

A YEAR FROM NOW YOU WILL WISH YOU HAD STARTED TODAY
- REDEFINING STRATEGY AND ORGANIZATION
FOR LIBRARY AUTOMATION AND CONTENT

Daniel Forsman
Chalmers University of Technology, Sweden
daniel.forsman@chalmers.se

Abstract

There is a need for a new breed of organization and strategy in a changed landscape for library systems, acquisitions and discovery. This paper presents Chalmers library re-organization and strategic viewpoint on library systems, acquisitions, collection development and development methodology based on a complete overhaul of those areas to prepare us for a changed paradigm of how library systems and media is delivered to our organization and users.

Software and Data as a Service has changed the infrastructure for library automation and content delivery. Media and systems are merging in the Cloud, with vendor promise of lower total cost of ownership and demand driven acquisition solutions to ease the burden of information overload. We have passed the tipping point and these services are being rolled out to libraries globally. Chalmers University of Technology evaluated its current library automation systems and workflows with the ambition to better understand what we need from the next generation library systems and how to cope with the flood of digital content available to our users and the selection process.

Keywords: Management, Change, Library systems, Collection development, Organization

A new direction

In 2009 Library director Annika Sverrung at Chalmers University of Technology refused to complete a five-year strategic plan for the library. Caught in a downward spiral where the library had become less visible in the university organization, with increasing costs for media and decreasing funds for staff, the situation called for drastic measures. By refusing to complete the library strategic plan and instead presenting a consequence analysis of the current trend (that would leave the library without staff within 13 years) it sparked a discussion on the role, funding and mission of the library. (Sverrung, 2011)

Charged by the President of Chalmers the library mission and purpose was scrutinized, re-defined and updated. The mission now clearly states and emphasizes the need of library services for successful research and education.

A new library mission

“Access to scientific literature and information is a absolute necessity for higher education and research. How that information is supplied is of strategic importance to the university and should be discussed as an integrated core of the processes for education, research and Chalmers areas of advance. It is important that there is an ongoing discussion between the university management, core research and education. The library acts as an important partner in the different meetings at Chalmers and can adapt to new needs and change as a result of that representation.” (Chalmers, 2009)

The first paragraph of the new library mission clearly states that the role of the library is important, supplying research and education with the information resources that they need. It is also very clear that the library needs to be represented at different levels of the university organization in order to meet those needs.

The new mission also states the importance of building large sustainable and accessible electronic collections. Not only through acquisitions and licensing but also by catering for the publishing efforts of the university and its researchers.

By defining the library business into three major roles, each with its own prioritized goals the new library mission guides the practice and organization. The three roles and priorities are:

Library information resources

- Acquire information resources of relevance to Chalmers research, education and the university areas of advance.
- Safeguard sustainable and effective access to electronic and print resources for those associated with Chalmers.
- Perform an annual review of usage related to relevance and costs.
- Ensure access to IT-systems necessary for caring and maintaining library information resources including coordinating these with internal university systems and national library services.

A learning environment

- Provide Chalmers University of Technology with at least one physical library location.
- Supply a good and creative learning environment for Chalmers researchers and students.
- Supply library users with different types of areas for study and use of computers to access library information resources.
- Ensure that electronic resources are available to Chalmers users at all times and from any location.
- Offer support for the use of electronic information resources.
- Offer loan services for print collections.
- Be an asset for the education at the university providing classes in information literacy.
- Offer a neutral, open, meeting space for students and researchers.

