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Towards a new library system

A paradigmatic shift in the Finnish library system planning and acquisition

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Abstract

Purpose – Finnish libraries are using different integrated library systems. Higher education libraries funded by the Ministry of Education and Culture are using the same ILS in three different installations on the same hardware. Special and public libraries are using several different systems. Many of these library systems are reaching their end-of-life phase. During the spring and summer of 2011 all the Finnish library sectors together with the National Library of Finland formed a joint committee in order to assess the feasibility of a library system entirety, possibly an open source solution that would suit the needs of all the different types of libraries. The purpose of this paper is to describe and analyse the planning for the acquisition of a new library system initiated in year 2012; the concept is to try to establish a joint system with common databases for all the libraries in all sectors willing to collaborate in this effort.
Design/methodology/approach – The paper describes the evolution of the Finnish library systems and evaluates the methods used in the planning of the new library automation system.
Findings – The broad model of group working was useful in policy making and committing the libraries to the joint project. Using social web-technologies were efficient in project communication and marketing. This type of semi-professional planning was not able to produce accurate specification for programming thus a need for follow-up project became evident.
Research limitations/implications – The paper is based on Finnish experiences.
Social implications – The paper presents a case about the usage of group working in the planning of a library automation system with an evaluation of the possibilities and restraints on this type of approach.
Originality/value – The paper provides an analysis on the usability of broad group working type of approach to the policy making and planning of library automation systems.

Keywords Finland, Group working, Library automation systems, Planning
Paper type Case study

Introduction

The Finnish libraries have been active in implementing the modern library technologies (Saarti, 2006; Tuominen and Saarti, 2012). In Table I the timeline of the Finnish library automation is presented. The modern era of library automation started in the 1970s when some of the largest public libraries started to implement library automation in order to manage lending of library materials. At the same time, academic and some special libraries started to utilize digital technologies, especially in information searching.

The 1980s and 1990s saw the birth of online services. Libraries started to utilize internet technologies both in disseminating their resources and in providing internet access to the general public. During the 1990s, some of the most important Finnish centralized services were inaugurated.

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First off-line loaning systems	Online loaning systems	Integrated library systems and database searching	Birth of the national library database services	Internet and the development of the digital library	Outsourcing, open access, open source, joint systems with other document preserving organizations
The end of the 1970s	The beginning of the 1980s	The end of the 1980s	The beginning of the 1990s	The end of the 1990s	The beginning of the 2000s

Source: Updated from Tuominen and Saarti (2012)

Table I.
Milestones in information technology between 1970 and 2000

The most recent trend in Finnish library automation is the joint library system. These have been most extensively developed within the higher education libraries that already have a joint library automation system. At the present, the planning of the acquisition of a new library system has started; the concept is to try to establish a joint system with common databases for all the libraries in all sectors willing to collaborate in this effort (Luokkanen *et al.*, 2012). In addition to that the recent trend of document dissemination digitalization has led to a national policy where the aim is to implement joint interfaces, automation systems and long-time digital preservation system for all Finnish memory organizations (archives, libraries and museums).

In Figure 1 the data-flow model of the present library environment is depicted. From the integrated library systems one has moved toward an environment that consists of different types of metadata databases and/or repositories. These are managed via different types of software packages and interfaces and tailored according to their users. The recent development has also emphasised the need for user integration to the software development (Connaway *et al.*, 2013). In addition to that (see, e.g. Müller, 2011; Pruett and Choi, 2013) open source technologies provide new possibilities for the development of the library software. For the libraries maybe the most challenging fact is that especially publishers have started to implement their own systems for information and document dissemination: there definitely is a need for strategic thinking in library automation implementation especially when one considers these as investments that must be cost-effective.

Lynch (2000) has summarized the development of the Higher Education library automation in four phases:

(1) computerizing library operations;

(2) rise of public access;

(3) print goes electronic; and

(4) networked information revolution.

