A Framework for Personalized Library Services

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1. Introduction

This paper presents a framework by which libraries and their clients can gather distributed personalized library services in one place. A personalized library service is a service created uniquely for the client. A subject alert from an abstracting and indexing database is one example of a personalized library service.

The paper starts out by analyzing the factors resulting in a transition from a user perspective to a client perspective in libraries. The implications of the transition to a client perspective is discussed and recent efforts to create virtual reference services and personalized digital library services are considered from the client perspective.

The theoretical framework for gathering distributed personalized library services is based of the first five chapters. The framework is presented in chapter six. This chapter also elaborates on a mechanism, which could be used to implement the services.

The focus in this paper is on university and research libraries, but the reasoning is applicable to other related areas as well.

2. Background

2.1 The Evolution of Scholarly Publishing

Scholarly publishing is in the midst of one of its greatest transformations ever. Publishers, secondary publishers (producers of abstracting and indexing databases), libraries and end-users are all affected in one way or the other. The publishing market is characterized by rapid consolidation through mergers and acquisitions both vertically and horizontally. This blurs the lines between publishers, secondary publishers, and all other service providers in the market. The largest companies keep getting larger in both scale and scope, but smaller players, both commercial and non-commercial, still proliferate as they strive to take advantage of the Internet and experiment with new publishing and service models.

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1 This paper may be reproduced without permission.
Publishers are transferring their journals from print to electronic format and implementing value added services such as inter-linking via DOI\textsuperscript{2} and OpenURL\textsuperscript{3}, which directly benefit end-users. Additionally, publishers are merging their journal collections with other services and developing their sites into full-fledged portals.

Secondary publishers are including new types of documents such as e-prints into their abstracting and indexing databases (A\&I databases). The secondary publishers are also participating in inter-linking initiatives and implement emerging standards (Kaser, 2002).

Non-commercial publishers such as university presses and professional associations are working together with libraries to make their resources as accessible as possible. SPARC\textsuperscript{4} has JSTOR\textsuperscript{5} and is actively promoting institutional archiving\textsuperscript{6}.

Libraries have formed consortia to streamline the process of licensing of electronic resources\textsuperscript{7}. The ever-increasing amount of information available in digital form and the proliferation of computerised search tools have moved the emphasis from the size of collections to the ability to access collections. As will be shown below, libraries have modified their old systems and work methods, and are now developing new digital collections and services.

The end-users have benefited greatly from the transformation from print to electronic format. They can now perform searches in A\&I databases and access the full-text of journal articles from their desktop. These services were unavailable only a few years ago. The main drawback from this development is information overload.

2.2 Changes in End-users Behaviour

As previously mentioned, the changes in scholarly publishing have brought about radical changes in the behaviour of end-users. This part summarises the most important trends related to end-users.

Self-sufficient End-users

Outsell, Inc., an information industry research and advisory firm, reports that more than two thirds of corporate end-users prefer to obtain external information by seeking it out themselves. The research surveyed the habits of 6,300 corporate end-users. (Outsell, Inc., 2001.) This trend is also reflected in reference statistics presented by

\textsuperscript{2} DOI \url{http://www.doi.org/}, and CrossRef \url{http://www.crossref.org/}
\textsuperscript{3} OpenUrl \url{http://library.caltech.edu/openurl}
\textsuperscript{4} SPARC \url{http://www.arl.org/sparc/}
\textsuperscript{5} JSTOR \url{http://www.jstor.org/}
\textsuperscript{6} Institutional Archiving, see \url{http://www.arl.org/sparc/IR/ir.html}
\textsuperscript{7} IOLC \url{http://www.library.yale.edu/consortia/}, and FinElib \url{http://www.lib.helsinki.fi/finelib/english/}
the Association of Research Libraries (ARL). The statistics show that reference transactions have declined 12 percent between 1991-2000. (Jackson, 2002.)

**For Free vs. For Fee**

Outsell, Inc. also reports that the edge of fee-based information services is fading. In just one year the part of end-users who prefer fee-based information, when making mission-critical decisions, has declined from two-thirds to just over half. (Outsell, Inc., 2001.)

End-users in academia are not used to paying direct fees for their information. They have perceived information to be free of charge and a lot of the licensed journals and databases might be perceived to be free, since they are usually paid for over the library’s budget. However, the cost of information might be estimated in terms other than money. Griffiths and King (1993) showed that visits to the library decrease significantly as distance (in minutes) increases. With more and more information available from the desktop, the relative cost of visiting the library increases even further. Librarians will have to work hard to promote their expensively licensed resources to their users who are increasingly used to searching for information using free information sources such as Google or Yahoo.