Publishing services and bibliometrics

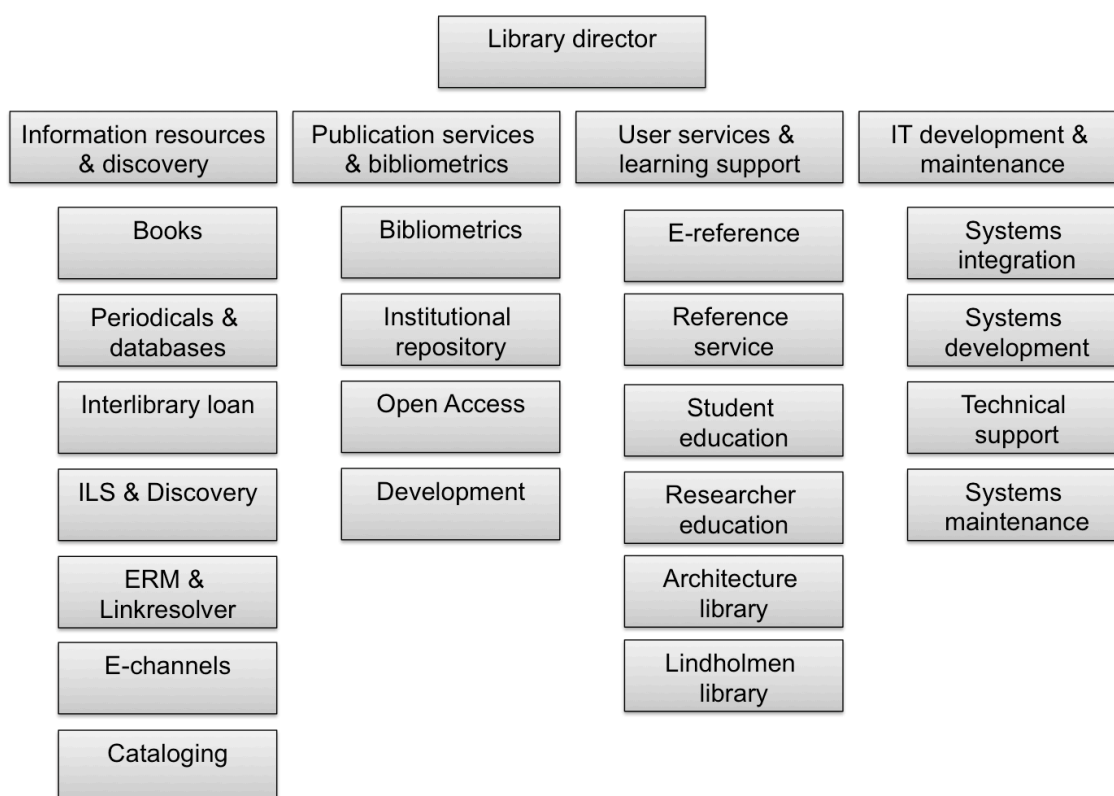
- The library is responsible for coordinating matters concerning Open Access, electronic publishing and bibliometrics at Chalmers University of Technology.
- Maintain a bibliographic database of Chalmers research publications with the support for full text publishing.
- Ensure effective discovery of Chalmers publications.
- Develop services designed to distribute and make university research results more visible.
- Analyze ranking results of interest to Chalmers University of Technology.
- Be an asset to Chalmers management and researchers by providing services for publishing, citation metrics and bibliometrics.

The mission clearly sets the tone for the library activities and where to put our efforts as we develop the organization.

Organization

In order to fulfill the mission the library was re-organized into four departments each with a set of operational functions.

Figure 1



Chalmers Library organization chart

Information resources and discovery

Library information resources and discovery caters for acquisitions, cataloging, web and social media presence, inter library loan and library systems unifying most of the back end operations of the library.

Publication services & bibliometrics

Publishing, ranking and bibliometrics caters for the publishing needs of the university. Provides advice and analytics on strategic publishing and ranking results. The department also maintains the Chalmers University of Technology Open Access policy and ensures that all publications published by affiliates of the university are registered into the institutional repository.

User services and learning support

User services and information literacy is the front end of the library and organizes the functions responsible for meeting the users in customer support, reference services and the information literacy education program provided by the library.

IT development and maintenance

Located within the library organization, a small department with developers and system administrators. As the library adopts more cloud based services local systems administration is diminishing. Instead the efforts are focused on development and integration of software services.

Functions

Each department has several defined functions that report back to a head of department. It is the responsibility of the person responsible for a function to:

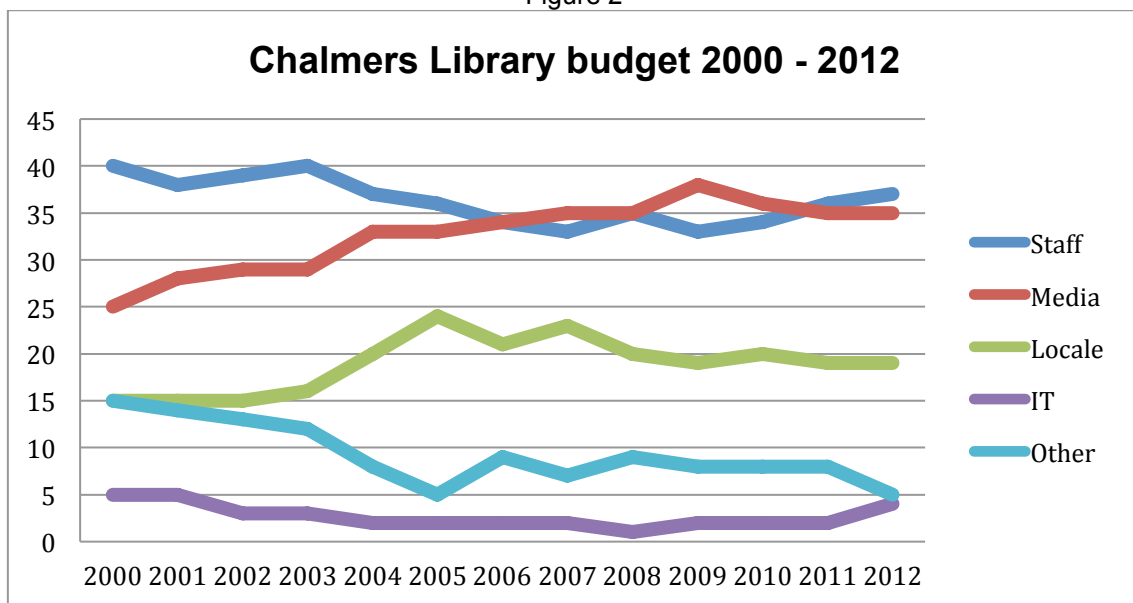
- Co-ordinate and make decisions in day-to-day operations.
- Ensure that current polices are in practice and that those who work in the function comply.

- Communicate important findings and results from the function within the library and to external interested parties.
- Ensure that there are meetings within the function when necessary.
- If there are activities within the function that requires scheduling, ensure that those activities are staffed.
- Network and communicate developments within the function areas of interest.
- Gather and communicate suggestions on how to improve function activities.

Library funding

As the new library mission came in place there was still the issue of decreasing funds. As cost for electronic content and journal subscriptions where increasing there was not an increase in library funding to match. Leading up to a situation where cuts where made to the work force in order to afford with increasing media costs. With the new mission the library changed method of presenting its services. By focusing on what services the library offers and putting a price on each service and in discussion with the commissioning body discuss how to fund those services. In one way leaving it up to the commissioner to prioritize the library services.

Figure 2



Chalmers Library budget 2000 - 2012

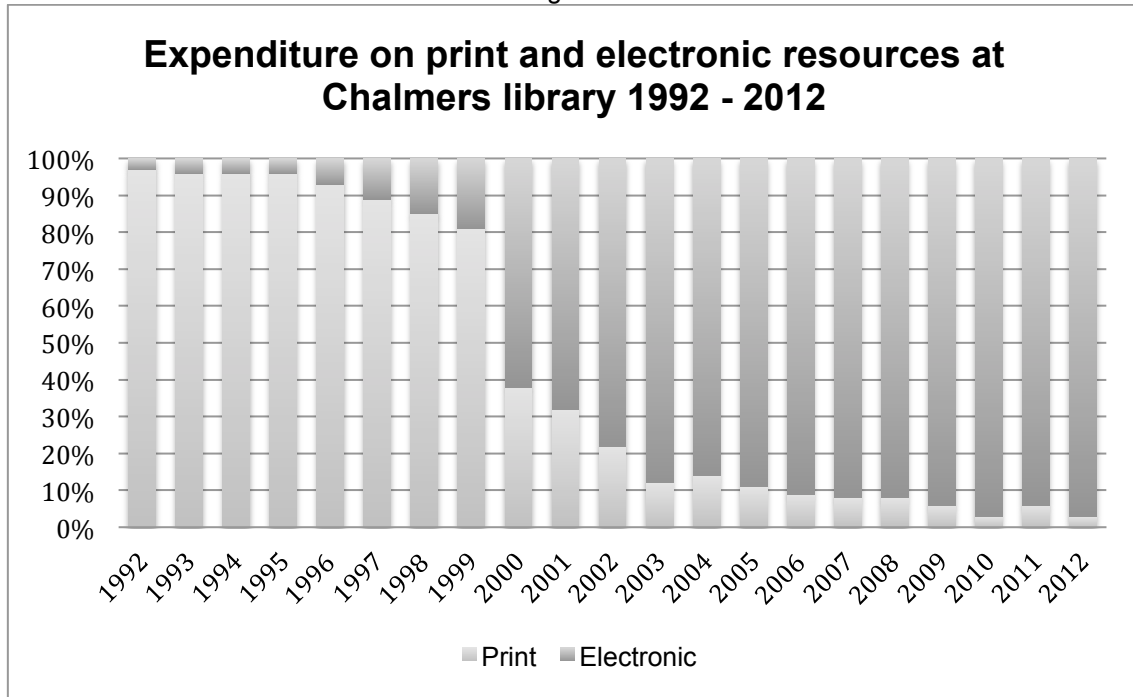
Switching to a service based budget coupled with a new library mission turned out to be a success. In 2010 the budget increased with 8%, in 2011 with 7,4% and in 2012 with 6,6%.