Thus we have entered also in Finland at the fourth stage where networking gives new possibilities for innovation and rapid transformation that is needed especially in the higher education environment. In the following we will describe the project initiated in 2011 and ended in 2012 that utilized networking in planning a new library system for all the library sectors in Finland. The projects second phase started in 2013.

This paper reports and analyses the planning of the new library automation system for the Finnish libraries. The first part describes the library automation ecosystem in Finland and the ongoing plans for its renewal. The second part analyses the group working technologies and techniques used in the planning work.

The aims of the new library automation system (UKJ) and enterprise architecture method.

The new Finnish legislation, passed in 2011, drives toward the interoperability of information systems that are funded by the government. To be in line with the legislation the committee decided to use enterprise architecture as a method describing the functionalities of the new library system.

The aim of the process is to assess the feasibility of a comprehensive library system for all types of libraries in Finland. The libraries from the different library sectors have different traditions, domains of expertise, and social environment. This will be the first case in Finland when representatives from different library sectors together formulate the core aims of the library system. It is already evident that the higher education

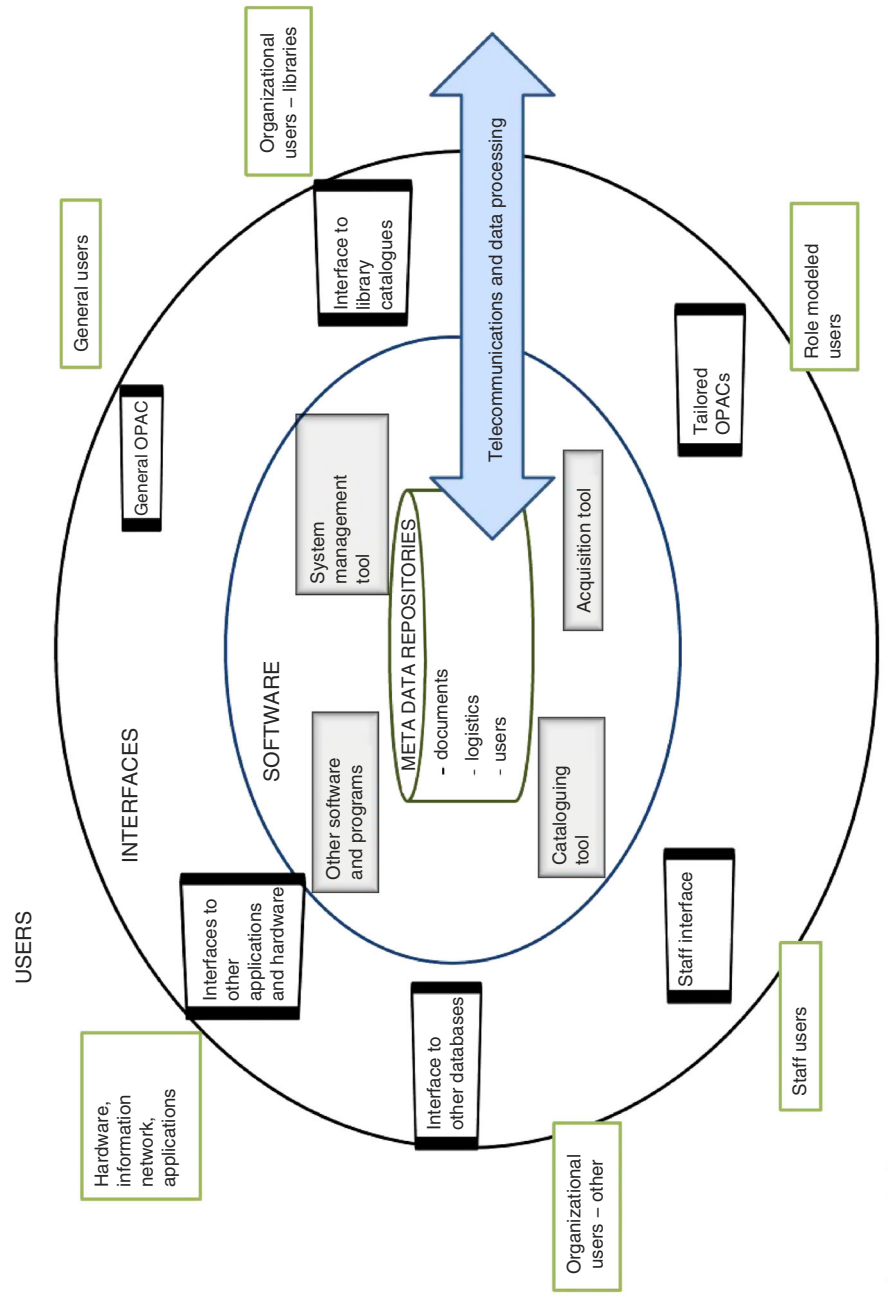


Figure 1.
The data-flow model of the current library environment

libraries have more in common that the special and public libraries – it is evident also in the fact that the library automation system is quite coherent in the previous and more diffuse in the latter. Thus already when setting the aims of the planning it was decided that a modular system that can be easily tailored to these different operating environments must be one of the main objectives in the work.

The project plan specified the following:

- the necessary joint guidelines and culture (e.g. principles for lending and cataloguing);
- products and functions based on library systems;
- the opportunities and needs of joint databases (bibliographic, collections, customer and similar databases);
- joint and tailored sections;
- standards and interfaces;
- a risk analysis;
- a financing solution and a cost-benefit analysis;
- an administrative model and legal issues; and
- a timetable (for the first implementation projects for the new system in 2014).

