and the remote access have changed the way of delivering reference services, therefore, there are several possible implications for the further research.

Knowing more about the patrons, looking at the service, finding out where the gaps are and figuring out how best to fill them are important for sustainability. The users and their expectations are essential for the delivering of content and services when a library is developing a service, and it is definitely important to look at the evaluation from a broader perspective. Therefore, a combination of user's expectations with librarians' perspectives towards the virtual reference services would be studied. On the other hand, attitudes and behavior of reference librarians when they are providing virtual referencing would be an interesting research topic.

It would be also interesting to investigate on social forms of virtual reference through exploring information seeking behaviors of users. While there has been a great deal that has focused on one to one virtual reference not much has looked to how we can use technology to break out of this replication of physical reference.

Future research may include an evaluation and comparison with other collaborative virtual reference services in Scandinavian Countries. Sweden, Denmark and Finland are currently running virtual reference services in nationwide. A comparative study which includes these examples would be interesting.

Another issue that should be examined is related to improving the provision of personalized virtual reference services in the libraries. Studies on providing a personalized assistance experience would be interesting.

Digital reference is a growing and evolving field and library reference service in conjunction with many other fields such as ICT. There has been an increasing usage of mobile devices recently in many different service sectors including libraries. A study on the mobile technologies in relation with the VRS could be carried out.

5.7 Conclusions

In summary, this thesis has five different chapters. The first chapter started with the Background to Study, which included research theme, Objective of the study, scope of the study, Motivation to the study, Justification of the study and Limitations of the study. The second part explained Background of Case: Biblioteksvar and presented Review the related literature to the study, starting from Virtual Reference Services to Collaborative Virtual Reference service. The third chapter provided information about the Methodology used in the study. The fourth chapter focused on the Analysis of Data gathered from the survey interviews and questionnaire. And finally fifth chapter of the study presented the Discussion and Recommendations.

Today's virtual reference services utilize various communication channels yet, the current primary modes of delivery for virtual reference services are generally e-mail, web based electronic form, and real-time chat communication. As virtual reference becomes popular, libraries must develop strategies for managing multiple simultaneous requests and the inevitable problem of patrons. An ideal Virtual Reference Service should provide professional reference service to the patrons anywhere, anytime because libraries are service-oriented. To fulfill this purpose and overcome the challenges, building a sustained collaboration for the virtual referencing among the libraries maybe a solution.

This study has examined the motivations of librarians for collaborative virtual reference services thorough exploring perspectives of the librarians who were participated in collaborative effort for virtual referencing in Norway. The results of this study provide insight to library professionals in their attempt to improve the virtual reference services and contribute in their endeavors towards collaboration as well as several implications for future collaborative virtual reference practice and research from the practical perspective through demonstrating that how a nationwide collaboration has been working.

REFERENCES

- Agosto, D.E. et al. (2011). A model of the reference and information service process an educators' perspective. *Reference & User Services Quarterly*, 50(3), 235–44.
- Aldrich, A. W. (2008). Creating collaborative workstations for reference and public use in academic libraries. *College & Undergraduate Libraries*, 15 (3), 364-377.
- Arellano, M. A. M. (2001). Virtual reference services. *Ciência da Informação, Brasília, DF*, 30(2). Retrieved on March, 2012 from http://eprints.rclis.org/bitstream/10760/5638/1/ARTIGO_traduzido.pdf
- Ask a Librarian (2012). *Finnish library services: Ask a Librarian*. Retrieved on March, 2012 from <http://www.libraries.fi/en-GB/ask/>
- Berube, L. (2003). Ask Live! UK public libraries and virtual collaboration. *Library and Information Research*, 27(86), 43-50.
- Berube, L. (2004). Collaborative digital reference: an Ask a Librarian (UK) overview. *Electronic Library and Information Systems*, 38, 29–41.
- Biblioteksvar (2008). *About Biblioteksvar*. Retrieved on February, 2012 from <http://biblioteksvar.no/en/about/>
- Boss, R. W. (2007). *Virtual reference*. Retrieved on April, 2012 from http://www.ala.org/ala//mgrps/divs/pla/plapublications/platechnotes/Virtual_reference.pdf
- Bromberg, P. (2003). Managing a statewide virtual reference service: how Q and A NJ works. *Computers in Libraries*, 23(4), 26-31.
- Chowdhury, G. (2002). Digital libraries and reference services: present and future. *Journal of Documentation*, 58(3), 258-283.
- Ciccone, K. & VanScoy, A. (2003). Managing an established virtual reference service. *Internet Reference Services Quarterly*, 8(1/2), 95-105.
- Connaway, L.S., Radford, M.L. & Dickey, T. J. (2008). On the trail of the elusive non-user: what research in virtual reference environments reveals. *Bulletin of the American Society for Information Science and Technology*, 34(2), 25-28.
- Daugaard, V. (2002). Net librarian a joint project. *Scandinavian Public Library Quarterly*, 35 (2). Retrieved on March, 2012 from http://www.splq.info/issues/vol36_1/03.htm
- Daugaard, V., Fogh, M. & Nielsen, E. (2006). Managing a full scale, 24/7, reference service consortia: integrating specialists from public and academic libraries *In R.*