At the same time we are still struggling with increasing costs for the media collection mainly due to increasing fees for journal subscription. (Forsman, 2011) The media budget increased with 113% between 1997 and 2012.

Collection development

The shift from print to electronic collections at Chalmers University of Technology was more then ten years ago.

Figure 3



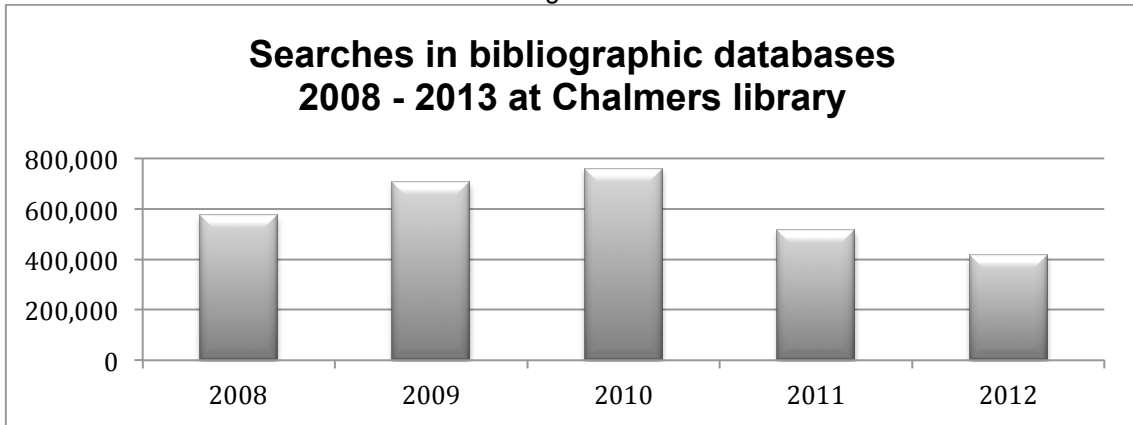
Expenditure on print and electronic resources at Chalmers Library 1992 - 2012

However the organization and collection planning was not fully aware of this until 2010 and the full size of the electronic collection was only grasped with the implementation of a Discovery service. During the implementation phase of the Discovery service the library had to define its collections and the results was challenging. Imagine the print based library economy. One system tracks the inventory and for Chalmers the inventory was about 500 000 items. As electronic resources outpaced the print resources it became difficult to grasp how large the library collection was with more than a hundred databases, thousands of e-journals, e-books and Open Access resources. As the Discovery service came into production the library had defined a collection of 290 million records. The leap from a collection of 500 000 physical items to a collection of 290 million records of things is staggering. A dramatic change that is hard to comprehend. A dramatic change that already had happened and it happened without any clear ideas or direction for the collection development or organization.

It became clear that collection policies needed an update. But most importantly staff needed to take a step back and come to terms with a media landscape that is dominated by electronic content.

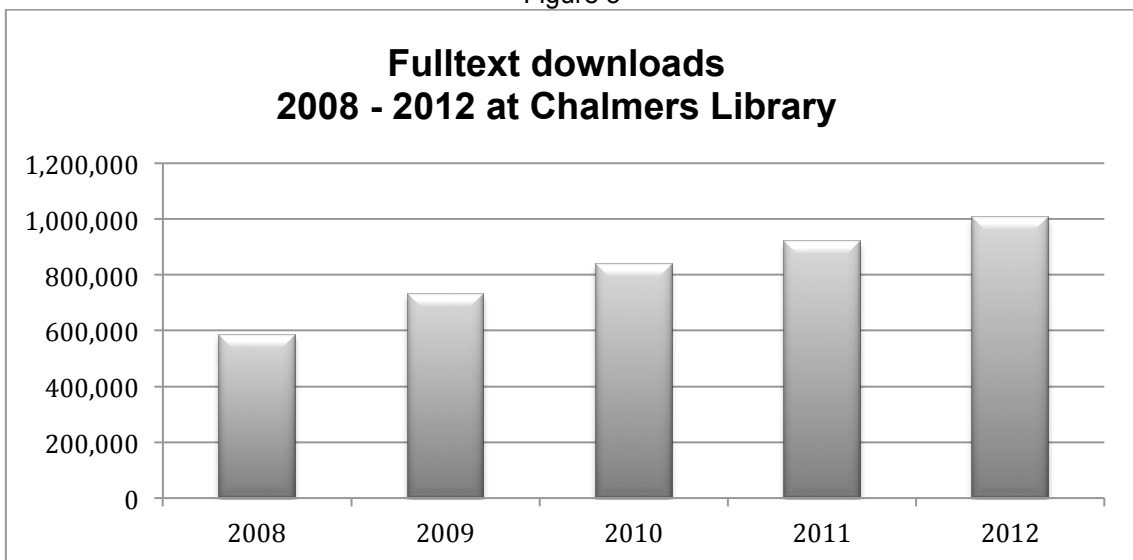
It is apparent that discovery and full text availability is affecting the use of our resources. Searches in bibliographic databases are decreasing. Circulation of print materials is decreasing and full text downloads are increasing.