New Finnish legislation passed in 2011 calls for the interoperability of information systems that are funded by the government. To comply with this legislation, the committee decided to use enterprise architecture as a method describing the functionalities of the new library system. The enterprise architecture itself is a method for describing the operational processes of an organization, information used, systems and produced services as one functional whole. The decision to use enterprise architecture leads to a challenging learning process for almost all participants.

There are two parallel comprehensive projects that have an influence on planning of the new library system. In Finland, we have the National Digital Library project (www.kdk.fi/en/). The project is set up and financed by the Ministry of Education and Culture. The public interfaces (i.e. OPAC with more functionality) of the current and forthcoming library systems are planned to become the interface implemented in this national project (called Finna). In addition, there are several subprojects to expand the national Melinda database a larger union catalogue. The aim is to create a national metadata repository for all libraries (www.nationallibrary.fi/libraries/projects/metadata repository.html). This will have an impact to the cataloguing and documentation processes the aim being a more centralized way of managing and producing metadata for documents.

The way to work and learn from each other

The task of the joint committee incorporates implicitly the creation of a new shared model of libraries workflows. First we have to create an accurate picture of the current workflows and special needs of different library sectors. The variations between libraries are big in all points of view one can image. The second phase is to define what we need. In the definition process the whole modus operandi have to be rethinking. There will be new shared resources which change roles, more or less distribution of work and also work community. The vision of all library sectors of the new system is

also a moving target which is not easily reducible to concise goal. The process will include inter-organizational learning or it may also be identified as expansive learning (Engeström, 2001).

So it was evident that there is no one right answer or model, but we have to create a good tool for each library suitable for their current and coming circumstances. We need to look inside our libraries, to trust our workers and the solution will be invent together. What is needed is something which has been defined as co-configuration work (see e.g Victor and Boynton, 1998; Engeström, 2004). Under this process, we will continuously learn more and more about library work, libraries and our customers. Our definition process has been a learning process. The aim has been to integrate all the library system experts in individual libraries in Finland to share their present knowledge in order to generate new jointly shared knowledge together. As Victor and Boynton (1998, p. 18) state, most business success stories can be traced back to the effective leveraging of knowledge, its transformation into new types of work.