**Perceived Skills vs. Observed Skills**

In the study by Outsell, Inc. (2001) most knowledge workers rated themselves as very skilled using online or Web-based information products, yet they had received little or no formal instruction on information skills. However, studies of end-user behaviour tell a different story.

Chowdhry (2002) reviewed some recent studies involving end-users’ search behaviour in the online and Web search environments. The review shows that very few queries incorporate advanced search features, and when they do so, half of them are mistakes. In fact, in most cases users formulate very short and simple queries, with one or two search terms and very few search operators. Users also spend very little time looking at and deciding the usefulness or relevance of the retrieved items.

Ke *et al.* (2002) analyzed transaction logs of the Taiwan ScienceDirect OnSite E-journal system. It hosts the bibliographic information and full-text articles of more than 1,300 journals published by Elsevier Science. An estimated 625,000 users from all major Taiwanese universities and research institutes can access the system. Ke *et al.* found that users seldom read online help documentation, and that more than 90 percent of the queries were of the simple type, whereas less than 10 percent were of the expanded search type. They also reported that use of query operators beyond the most common was low.

Worlock (2002) reported on a study among four scientific disciplines: hard sciences, life sciences, medicine, and social sciences in the UK. More than half of all
respondents worked in the academic sector, with the rest divided between the public and corporate sectors. The study found that customized alerting services were utilized by less than 25 percent of the respondents.

**Librarians Do It Better**

The literature abounds with evidence of how valuable libraries and their services are. However, much of this evidence does not take the total cost of the service into account since end-users often does not directly pay for the total cost. Griffiths and King (1993) present extensive evidence that documents provided by the library generate on average 44 percent larger savings than documents obtained from other sources. These figures are based on statistics gathered before the widespread use of the Internet.

Ellis *et al.* (2002) analyzed the information-searching behaviour of academic researchers during a mediated interaction with an information retrieval system. The interaction process aided the users to obtain very useful results with help from the intermediary.

**End-users Spend a Fixed Amount of Time Searching and Reading**

Griffiths and King (1991) present empirical evidence suggesting that *professionals tend to spend a relatively constant proportion of their time in acquiring and reading information*. The amount of time professionals spend may shift from acquiring to reading or vice versa, but the total seems not to vary much. This implies that when end-users with poor skills spend a lot of time searching for and acquiring information, they will do less reading. And as shown above, they will read documents that are less valuable to them.

Should end-users be forbidden to search for information on the Internet without the in-person assistance of a librarian? The answer is of course no. However, research shows that end-users benefit from interaction with a librarian. The benefits are both short-term and long-term. In the short-term, end-users receive immediate assistance on specific research questions. In the long-term, interaction with librarians make end-users more information literate.

**2. 3 The Library’s Reaction**

**Libraries at Large Evaluate and Reengineer Traditional Services**

Librarians have not been standing idle by, watching their customers disappear one by one. Nowadays, librarians have to work hard to attract and retain customers. Increased competition for end-users attention has librarians speaking about concepts such as *customer loyalty* and *service quality*. These concepts are well known in the business world and are now receiving increased attention from the library community. Peter
Hernon, editor of the Journal of Academic Librarianship, is one of the most prominent advocates of customer satisfaction and service quality issues. He has proposed that customers should be turned into clients, indicating the long-term relationship between the library and its customers. (Hernon, 2002.)

**Moving Up the Value Ladder: Librarians Get Personal**

Libraries have traditionally offered instructional classes on how to use different library services and systems such as the OPAC. Additionally, libraries have offered groups of students, researchers and faculty discipline specific education. The library has seen itself not only as a provider of information sources and services, but also as an institution providing significant educational services.

In the past decade, librarians involved with instruction have moved away from tool-based, library-centred instruction to the teaching of information literacy skills. This means that instead of teaching how to use a particular resource, librarians are teaching a learning process – what students should expect from different types of resources, the benefits and limitations of different kinds of search strategies, and the importance of critically evaluating information resources. (Jackson, 2002.)

Cardwella *et al.* (2001) describe what they call *personalized research clinics* (PRCs). PRCs are highly individualized, scheduled consultations with a librarian that focus on a specific research need. PRCs are also a way to place student learning and research firmly in the forefront of library service.

Frank *et al.* (2001) take this one step further and propose that librarians should start *information consulting*. The concept of information consulting denotes a dynamic, interactive process in which librarians are active, full partners with faculty and students, facilitating teaching and research.