David Lankes ... [et al.], (Ed.), *The virtual reference desk: creating a reference future* (143-153). New York: Neal-Schuman Publishers.

DeGroot, S. L., Dorsch, J. L. & Collard, S. (2005). Quantifying cooperation: collaborative digital reference service. *College and Research Libraries*, 66, 436-464.

DeHart, D. L. (2002). *Virtual reference services and the changing role of reference librarianship in the 21st century*. Retrieved on March, 2012 from <http://www.appstate.edu/~dehartdl/courseworkfiles/lis656paper.pdf>

eDialog24 (2012). *Hva er eDialog24?* Retrieved on April, 2012 from eDialog24.no

Evans, L. McHale, N. & Sobel, K. (2008). Apples and oranges: creating a hybrid virtual reference service with proprietary chat reference software and free instant messaging services. In Marie L. Radford and R. David Lankes (Ed.), *Reference renaissance current and future trends* (163-174). New York: Neal-Schuman Publishers.

Fletcher, J., Hair, P. & McKay, J. (2005). *Online librarian—real time/real talk: an innovative collaboration between two university libraries*. Presented at VALA 2004 Conference, 3th February 2004. Retrieved on March, 2012 from <http://www.vala.org.au/vala2004/2004pdfs/20FIHaMc.PDF>

Godfrey, K. (2008). A new world for virtual reference. *Library Hi Tech*, 26(4), 525-539.

Helfer, D.S. (2003). Virtual reference in libraries: status and issues. *Searcher*, 11(2), 63-65.

Hennink, M., Hutter, I. & Bailey, A. (2011). *Qualitative research methods*. London: SAGE Publications.

Jackson, M. G. (2002). A rush to serve: digital reference services and the commitment to 24/7. *Advances in Librarianship*, 26, 299-317.

Jane, C. & McMillan, D. (2003). Online in real time? Deciding whether to offer a real-time virtual reference service. *The Electronic Library*, 21(3), 240-246.

Jin, Y. et al. (2005). Towards collaboration: the development of collaborative virtual reference service in China. *The Journal of Academic Librarianship*, 31(3), 287-291.

Johnson, K. et al. (2012). Collaborative virtual reference really does work, but it takes a tribe. In Radford, M.L. (Ed.), *Leading the reference renaissance: today's ideas for tomorrow's cutting edge services*. New York: Neal-Schuman Publishers. Retrieved on March, 2012 from http://www.cde.state.co.us/cdelib/download/pdf/AskColorado_Article.pdf