Victor and Boynton (1998) identify five types of work in the history of industrial production. The last one of those is co-configuration work:

> The work of co-configuration involves building and sustaining a fully integrated system that can sense, respond, and adapt to the individual experience of the customer. When a firm does co-configuration work, it creates a product that can learn and adapt, but it also builds an ongoing relationship between each customer-product pair and the company. Unlike previous work, co-configuration work never results in a "finished" product. Instead, a living, growing network develops between customer, product, and company (Victor and Boynton, 1998, p. 195).

They also emphasize the need for customer participation in the planning process (Victor and Boynton, 1998, p. 199). According to Engeström (2004) one critical prerequisite of co-configuration is services which adapt to the changing needs of the user. It requires also flexible knotworking in which no single actor has the fixed authority.

The joint committee decided to keep the assessment process as open as possible from the project point of view, enabling all librarians to join, while sticking to the goal and timetable.

Several working groups ("knots") were formed from all types of libraries to do the actual hard work. The working methods included Wiki collaboration, e-mail lists, web meetings, face-to-face meetings and workshops. All methods should help as in our co-configuration work.

The focus areas of the working groups were traditional ones, such as resources description, circulation, inter-library loans, access to electronic resources, procurement and life cycle surveys of all types of material (i.e. printed, electronic, monographs and serials), but also cooperation with other systems and resources (i.e. financial, staff and student administration systems).

In Table II the strengths and weaknesses in the group working methods during the project are analyzed. It was quite evident that especially during this initial phase this model was fruitful because it enabled the collecting of the different viewpoints of several persons and libraries. On the other hand the management of the actual system-planning was not as efficient as with traditional software planning systems and methods.

Conclusions

The first phase of the project was able to produce a project plan for the actual system project initiated at the beginning of the year 2013. All the library sectors and Ministry

Table II.
The strengths and weaknesses in the group working methods during the project

Group working method	Strengths	Weaknesses
Wiki	Open documentation and informing everyone was able to write documentation and comments	Hard to make structured system descriptions and/or plans a few active people did most of the writing
Video conferencing	Time saving travel saving	Hardware and software malfunctions
Meetings	Communal occasions traditional planning techniques could be used most efficient when policy making was needed	Time consuming (especially when travelling is added)
Seminars	Most efficient in informing people who were not insiders in the project	Time consuming (especially when travelling is added)

of Culture and Education, which funded the project continuation – seem to be committed to this new library system planning. The structure of the system is depicted in the Figure 2.

Co-configuration work requires constant interaction among participants (usually the firm, the customers and the product or services). To create a network of librarians form different library sectors is a time-consuming task.

During the year 2012 we managed to create a well-functioning network in which we gathered together experiences and skills of experts within different sectors. The everyday work in different library sectors is done with very different processes that are described by different terms. That is the reason why it was so time-consuming to find a mutual language and vocabulary. A problem was also the fact that most of if not all the participants in UKJ project worked alongside their normal job hours with no extra time

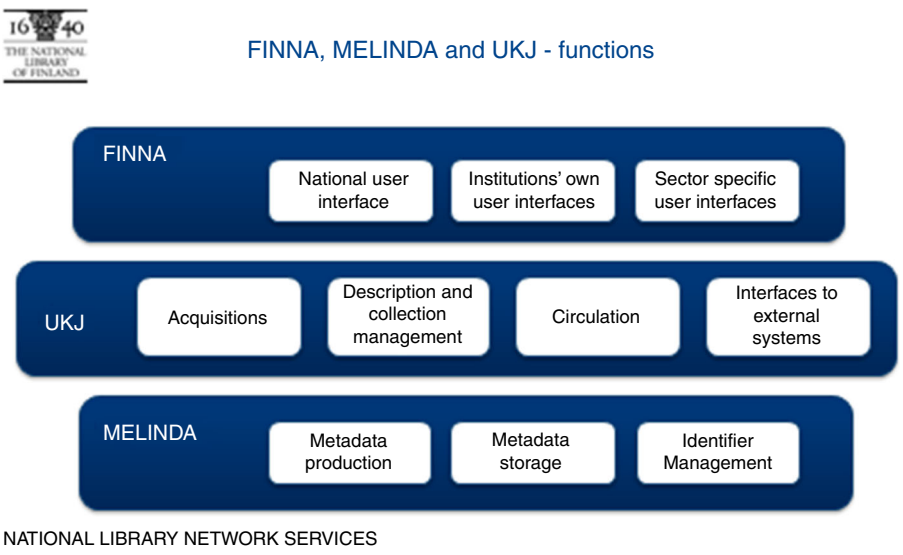


Figure 2.
Functionalities and system interoperationality of the planned Finnish library system architecture