The trend is towards providing personalized information literacy skills and recognising that it is a value added service. These value added services differentiates the library from other information providers and strengthens the relationship between the end-user and the library.

**Reference Services: The Librarian Left the Building**

Jackson (2002) reports that reference services are responding to the challenges they face by reorganising their workflow and changing the services they offer. There are two prominent trends in reference services. The first trend is the development of *tiered reference structures*. The second trend is labelled *going out to customers*.

Tiered reference services involve having a general reference or information desk, staffed by paraprofessionals or students, who answer general and directional questions. Questions they have been trained not to answer are referred to librarians, usually in a separate office. (Jackson, 2002.) Reference librarians have also
segmented themselves and become subject specialists (Frank et al., 2001).

Going out to customers can be as easy as moving out from behind the reference desk into the library, and taking a proactive role asking users if they need help. But, it can also involve going as far as to the users workplace. (Jackson, 2002.)

Additionally, libraries have started offering e-reference or virtual references services (VRS). This can be considered a method to reach out to customers, but it could also be considered a third trend. VRS will be discussed extensively in chapter three and onwards.

Developing Digital Collections

Libraries are also involved in converting selected parts of their collections into digital format and providing access to external digital collections and resources. Some of these efforts have been directed towards enhancing end-user services, e.g. solving the appropriate copy problem. However, the lion’s share of resources has been directed towards developing and expanding digital collections (Chowdhury, 2002). Only recently has there been an interest in customizing digital libraries to end-users’ needs. Digital libraries will be extensively discussed in chapter four and onwards.

3. Virtual Reference Services

3.1 Reason for Reaching Out

Reference services were briefly described in the previous chapter. It was found that libraries have developed tiered reference structures and that they are increasingly going out to the customers’ turf. Additionally, libraries are now starting to offer e-reference or virtual references services (VRS).

Frank et al. (2001) note that the concept of a library as a place is changing and, as a result, libraries need to be actively involved with end-users, which are at increasing numbers accessing the libraries’ collection from outside the library. Reference services have a central place in libraries’ activities and they have been regarded as personalized services, since in most cases a personal discussion takes place between a user and a reference librarian (Chowdhury, 2002). This is why an increasing number of libraries are planning VRS.

Most VRS are intended to address short inquiries such as brief factual and ready reference questions (addresses, phone numbers, etc.), general questions about the library, questions about the online catalogue and database searching, and provide help in locating information found on databases and websites. Other, more time consuming and otherwise complex questions are not yet suitable to be handled by a VRS. (Kibbee et al., 2002.)
VRS differ from traditional reference services in significant ways - particularly concerning the extent to which the users are involved in finding the information they seek (Kibbee et al., 2002).

The remaining two parts of this chapter present the most common features of a VRS and the trend towards collaborative VRS. A list of resources related to VRS can be found at: [http://www.public.iastate.edu/~CYBERSTACKS/LiveRef.htm](http://www.public.iastate.edu/~CYBERSTACKS/LiveRef.htm).

### 3.2 Features of a Generic Virtual Reference Service

There have been several reviews of virtual reference service solutions in the last two years. Breeding (2001), Kimmel and Heise (2001), Chowdhury (2002), and Kibbee et al. (2002) all discuss different aspects of VRS. It is possible to derive a set of common features for VRS from these review articles.

A typical VRS system includes the following features:

- **A Knowledge base**, which contain information that users can consult before going to resources that require human intervention.
- **Chat** or instant messaging.
- The ability to **push pages** to the end-users’ computers. Pushing a URL directly to the end-users makes it easy for the librarian guide end-users to the digital resources.
- The ability to **co-browse or take control over** the end-users browser. Through these co-browsing features, the librarian can visualize the user’s problem and demonstrate solutions more easily.
- Interaction by **e-mail**. Allows both end-users and librarians more time to formulate their respective questions and answers.
- Some systems also allow librarians and end-users to **share applications**.
- Sophisticated VRS offer features such as voice over IP, video conferencing, and call centre functionality.

### 3.3 Towards Collaborative Virtual Reference Services

Libraries have many incentives to develop collaborative VRS. The start-up and development costs of new VRS are high (Peters, 2002). It is also expensive to maintain around the clock VRS. Collaboration may take advantage of time zone differences and the subject expertise of participating libraries (Breeding, 2001).