- Kern, M. K. (2009). *Virtual reference best practices: tailoring services to your library*. Chicago: American Library Association.
- Kresh, D. (2002). Virtually yours: thoughts on where we have been and where we are going with virtual reference services in libraries. *The Reference Librarian*, 38(79-80), 19-34.
- Kwon, N. (2006). User satisfaction with referrals at a collaborative virtual reference service. *Information Search*, 11(2). Retrieved on February, 2012 from <http://informationr.net/ir/11-2/paper246.html>
- Kwon, N. (2007). Public library patrons' use of collaborative chat reference service: The effectiveness of question answering by question type. *Library & Information Science Research*, 29, 70–91.
- Lankes, R. D. (2003). Digital Reference. In Miriam Drakes (Ed.), *Encyclopedia of library and information science* (2nd Edition). New York: Marcel Dekker, Inc.
- Lankes, R. D. (2008). Virtual reference to participatory librarianship: expanding the conversation. *Bulletin of the American Society for Information Science and Technology*, 34 (2), 11-14.
- Lavender, K., Nicholson, S., & Pomerantz, J. (2005). Building bridges for collaborative digital reference between libraries and museums through an examination of reference in special collections. *Journal of Academic Librarianship*, 31(2), 106-118.
- Lietzau, Z. (2010). A statewide online reference tracking tool: making it happen. *Colorado Libraries*, 35(1). Retrieved on March, 2012 from <http://coloradolibrariesjournal.org/node/31>
- Lipow, A. G. (2002). *The Virtual Reference Librarian's Handbook*. New York: Neal-Schuman Publishers
- Matheson, S. (2004). Library LAWLINE: collaborative virtual reference in a special library consortium. *The Reference Librarian*, 41(85), 101-114.
- Matthews, B. & Ross, L. (2010). *Research methods: a practical guide for the social sciences*. Italy: Giovanni Book.
- Maxwell, N. K. (2002). Establishing and maintaining live online reference service. *Library Technology Reports*. 38(4), 5-14.
- Mu, X. et al. (2011). A survey and empirical study of virtual reference service in academic libraries. *The Journal of Academic Librarianship*, 37(2), 120–129.
- Nilsson, U. G. & Ilvered, M. (2007). *Competence clusters for virtual reference services: a new model for collaboration*. Presented at 3rd Collaborative Virtual Reference Symposium, 31st July – 1st August. Denver, Colorado, USA.

- Oder, N. (2001). Shape of e-reference. *Library Journal*, 2001, 2(1), 46-51.
- Palys, T. (2008). Basic Research. In Lisa M. Given (Ed.), *The sage encyclopedia of qualitative research methods*. Sage: Thousand Oaks, CA, 1, p.57-59
- Parker, S. K. & Johnson, E. D. (2003). The Region 4 collaborative virtual reference project. *Medical Reference Services Quarterly*, 22(2), 29-39.
- Penka, J.T. (2003). The technological challenges of digital reference: An overview. *D-Lib Magazine*, 9(2). n/a
- Pickard, A.J. (2007). *Research methods in information*. London, UK: Facet Publishing.
- Pomerantz, J. & Luo, L. (2006). Motivations and uses: evaluating virtual reference service from the users' perspective. *Library & Information Science Research*, 28, 350-373.
- Pomerantz, J. (2008). Evaluation of online reference services. *Bulletin of the American Society for Information Science and Technology*, 34(2). 15-19.
- Pomerantz, J. & McClure, C. (2004). Evaluation of a Statewide Collaborative Chat based Reference Service: Approaches and Directions. In L. Schamber & C. L. Barry (Eds.), *Proceedings of the 67th annual meeting of the American society for information science and technology* (102-109). Medford, NJ: Information Today, Inc.
- QuestionPoint (2011). *QuestionPoint: 24/7 reference services*. Retrieved on April, 2012 from <http://questionpoint.blogs.com/>
- Radford, M. L. & Kern, K. M. (2006) A multiple-case study investigation of the discontinuation of nine chat reference services. *Library and Information Science Research*, 28(4), 521-547.
- Radford, M. L. & Lankes, R. D. (2010). *Reference renaissance: current and future trends*. New York: Neal-Schuman Publishers, Inc.
- Radford, M. L. (2009). *Seeking synchronicity: viewpoints of VRS users, librarians, and non-users on live chat reference*. Presented at British Columbia Library Conference, 17th April, Burnaby, BC, Canada.
- RUSA (2004). Guidelines for implementing and maintaining virtual reference services, *Reference and Users Services Association*. Retrieved on March, 2012 from <http://www.ala.org/rusa/resources/guidelines/virtrefguidelines>
- Shachaf, P. & Horowitz, S. M. (2008). Virtual reference service evaluation: adherence to RUSA behavioral guidelines and IFLA digital reference guidelines. *Library & Information Science Research* 30, 122-137.