Figure 4



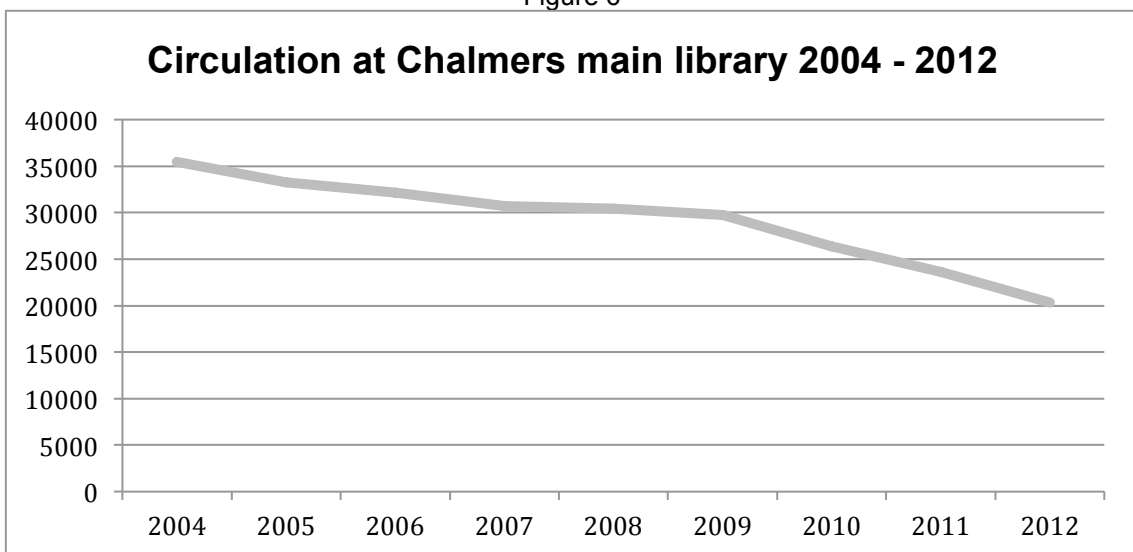
Searches in bibliographic databases at Chalmers Library 2008 – 2012

Figure 5



Full text downloads at Chalmers Library 2008 - 2012

Figure 6



Circulation at Chalmers main library 2004 - 2012

It was necessary to redefine collection policies in the light of how the library consumes and offers information resources to our user community and in regard to the university vision of a sustainable future and the new library mission.

As we define the library collection it is our interpretation of the university vision of a sustainable future that we need to find long term, sustainable financial and technical solutions for accessing the resources that researchers and students need in their education. Chalmers has an ambition to be a highly progressive technological university with a global recognition for its research and education. Our interpretation of that ambition and our guiding principle is to be at the forefront of emerging technologies and resources to fulfill the needs of our researchers and educators.

The library serves Chalmers researchers and students but it is also a public library as defined by Swedish law. Anyone can enter and use the library resources on site. However it is very clear that the community being served is that of the university. When discussing user needs with librarians it is easy to forget that one of the changes with modern library usage is that the users that go the library to use our resources are not in majority. The majority of searches for library information resources and usage of these are initiated and performed without any contact with the library. This effects the experience that most of our librarians have with our users. At the library the majority of those we meet come to use our printed collections or use the infrastructure that libraries supply with group study rooms, wireless network, printers and scanners. Very few come to the library to use the electronic resources. There lies a potential danger in making wrong decisions if libraries make decisions based upon the experiences of meeting only the users who come to the library.