Since Library consortia are responsible for licensing a large part of libraries’ digital resources, they are beginning to promote collaborative VRS. One of the most ambitious projects has been the development of QuestionPoint™ by the Library of Congress and OCLC. Diane Kresh from the Library of Congress presented QuestionPoint at “ALA Atlanta 2002” She emphasised the ability to leverage the community of librarians and libraries worldwide, and also pointed out that

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QuestionPoint provides professional reference service to users anywhere, anytime, through a collaborative network of libraries. (Kresh, 2002.)

4. Personalized Digital Libraries

4.1 From Digital Library to My Library

Meyyappan et al. (2000) reviewed 20 digital libraries and found that there are almost as many definitions for the term. They noted that Stanford Digital Library Working Group defines digital libraries as a coordinated collection of services, which are based on collections of materials, some of which may not be directly under the control of the organization providing a service in which they play a role. The Digital Libraries Federation (DLF) explicitly includes specialized staff in the definition.

One thing that current digital libraries have in common is that they focus on access to, and retrieval of, digital information, and hardly lay emphasis on the service aspects (Chowdhury, 2002). However, this is changing as libraries shift their attention from developing digital collections to developing personalized services for end-users. An end-user customizable library is usually branded as “My Library”. The primary reason for developing My Library services is to help end-users deal with the information overload (Ketchell, 2000).

A development occurring simultaneously to My Library is the development of end-user customizable portals. Commercial portals like Yahoo have been offering services like My Yahoo for years. However, publicly funded portals for higher education are just beginning to offer “My Portal” kind of services. Metcalfe (2001) describes “My Humbul” service from the humanities portal Humbul\(^9\). My Humbul users can save selected records from searches, create alerts, and export records in different formats. Humbul is one of several UK initiated portals\(^10\).

Portals started out as gateways or starting points to freely accessible information stored elsewhere on the web. Publicly sponsored portals targeted at higher education are now integrating access to licensed material. This development complements and sometimes overlaps with the development of digital libraries and My Library initiatives. In a few years time it will probably be difficult to tell when a user leaves a portal and enters a digital library.

Both My Library and My Portal aim to be tools that the end-user utilizes for education and research activities over an extended period, enabling a long-term relationship between the end-user and the service provider.

\(^9\) [http://www.humbul.ac.uk/](http://www.humbul.ac.uk/)
\(^10\) [http://www.portals.ac.uk/](http://www.portals.ac.uk/)
4.2 Features of a Generic My Library

Many articles have been published about My Library services. Fernández et al. (2000), Cohen et al. (2000), Gambles and Paschoud (2001), Ghaphery (2002), Ghaphery and Ream (2000), and Ketchell (2000) all discuss different aspects of My Library services. It is possible to derive a set of common features for a generic My Library from these articles.

A My Library system can include the following features:

- Customize links to e-journals, A&I databases, and other web resources available from a predefined list maintained by the library.
- Add links to web resources found anywhere on the Internet (not limited to the library’s collections).
- Ability to directly add resources from other library collections within the same digital library.
- Ability to get material that matches the users profiles (from the OPAC, tables of contents, or from some other source).
- Customizable search box (select which sources should be searched by default).
- Receive customized news from the library.
- Interlibrary loan mediated through a web form.
- Electronic delivery of articles requested via interlibrary loan.
- E-mail links to relevant subject specialists in the library.

Future plans include integration with VRS and the ability to create a My Library for smaller groups.

Ghaphery (2002) notes that a minority of users accounted for the majority of accesses at the My Library implementation at Virginia Commonwealth University. Cohen et al. (2000) note that My Library has the potential to be an academic’s primary knowledge-based web space as he or she follows a research path (or, indeed, simultaneous research paths) for many months or even several years. However, Chowdhury (2000) points out that there is almost no provision for quality reference and information services in current implementations of My Library. Libraries have to reach beyond the small group of devoted end-users if My Library types of services are to succeed.

5. What It All Adds Up To

5.1 From a User Paradigm to a Client Paradigm

This chapter analyzes the previous chapters and suggests that we are moving from a user perspective to a client perspective. It also argues that VRS and My Library services should be integrated, and explores issues regarding privacy and the lack of standards.
The System, User, and Client Perspectives

When Dervin and Nilan (1986) reviewed the post-1978 literature on information needs and uses they found that a paradigm shift was well under way. They defined the old paradigm as the system-view paradigm, and the new paradigm as the user-view paradigm. The system-view focuses on the observable interaction between the user and the system (a system can e.g. be an OPAC or an entire library). The user-view focuses on how users perceive the system. The user-view has brought both cognitive and psychological aspects into the field of library and information science research. However, the user-view still assumes the context of a system and a user. This assumption is now changing.

The author argues that we are now in a transition from a user perspective to a client perspective.