- Shachaf, P., Meho, L. I. & Hara, N. (2006). Cross-cultural analysis of e-mail reference. *The Journal of Academic Librarianship*, 33(2), 243–253.
- Sharma, S., Kumar, A. & Singh, M. (2004). Digital reference service. *Bulletin of Information Technology*, 24(6), 11-18.
- Shaw, K. & Spink, A. H. (2009). University library virtual reference services: best practices and continuous improvement. *Australian Academic & Research Libraries*, 40(3), 192-205.
- Stahlberg, R. & Pinard, M. (2008). California's Ask Now law librarian service. In Marie L. Radford and R. David Lankes (Eds.), *Reference renaissance current and future trends* (175-182). New York: Neal-Schuman Publishers.
- Steiner, S. & Long, C. (2007). What are we afraid of? A survey of librarian opinions and misconceptions regarding instant messenger. *The Reference Librarian*, 47(1), 31-50.
- Stormont, S. (2010). Becoming embedded: incorporating instant messaging and the ongoing evolution of a virtual reference service. *Public Services Quarterly*, 6(4), 343-359.
- Tenopir, C. (2004). Rethinking virtual reference. *Library Journal*, 129(18), 34.
- Truelso, J. A. (2004). Partnering on virtual reference using QuestionPoint: guidelines for collaboration between academic libraries in Australia/New Zealand and the US. *Australian Academic & Research Libraries*, 35(4). Retrieved on April, 2012 from <http://www.alia.org.au/publishing/aar1/35.4/truelson.html>
- Vondracek, R. (2006). Balancing statewide and local digital reference service. *The Reference Librarian*, 46(95-96), 81-98.
- Wright, A. & Tu, F. (2008). Expanding service and enhancing learning: preliminary report on a novel virtual reference collaboration. In Marie L. Radford and R. David Lankes (Eds.) *Reference renaissance current and future trends* (183-202). New York: Neal-Schuman Publishers.
- Yost, A. Z. (2004). Digital reference: what the past has taught us and what the future will hold. *Library Philosophy and Practice*, 7(1), 1-16.

Appendix 1: Questionnaire Sheet

The aim of this questionnaire is to gain an insight on Collaborative Virtual Reference Services (Biblioteksvar) from librarians' perspectives. Therefore; the following questions were designed to investigate the librarians' motivations, perceived values and encountered impediments of member libraries who participated in country wide virtual reference collaborations as well as future perspectives. I kindly ask you to give your time and fill the questionnaire; however if for any reason it happens that you cannot complete the questionnaire, it is within your rights to stop at any point. All responses will remain confidential.

Thank you in advance
Yours faithfully,
Muharrem Yilmaz

Questions

1. How many registered users approximately do you have in your library?

2. How many staff from your library has been involved in Biblioteksvar?

3. How long has your library been participating in Biblioteksvar?

- 1-3 years
- 4-6 years
- 7-9 years
- 10-12 years

4. Which of the following communication channels have you often used to answer questions for Biblioteksvar? (Please tick as many as appropriate)

- Chat
- E-mail
- SMS (Text message)

5. Which of the following communication channel/s would provide best reference service to the users overall in your opinion? (Please tick as many as appropriate)

- Chat (Embedded in software or web page)
- Instant Messaging (i.e. Messenger, Skype, etc.)
- E-mail / Web based E-mail
- Social Networking (Facebook, Twitter, etc.)
- SMS (Text message)
- Other (Please Specify)

6. Why did you want to be part of Biblioteksvar? (Please tick as many as appropriate)

- It is a national service / Cooperative Volunteerism
- It is more comprehensive and more efficient than individual virtual referencing
- To create a network for virtual referencing and sharing information resources
- To be innovative
- To sharing knowledge and expertise of staff
- To use more frequently electronic resources
- To reach and appeal more users
- To publicize the library and services
- To share the cost of software
- To develop and enrich the library
- To increase the librarian's skills
- To communicate with users by chat service
- To facilitate the small size libraries
- Other (Please Specify)

7. What was the most advantageous part of the consortium of Biblioteksvar? (Please tick as many as appropriate)

- Staff expertise
- Sharing information resources
- Sharing workload
- Administration and assessment facility
- Sharing expenditures / cost
- Marketing and promoting the library
- Innovative
- Accumulative knowledge base
- Other (Please Specify)

8. What were the challenging parts of the Collaboration? (Please tick as many as appropriate)

- Communication among participant members
- Lack of technical skills
- Advertising
- Administrative issues
- Lack of time
- Lack of staff
- Extra burden on staff
- Trust issue / Reliability
- Local questions from other regions
- Other (Please Specify)

9. Can you please rate your overall satisfaction with your participation in Biblioteksvar?

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very dissatisfied

10. If you stopped participating in Biblioteksvar before it was terminated, what were the reasons? (You may respond in Norwegian if you wish)

11. What were the valuable experiences which you have gained from Biblioteksvar? (You may respond in Norwegian if you wish)

12. What places do you envisage Virtual Reference taking in library services in the next 5 years? Where do you see your library in the near future in terms of Virtual Reference Services? (You may respond in Norwegian if you wish)

13. If you have any additional comments/opinions please add. (You may respond in Norwegian if you wish)