Chalmers library initiated a study to create fictional personas as we develop our services. The personas are based on interviews with students and researchers at the university with the goal of identifying common user behavior. These behavior patterns are then transformed into a fictional person with a user story and help us as we design and develop services for our users. (Olofsson, 2012)

A new policy for collection development

With a new mission for the library and an understanding that the library collection has changed from print to an electronic, there was a need for a new policy on the collection. The new policy was established over a year with a series of workshops. By starting with the university vision and continuing with the new library mission and by the evaluation of workflows the foundation for a new take on the collection, acquisitions workflows and updating the collection development policies where established (Forsman, 2012).

We are building sustainable collections for Chalmers research and education. The library is charged with the task to acquire relevant information resources. Only in rare and special cases does the library acquire something that is not connected to the universities areas of research and education. It might sound obvious but the workshop with library staff exposed different perspectives on what the university profile was. By defining the areas and discussing the areas within the group of people who acquire information resources we took one step closer to a common understanding and practice.

Defining the collection was once easy. But that was when the collection consisted of physical items. Easy to count and keep track of. The modern collection of a university library consists of electronic resources many of these are freely available and located beyond the control of the library.

As the collection has evolved it is necessary for the library to be able to gather information about a resource and make that resource findable. This means that any information resource acquired, free or licensed must be described in a machine readable and exportable format. This includes MARC records, another machine-readable format or represented in a Central Knowledge Base. We define our collection with our holdings, in order to define our holdings we need to access and gather meta-data on individual resources. This means that our collection consists of the resources available in our discovery service. We are very hesitant to purchase any resource that cannot be included in our discovery service.

The development and availability of electronic resources makes it possible for the library to define large collections of information as a part of its collection without having licensed access or ownership of these. We strive to include resources that are of interest, available as Open Access or in the Public Domain (through a CC0-license). But as those resources are vast and can be hard to identify individually we strive to incorporate relevant collections of free resources instead of acquiring single works and describing those. Since we incorporate collections of information instead of individual works there might be resources that are not relevant to the university profile in our collection.

Evaluation

The library mission calls for an annual evaluation of the collection. By July each year the library is tasked to perform a report on the collection size, growth and usage. We have identified a number of statistical reports that will provide us with numbers that can be used for evaluation over time and used as a base for changes to the collection.

Collection-reports

- Print books/library unit
- Print journals/library unit
- Subscriptions to electronic journals
- Subscriptions to databases
- An estimate of journals available through subscriptions and databases
- Number of e-books available in the collection (free/licensed/purchased)
- An estimate of the total collection in number of records
- An estimate of the collection in content types
- An estimate of the collection available in print and electronic records
- An estimate of the collection available through the Swedish union catalog

Usage-reports

- Initial loans/unit
- Renewals/unit
- Full text downloads/searches/database/e-journal/e-book
- Cost/Use/Database
- Cost/Use/E-book platform
- Cost/Use/e-Journal platform
- 100 most used electronic journals last year
- ILL requests for articles
- ILL requests for books

Acquisitions

All of the acquisitions are user oriented. Anything requested by a researcher or student is deemed important if they match the university profile. As our development policy is oriented more towards subject packages than individual selection this might result in a broader collection than intended. However the total costs of individual selection compared to packages motivate this. We strive towards unmediated demand driven acquisition if there is controlled method of supplying this that does not cause cumbersome workflows.

We strive to provide as many of the library information resources available in an electronic format. However, it is the user needs that motivates whether or not a resource should be electronic or in print.