Libraries have viewed students, researchers, and faculty as users, patrons, customers, or clients and given different reasons for doing so. Peter Hernon, editor of the Journal of Academic Librarianship, has been urging libraries to turn customers into clients in order to indicating the long-term relationship between the library and its customers (Hernon, 2002). Reference services are adapting a client perspective with the introduction of tiered reference services and information consulting.

The reasoning behind My Library services also indicates that libraries view the end-user relationship as a long-term commitment. Additionally, the development of My Library services such as the ability to add links to web resources found anywhere on the Internet (not limited to the library’s collections) indicates that libraries now consider assisting clients in their information seeking, regardless of which services they use, as their main task. When a client is considered a customer, there is an implicit assumption that the customer is the library’s customer and therefore uses the library’s products and services. On the other hand, a client relationship assumes that the library works together with the client and resolves the client’s problem with whatever products and services are needed, regardless of who provides them. The client paradigm assumes the “context-of-client”, rather than “context-of-library”. The remainder of this chapter deals with the implications of implementing a client perspective in libraries.

Personal and Professional Privacy

A client relationship assumes great knowledge of the client’s situation, thereby affecting privacy issues. Ketchell (2000) and Peters (2002) note that libraries traditionally have guarded their clients’ data very carefully. Indeed, most client data is rapidly deleted with respect to the privacy of the client. However, the development of systems such as My Library and VRS, which are built to support a client relationship, require preservation of large amounts of client data.
Morgan (2000) is also concerned about privacy, but argues that librarians should develop a relationship with their clients similar to the doctor-patient relationship in medicine and the lawyer-client relationship in law.

How can libraries provide excellent personalized services while still respecting a client’s privacy? There are three things to consider. Firstly, libraries need to realise that clients use the library for both personal and for professional reasons. This reasoning leads to the introduction of the two concepts of personal privacy and professional privacy.

Secondly, libraries must become aware of the differences between the two concepts and clearly separate them. The personal privacy sphere can include the client’s interests in health, hobbies, personal finance, politics, sports, religion, sex, etc. The client may wish to be as anonymous as possible when enquiring about these matters. On the other hand, professional privacy may be just the opposite. A client may wish that the library knows as much as possible about a client’s information need. However, a client does not want all professional preferences to be known by people outside the library. But the client may not mind that a librarian knows about this as long as the privacy of the client is respected within the client-librarian relationship.

Thirdly, libraries must develop privacy policies, which consider both personal and professional privacy. Then libraries can begin to implement services, which are capable of supporting both policies. Several of the My Library projects consider giving clients the possibility of multiple profiles. One possible solution would be to have two profiles, one personal, and one professional. Whatever the solution, libraries cannot use the respect for privacy as an excuse for providing inferior.

5.2 Integrating Virtual Reference Services and My Library Services

Cohen et al. (2000) note that if librarians know of student or faculty research interests, they have traditionally attempted to keep those researchers informed of potentially useful sources. However, due to the size of the research population, it is not possible to know everyone’s research topics. Recent research by Spink et al. (2002) into information seeking behaviour shows that information-seekers with a broad problem (as distinct from the search for a specific fact) often seek information in stages (labelled search episodes) over extended periods and use a variety of information resources. This is called successive searching behaviour. They also found that information retrieval systems generally are built according to a single search paradigm, i.e. one search episode is unrelated to any subsequent search episodes.

Divided They Stand

Virtual reference services (VRS) and My Library services have emerged as solutions for providing large amounts of widely dispersed clients with personalized services. But VRS and My Library services have been developed separately. A comparison between the two services reveals several some interesting facts:
- Both VRS and My Library are highly personalized services.

- VRS, and reference services in general, start from scratch. Each interaction with a client starts as if the client appeared out of the blue. Chowdhury (2002) notes that the reference interview is an important part of the reference service. Furthermore, Chowdhury describes the extensive information about the client’s need, situation, and previous knowledge etc the librarian has to collect during the interview. This process has the characteristics of a single search paradigm. Most reference service interactions are very brief, lasting for only a few minutes. Indeed, most VRS are built to answer only brief factual questions.

- My Library services assume a long-term client-library relationship. Clients are encouraged to create their own lists of resources etc. Clients do so by themselves and without the ongoing assistance of a librarian (except perhaps for technical assistance). Over time, a My Library service becomes a detailed description of a client’s preferences.

- VRS and My Library services are not integrated. The two services may be connected as when a client can insert an e-mail link to a librarian with subject expertise, but they are certainly not integrated. When a client uses a VRS the librarian is unable to access the clients My Library and take advantage of what the library already knows about the client.