Source: The National Library of Finland, Ahlqvist (2013)

dedicated to UKJ by their superiors. In 2012 it was discovered that it was practically impossible to make precise definitions in UKJ with no dedicated working hours to it.

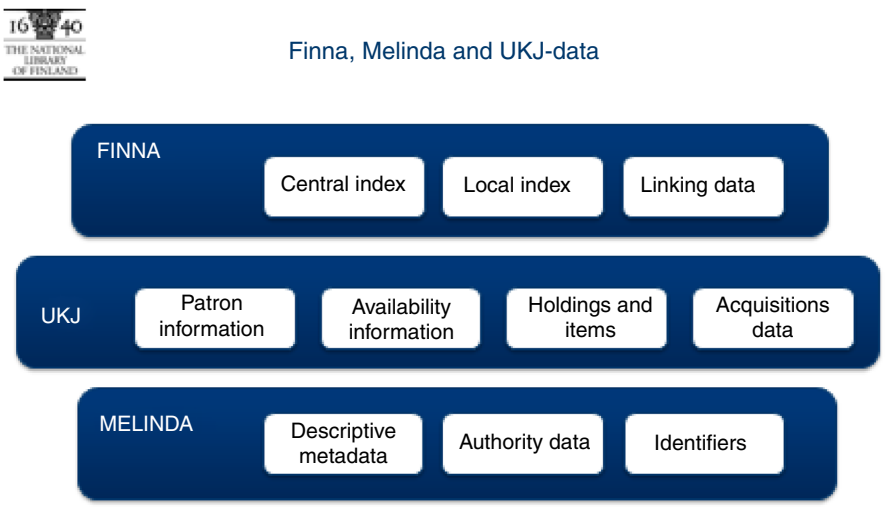
Co-configuration work requires also good networking tools. Wiki works fine if the participants' work habits are similar enough. However, in a big project with dozens of people a project management tool is a necessity. The lack of such a tool may have contributed to our failure to reach our goals in definitions. Another obvious reason for our failure was that when one is enthusiastic about something, one tends to set unrealistic goals compared with the work time available.

In 2013 the Finnish Ministry of Education and Culture awarded a project grant to UKJ. With that grant UKJ project was able to employ staff. UKJ will now face a new challenge in how to make UKJ project staff and a large amount of other experts to work seamlessly together so that learning and co-working would strongly continue, and with no harmful small cliques inside the project.

The work done during this preliminary phase has been utilized in the second phase, i.e. the specification project during the year 2013. The network and ways to co-operate have been adopted from the previous project described in this paper. In addition to that the basic strategic choices are still valid, i.e. open source, modular structure, integration with other national systems (see Figures 2 and 3), co-operation and knowledge sharing.

As usual in projects, the deadlines and timetables have constantly been revised due to their optimistic nature at the beginning of the planning. The enthusiasm and voluntary work is not enough, one needs also funding for permanent system planning staff. Also the rapid change of the environment has an effect, e.g. the interface Finna has been built during the years 2012-2013 that can be utilized also in this library system project and at the same time some libraries are forced to make decision in order to modernize their current library systems.

Thus the need for a proper project planning and organizing tool was evident at the end of the project. The wiki has been an excellent tool for discussion but the actual system planning needs more structured tools.



Source: The National Library of Finland, Ahlqvist (2013)

Figure 3.
The datastructure of the planned Finnish library system architecture

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