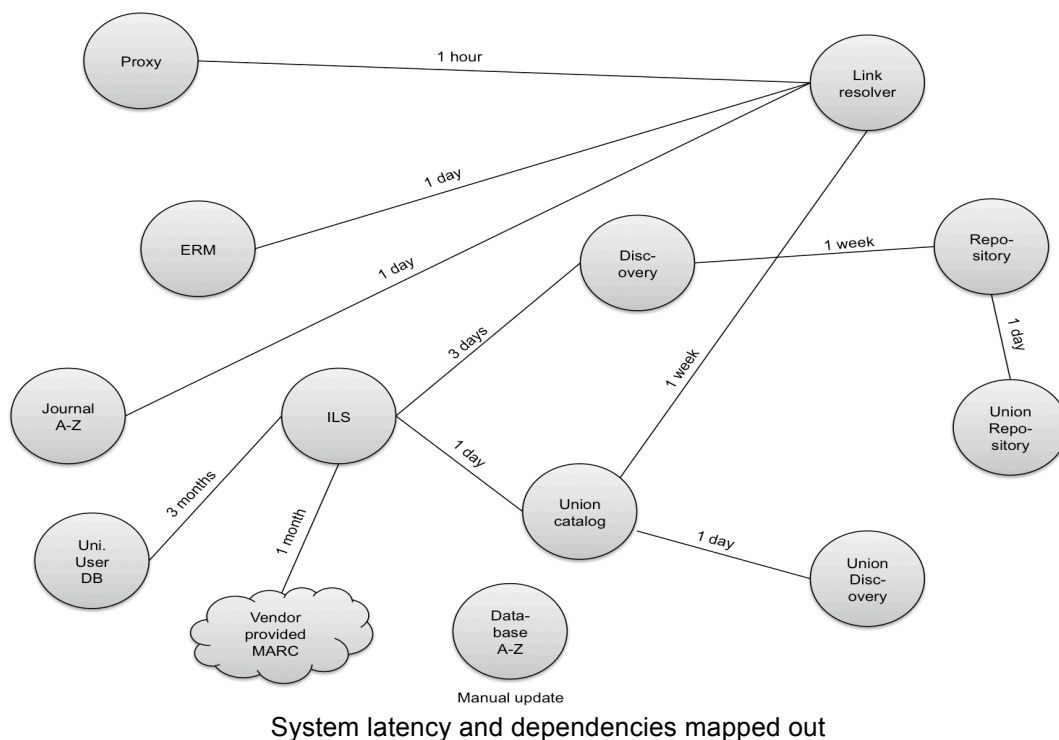
It is the ambition of Chalmers library, for electronic resources, to maintain a sustainable collection accessible over time. We strive to obtain ownership and perpetual access to the library collection. This means DRM-free media with unlimited access over time (perpetual access, no embargo). We strive to obtain generous user conditions for downloading, printing, scholarly sharing, walk in use and ILL. When we negotiate with vendors these are the principles we try to put forward. The principle of ownership and control is superordinate to other forms of access. Meaning that we can buy a printed book for the collection even if that book is available in a licensed e-book collection should we consider it important.

Library systems

In the fall of 2011 Chalmers library invited all university libraries in Sweden to participate in a project with the focus of mapping out local workflows and actual needs for a future library system. 18 libraries participated in the evaluation focusing on local needs and answering a simple but complex question: How do we want the library systems to work in 2014 and with whom do we partner? Since the project focused on local needs and trends there was no common goal for all participants allowing for libraries to share findings despite using different library systems.

At Chalmers University of Technology the project started out with workshops defining the current library systems infrastructure resulting in an understanding of the complicated network of communicating systems and data transfers. Two major findings from this map of our systems network was the data latency between systems and the vulnerability of some of these systems due to staff dependencies. (Forsman, 2012)

Figure 7



Current and emerging trends identified of importance was the further development of global central knowledgebases, personal relevancy ranking, big data, just-in-time access, publishing (content generation) and utilizing a service oriented architecture.

The current and emerging trends coupled with findings from describing and mapping out our current systems infrastructure defined a set of needs or desired outcomes for the year 2014.

Central Knowledge Base

The central knowledge base should describe the physical and electronic collection of the library. Holdings and meta-data should be administered by automated imports and exports utilizing documented API: s. Data latency between systems should be kept to a minimum and monitored. The Central Knowledge base should be the base for administering library holdings in multiple arenas including the discovery system but also other services like Google, the union catalog, etc.

Patron data

Instead of building our patron data services on the ILS we should utilize the university person database and populate other systems as needed. We should strive to use authentication services connected to the university patron database whenever possible to keep user data

latency to a minimum. We need to be able to create groups and permissions in the central user registry.

Access

We should support an improved single sign on experience and a seamless just-in-time access experience when applicable.

Discovery

We offer multiple entry points to our collections. We should strive to offer a direct path from when someone finds something to fulfillment of that information resource. We strive to leverage the service-oriented architecture to include our content and services where it is meaningful.

Publishing

The library exposes Chalmers research output in external search services. We benefit from the library systems infrastructure and enrich Chalmers publications.

Systems strategy 2015-2017

Based on the goals and a newly established understanding of the amount of information resources, current trends we are slowly defining a systems strategy with an anticipated life span of 2015-17. By then the library services platforms currently emerging should be mature.