- Neither VRS, nor My Library services are integrated with their offline counterparts.

The comparison clearly shows, that in order for libraries to provide excellent services, VRS and My Library services must be integrated, and indeed online services need to be integrated with their offline counterparts. It is useful to introduce two concepts from the business world and their application to library services before describing how the library services could be integrated. The two concepts are enterprise resource management (ERM) and customer relationship management (CRM).

**Introducing Two Business Acronyms: ERM and CRM**

This part describes the concepts of enterprise resource management (ERM) and customer relationship management (CRM) and discusses how they apply to libraries.

ERM is the acronym used in the business world to describe processes and tools used to manage all resources a business needs to go about its business. It is possible to transfer ERM concepts onto libraries and look at the library’s activities through ERM-glasses. Libraries have their own set of ERM processes and tools. These are e.g. collection policies, the OPAC, and all other standards and procedures for handling books, journals, databases, etc. Libraries have an excellent track record of ERM and they have very actively used information technology to streamline all ERM-processes.
CRM is the acronym used in the business world to describe processes and tools used to manage all aspects of the relationship between a company and its customers. Looking at libraries through CRM-glasses reveals that libraries have spent far less implementing CRM than ERM. In general, libraries know quite a lot about their clients, but only on an aggregated or average scale. Libraries can report how many times a day the reference desk is visited and they can also tell how many times, on average, a client uses a service. However, libraries hardly know anything about individual clients. As previously discussed, concern over privacy has played an important role limiting CRM-activities. The information libraries happen to have about clients they have only in an ad-hoc manner. The OPAC is used to keep track of the library’s books and therefore keeps track of which person has which book. Recently, software like SFX\(^\text{11}\) has been used match clients with appropriate resources and services. Nevertheless, SFX is still more of an ERM-application than a CRM-application.

Smaller department libraries generally employ one or two librarians and they serve a relatively small, stable, and homogenous client base. When this is the case, librarians are able to learn the different information needs of students, researches, and faculty. But this system is like a corner shop where the shopkeeper knows his customers personally and keeps the information he needs in his head. This system does not scale well, and when the librarian leaves the CRM-system walks right out the door with the librarian because all CRM-data is in the librarian’s head.

Additionally, both ERM and CRM are “lifetime” processes. ERM tracks resources from the planning of their acquisition to their divestiture. CRM tracks clients from the client acquisition phase to the time when the relationship between the client and business ends.

Fletcher (2001) views CRM from the perspective of a large journal publisher when he states that the totality of customer information may be spread among several different databases on different platforms and in different formats, perhaps even in different geographical locations. When looking at libraries the same way the situation is even worse. For example, the members of the FinElib consortia do get aggregated user statistics\(^\text{12}\), but no real CRM data. Additionally, the data about a client’s use of products and services provided by FinElib is scattered among all primary and secondary publishers. FinElib or any of the participating libraries have no way of keeping track of their individual client’s use of services such as subject alerts from A&I databases provided by CSA, table of contents alerts from ScienceDirect, cited author alerts from ISI Web of Science etc.

Current VRS and My Library services might each separately support some CRM-activities, but as shown they are not integrated, far from comprehensive, and they do not span over the lifetime of the client-library relationship. The next part of this chapter describes how an imaginary CRM-system could function.

\(^{11}\) http://www.sfxit.com/
\(^{12}\) http://www.lib.helsinki.fi/finelib/aineistot/tilastot.html
Towards Client Centred Library Services

Figure 1 depicts three phases in a client centred library system. In phase one, the client wishes to receive assistance from a librarian and initiates the client-librarian communication. When initiating contact the system identifies the client based on e-mail address, phone number, chat ID, library card or other attribute depending on the mode of communication.

In phase two the system retrieves a record describing the client (this record could actually be a part of the client’s My Library), and matches the client’s record to an appropriate library service record. This requires that both the client’s interests and library’s services are described and can be matched against each other. The matching process automatically puts the client in contact with the librarian most suited to assist the client. This process would solve the appropriate librarian problem, by always connecting the client to the person or service unit best suited to assist the client. In phase three, the appropriate librarian is connected to the client’s My Library and thereby gains access to the client’s preferences and personalized services.

5.3 The Lack of Standards

Libraries heavily rely on standards. Librarians know the benefit of standards like ISBN, MARC, Dublin Core, Z39.50, OpenURL, and OAI-PMH. Indeed, a working day of a librarian is filled with adhering to standards of one kind or another. But, not surprisingly most standards relate to ERM not CRM. In order to integrate client data there is a need for CRM related standards.

Several authors have pointed out the need for CRM standards. Morgan (2000) points out that My Library services would benefit by saving content in an XML format such
as RDF or RSS. He goes even further and states that if this was accomplished then the content of My Library services might be integrated into outside portal applications such as My Yahoo. While discussing further development of My Library services Gaphery and Ream (2000) note that systems such as borrowing records and alerts do not have an open architecture or room to integrate with other services.

Peters (2002) discusses VRS standards and argues that a standard for reference questions would enable libraries to share services, knowledge, expertise, and reference needs. QuestionPoint uses a standardised way to describe questions, answers, and participating libraries. However, QuestionPoint is not applying any existing publicly accepted standard. (Kresh, 2002.)

In 2001 the National Information Standards Organization held a workshop to explore the need for standards on networked digital reference services. During the meeting emerging standards from the Customer Profile Exchange\(^\text{13}\) (CPEX) were discussed as a way to profile clients. (National Information Standards Organization, 2001.) Earlier, Amato and Straccia (1999) designed a user profile model representing a user’s information need and they intend to offer personalized services based on their work. Their model assumes a system such as a digital library, providing a personalized service by filtering new information through a personal profile.

In conclusion, library specific CRM standards need describe three elements:

- The client (as an individual or a group).
- The library, librarian, or library service point.
- Personalized services, since they are basis for My Library services.

In conclusion, work has been done on profiling clients and libraries. However, the work done may not be directly applicable to the integrated CRM services described, but at least it is somewhere in the neighborhood. There has also been a lot of work done to represent different services (e.g. Dublin Core). However, these efforts have been focused on describing services in general, not personalized services. The next chapter explores ways to describe personalized library services.

6. Personalized Library Service Description

The previous chapter showed that the development of personalized library services is hampered by the lack of standards. It was also shown that some work is being done, but that there is still a lack of a standard or mechanism to describe personalized library services. This chapter provides some thoughts and suggestions for such a mechanism.

The chapter starts with a set of assumptions derived from the previous chapters. Then generalising personalized library services. It then gives some examples of

\(^{13}\) See [http://www.cpeexchange.org/](http://www.cpeexchange.org/)
personalized library services. Finally, a mechanism for gathering information about distributed personalized library services is discussed.

6.1 A Derived Set of Assumptions

Based on the literature reviewed in this article it is possible to derive a set of assumptions on which a standard mechanism can be modelled. These assumptions refer to service providers, clients, and libraries.

Services provided by primary and secondary publishers as well as other producers will a) multiply and mutate, i.e. new services will be developed and old services will change form or cease to exist, and b) will increasingly support personalization.

Clients will a) be increasingly information literate and their skills will evolve over time, b) play an active role in searching for the information they need, c) access information from anywhere, d) still need specialized assistance from the library, e) access services sponsored by consortia, universities or other institutions, and finally f) access freely available services as well as services paid for personally. Additionally, the information need of the clients will become increasingly specialised.

Libraries will a) have expert knowledge of different sources and services, b) not have all knowledge, skills, sources, and services required to serve their clients, c) will have to work together with clients and other parties to provide the best possible service, and d) need to gather data about their clients in order to provide excellent service.

6.2 Personalized Library Services

A large amount of library services are distributed across the library’s system and other service providers’ systems. Table 1 describes some of these services (some of which do not yet exist).

Table 1. Distributed Personalized Services

<table>
<thead>
<tr>
<th>Generic Service Type</th>
<th>Service Providers and/or Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;I database - subject alert</td>
<td>CSA, Ebsco, Dialog</td>
</tr>
<tr>
<td>Table of contents alert</td>
<td>Infotrieve, ScienceDirect</td>
</tr>
<tr>
<td>OPAC subject alert</td>
<td>LINDA[14]</td>
</tr>
<tr>
<td>OPAC loan expiration alert</td>
<td>LINDA</td>
</tr>
<tr>
<td>ILL notification alert</td>
<td>Local library</td>
</tr>
<tr>
<td>Cited author/article alert</td>
<td>ISI Web of Knowledge</td>
</tr>
<tr>
<td>Cited patent alert</td>
<td>Derwent</td>
</tr>
<tr>
<td>Recent submissions alert</td>
<td>arXiv.org</td>
</tr>
<tr>
<td>New site alert</td>
<td>Humbul</td>
</tr>
<tr>
<td>New e-journal alert (when a e-journal is added to a specific category)</td>
<td>Electronic journals <a href="http://ejournals.helsinki.fi/subjectList">http://ejournals.helsinki.fi/subjectList</a></td>
</tr>
</tbody>
</table>

[14] LINDA is the union catalogue of the Finnish universities.
The list of services in table above is not comprehensive. One could also include alerts for conferences, research in progress, press releases, jobs, requests for proposal, etc. Libraries currently have no method for gathering information about a client’s personalized services in one place. The remainder of this chapter presents a method, which would allow clients and libraries to gather information about clients’ distributed personalized services in one place, e.g. My Library.