ILS

Despite the decrease of print materials in the library collection and a decreasing circulation the ILS continues to be a cornerstone in library operations. The current system is very mature and established. Currently the library is dependent on the patron data residing in the ILS. There is a need for a lightweight, open ILS that supports API integration and access to the database. The focus of the ILS is inventory and patron data control. The ILS will focus on dealing with print materials.

Electronic resources

There is a need to consolidate management of electronic resources, link resolver administration, Discovery and the library website/web services. By choosing products from the same vendor there should be fewer interoperability problems. The discovery service should replace the ILS OPAC in as many areas as possible.

By focusing the print materials and patron data handling in the current ILS with support for API integration and focusing electronic resources in products from one vendor there are two tracks for resources. They are unified in the discovery layer. With a short term strategy for library systems there is also a need for a methodology on how to develop the organization and development projects.

Agile and user centered design

In the wake of Web 2.0 and Lib 2.0 we are seeing real implications of the 2.0 principles (Needleman 2000).

Development is in perpetual beta, we are seeing loosely coupled systems and services that are bundled together rather than a heavyweight application (until the introduction of Library Services Platforms) and data is being syndicated outwards to several endpoints.

Events are driven by the user experience and we are focusing on the user and the user's need. But instead of focusing on individual users we are focusing on behavior patterns. Identifying different user communities that consume our services.

Two years ago web development at Chalmers Library adopted an agile development methodology, SCRUM. The purpose of SCRUM is to manage development projects more effectively (Cervone, 2011). Using an iterative process of implementation and review, the project is more defined and controlled. This is due to the shorter time frame for a project and the project teams ability to adapt to the evolving needs and changes as the system being developed is in actual use. By breaking down a project into smaller iterations (sprints of 2-4 weeks) with clearly defined tasks and the goal to release the developments into production by

the end of each sprint the project evolves with each iteration. The purpose is to simplify and add functionality as the product evolves. The traditional phase of planning in a traditional project that can be very time consuming is reduced greatly in agile project management.

There are four cornerstones of agile development:

1. Individuals and interactions over processes and tools.
2. Working software over comprehensive documentation.
3. Customer collaboration over contract negotiation.
4. Responding to change over following a plan.

Working with agile development for software development projects with cross-functional teams in the library has created a common understanding of iterative development and a mutual language for what is called perpetual beta in web/lib 2.0. The agile development methodology has not only influenced the software development but the entire library and puts and emphasis on constant evaluation and development in manageable tasks.

Conclusion

Electronic information resources changed the nature of library operations. Most researchers do not come to the library anymore and print materials are diminishing. The library organization, services and funding needs to evolve and change with its time. By re-defining the mission of the library and moving towards a service based budget model it is possible to re-organize the library to reflect current needs.

It is necessary that library staff understands the new landscape of information resources and systems by focusing on the values expressed in the university vision and library mission. Then it is possible to build a mutual understanding of the new library collection and systems. By expressing the needs of the user community based on user behavior and adopting an agile project management model it is possible to make changes to library operations in faster increments than with traditional project management run by committees.

References

- Cervone, F. (2011) Understanding agile project management methods using Scrum. *OCLC Systems & Services*, Vol. 27 Iss: 1, pp.18 – 22. doi:10.1108/10650751111106528
- Chalmers. (2009). Uppdrag till Chalmers bibliotek. *Translated by author*.
<https://document.chalmers.se/doc/7cfff02a-87dc-41a0-9eb7-5b7a81e1fde8>
- Forsman, D. (2012). Change as a service - challenges and effects of a new paradigm for library systems and content infrastructure. *Library Management*, 33(8-9), 498-510. doi: 10.1108/01435121211279867
- Forsman, D. (2012). Mediaplan – Informationsresurser & Tillgängliggörande, Chalmers bibliotek. Unpublished policy document.
- Needleman, M. (2007). Web 2.0/Lib 2.0—What Is It? (If It's Anything at All). *Serials Review*, Volume 33, Issue 3, September 2007, Pages 202–203.
<http://dx.doi.org/10.1016/j.serrev.2007.05.001>
- Olofsson, K. (2012). Vi presenterar våra tre personer Sofia, David och Maria. *Biblogg*.
<http://blog.lib.chalmers.se/2012/05/14/vi-presenterar-vara-tre-personor-sofia-david-och-maria/>
- Sverrung, A. (2011). Chalmers bibliotek – att vända från botten. Ny strategi och ekonomi = nytt innehåll. ChALS 2011 conference presentation