6.3 A Mechanism for Gathering Distributed Personalized Library Services

To gather information about a client’s distributed personalized services in one place, the service providers must enable a client, or librarian acting of behalf of the client, to transfer information about a service to a designated destination e.g. to the client’s My Library. This is described in Figure 2, where a client (or a client representative) visits several service providers’ websites and creates personalized services such as those mentioned in Table 1, and sends information about them to the client’s My Library service.

Figure 2.
A Client Creates Personalized Library Services at Service Providers’ Websites

When a client e.g. performs a search or signs up to receive a table of contents alert at a providers website, he must be given the option to send service information to his My Library. Many service providers allow clients to create their own accounts and save searches etc, and they could at the same time present an option such as “Add Search to My Library”. The client then specifies were the service information should be sent, e.g. jonas.holmstrom@MyLibrary.fi.

Such a mechanism must have a standard way to express, generate and transmit information about a personalized service. Additionally, service providers must
implement the standard and clients must be able to receive and store the service information. An imaginary record displaying personalized library service information is presented in Figure 3. This record is generated from the client’s service information and is then sent to the client’s My Library. The record shows that Lisa Librarian has created an alert on behalf of a client and also added some comments.

Figure 3. A Personalized Library Service Record

<PLS>
<ADMINISTRATIVE DATA>
<FOR>jonas.holmstrom@MyLibrary.fi</FOR>
<BY>lisa.librarian@MyLibrary.fi</BY>
</ADMINISTRATIVE DATA>

<SERVICE DESCRIPTION>LINDA subject alert.</SERVICE DESCRIPTION>

<SERVICE PROVIDER INFORMATION>
This alert is delivered by LINDA...
To edit this alert click<link>here</link>.

Your alert contains...

</SERVICE PROVIDER INFORMATION>

<CREATOR INFORMATION>
Hi Jonas, I created the alert you asked for, and...

</CREATOR INFORMATION>
</PLS>

6.4 If We Build It, Will They Come?

It is beyond the scope of this paper to discuss which elements should be part of the personalized library service record. Indeed any such endeavour should include representatives from libraries, publishers, secondary publishers, etc. Nor is it possible to recommend the use of any existing framework such as Dublin Core, because there are many frameworks, which could be suitable in one-way or the other. The purpose of this paper is to outline the concept, not to provide proof of concept, because that is far too early. No thoughts have been given to security issues, since they are not exclusive to the ideas presented in this paper.

It is clear however that implementing the mechanism presented in this paper would meet with large amount of scepticism from at least the publishers. Therefore, the requirements should be as low as possible, and allow service providers the ability to link to more advanced features. There is nothing stopping publishers or third party service providers from creating their own My Library services and then offering these
services, perhaps integrated with excellent VRS. Professional associations find new sources of income as they could provide extremely specialized consulting services to their members.

Larger publisher could offer My Library services to companies and enhance My Library services with project and team management capabilities.

A common standard for services would also allow clients to transfer their service information from e.g. the university they have been studying at to the company they start to work at after graduation.

7. Conclusion

In this paper it has been argued that libraries increasingly consider their customers as clients and that this transformation can be seen as a paradigm shift. Libraries will no longer address clients’ information needs in the context-of-library, but rather in the context-of-client.

The library has also been looked at through ERM- and CRM-glasses, and while libraries have been found to be good at ERM, they are bad at CRM. One of the reasons for this is the library’s blind respect for clients’ privacy.

While libraries have started offering personalized services such as virtual reference services (VRS) and customizable digital libraries (My Library), these efforts are not integrated with each other. This leads to service inefficiencies and discrepancies between short-term and long-term service needs of the clients.

The main contribution of this paper is the suggested mechanism for gathering distributed personalized library services. This mechanism would allow clients to store all their personalized services, even those not provided by the library, in one convenient place. These services are not exclusive to libraries - any other service provider could develop My Library services of their own. There are huge opportunities for further research in this area since this paper merely points out the possibilities.
8. References


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