IMPLEMENTING AN OPEN ACCESS POLICY AT CHALMERS UNIVERSITY OF TECHNOLOGY

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Abstract
In January 2010 Chalmers University of Technology (Göteborg, Sweden) adopted an Open Access Policy, mandating 'Green' Open Access as the general rule for disseminating free access to Chalmers research. The policy was formally enforced as a University President's Decision and the core sentences of the policy were: "All research published by Chalmers' researchers must be made available in an open archive, normally within six months of publication although no later than 12 months. This means that researchers at Chalmers must submit a full-text copy of all their publications in electronic form to the Chalmers Publication Library (CPL)." The Library at Chalmers was given the responsibility to provide the services needed to implement the policy. Not all resources required were in place from the start, and as a first step the Library Director was given a mission to assess the resources needed and make a primary analysis and a plan for implementation. The Library at Chalmers had already long been active in advocating the policy and to the idea of Open Access publishing, but now we had to go from theory to practice. One of theoutcomes of the primary analysis was the formation of a new unit at the Library a Department for 'Publication Services and Bibliometrics'. This paper describes our first year with the Open Access policy and addresses the many issues the Library and the new department has had to manage as we move into our new role as a key disseminator of theuniversity's research outcome. The paper also discussessome future directions, what are realistic expectations and how long time it will take to establish an "open access culture" among Chalmers researchers.

Keywords: Open Access, Open Access mandate, Open Access policy, policy implementation

The context for policy implementation

Since Open Access aims at universal access to research outcomes and therefore is global to its nature, it may seem irrelevant to consider specific national or regional contexts. However, in the practical work to promote knowledge to the researchers about Open Access and to establish routines for free dissemination we start with different conditions, may this be with regard to the scientific production and research infrastructure for a nation or the communicative culturefor a certain scientific field.

The site *Worldmapper* has mapped out the production of scientific research within the STM fields, and according to these results Sweden produces most scientific reports in proportion to its population (SASI Group & Newman 2006). Per one million inhabitants, Swedish research produced 1 159 articles in 2001 (followed by Switzerland with 1 126 articles and Israel with 1 030 articles). Assessing the impact of research, the most-cited fields for Swedish research is agricultural science, science and engineering. Swedish research within these fields is cited 25-30 % above the world average (Karlsson&Wadskog 2006).

So, when a University of Technology in Sweden adopts Open Access principles for distributing its research outcomes, this could be one way to describe the background. Another way could be to describe the national roadmap for Open Access implementation in Sweden. The key features in this process could (very briefly) be summarized as:
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- Signatories of *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities*. As in many countries, the Berlin Declaration is the single most important reference for institutions promoting Open Access. The declaration was signed by the *Association of Swedish Higher Education* (www.suhf.se) in 2004 and by the*Swedish Research Council* (www.vr.se) in 2005. Together with the National Library (www.kb.se) , which signed the declaration in 2006, these organizations have been leading in promoting Open Access in Sweden.
- Mandates. There are up until now four mandates from research funders and three mandates from universities (Hagerlid 2010). In addition several universities have recommendations for Open Access (ROARMAP).
- Institutional repositories and bibliographies. In principle all Swedish Higher Education institutions today runs an open archive/publication database. In many cases the databases covers bibliographic references to all published research from the organization. Since 2009 the National Library operates a database that harvests the local repositories – SWEPUB (swepub.kb.se).

All of these factors were also important in the local process at Chalmers.The Open Access policy at Chalmers University of Technologywas adopted in January 2010. The policy was taken in the form of a President's decision mandating Green Open Access as the general rule of making Chalmers research freely available. In connection with the policy the library was given the commission to establish an Open Access culture among the researchers at the university. In this paper we will describe the background and the motives for the Open Access policy. We will also describe the library's engagement in the process of establishing an Open Access culture and discuss our experience from the first year of implementation

Milestones from the first year with the Open Access policy

Before going into details in the process, we will start with a brief outline of the first year with policy.

- January 2010: The President of Chalmers University of Technology decided on an Open Access policy. The Library Director was asked to present an analysis of the implementation process and the required resources.
- March 2010: The library presented the plan for implementation and had identified the technical development that was necessary.
- May 2010: a follow-up decision clarifying the Policy starting dateand introducing an exception for books, book chapters and patents,

- October 2010: A new department within the library was formed to organize the work with the local publication database, bibliometric services and Open Access support.
- January 2011: A support network for Open Access was formed within the university consisting of the library, the communication office and the legal office.

An important question to address is of course how successful the implementation has been so far. What deposit rate has been achieved during the first year? We believe it is still too early to do any definite calculation and a more thorough follow-up is planned for later this year, but estimation can be given by figures from the national Swedish database SWEPUB. According to SWEPUB, of 1 249 scientific, peer review articles published by researchers at Chalmers in 2010, 7,8 % is available free online. For peer reviewed conference papers the total number published is 752 with 6,4 % available in free online versions. Even though these numbers taken at face value can't in anyway be called satisfying, they clearly indicate the beginning of the process. We can see this if we compare the rate of free online articles for the year before the mandate, and also add the rate for another technical university in Sweden, the *Royal University of Technology* in Stockholm.

Table 1. Percentage of peer reviewed articles available free online, publishing year

	2009	2010
Chalmers U T	1,6 %	7,8%
Royal U T	0,9%	1,8%

Scientific peer reviewed articles. Percent available free online for Chalmers University of Technology and The Royal University of Technology. (http://swepub.kb.se/2011-03-10)

Incentives to the policy

The main reason behind introducing an Open Access policy at Chalmers was a commitment to make university research results available and to disseminate them as widely as possible, as explained in the first part of the policy text:

- *"Chalmers has the ambition to make all published research results freely available to everyone, this is known as Open Access. To ensure that Chalmers' scientific results are disseminated as widely as possible."*

The policy text also points out the Open Access initiatives of other authorities as a reason for Chalmers to follow up and introduce a policy:

- *"This is in accordance with the Berlin Declaration on Open Access, to which the Association of Swedish Higher Education is a signatory. It is also in accordance with the requirements of an increasing number of research funding bodies."*

Chalmers is a member of theAssociation of Swedish Higher Education and had therefore indirect already signed the Berlin Declaration.

When, what and how?

- *"…. the President has decided to introduce an Open Access Policy, which applies from January 1, 2010*

So, the policy applied from January 1, but how should this be interpreted? Soon there were questions about the validity of the policy that needed to be answered e.g. the policy could hardly supersede already signed publication agreements for articles not yet published? There was a need to make clear how the starting date should be interpreted and consequently there was a follow-up decision taken later the same the spring stating that the policy is applicable only to

publications where the signing of publishing agreements/copyright transfer took place *after* January 1 2010.

A green policy for sure, the researchers were asked to make all research they published available:

- *"All research published by Chalmers' researchers must be made available in an open archive, normally within six months of publication although no later than 12 months."*

But was it possible to apply these requirements to all types of publications? What about books for instance? In the same way as we had had to reconsider the question of the starting date we also had to modify the concept of "*All research published* " and make an *exception for books, book chapters and patents*, the deposit these publication types was made optional in a later decision.

- *"This means that researchers at Chalmers must submit a full-text copy of all their publications in electronic form to the Chalmers Publication Library (CPL)."*

It is not enough to deposit in another open repository. A copy should be deposited in CPL regardless of depositions in other open archives, the reason for this that Chalmers cannot guarantee the availability of the material in other open archives. Technically it also means that a metadata record has to be registered first:

- *"A publication reference must also be registered in CPL, referring to the copy submitted (earlier decision C2004/700)."*

Chalmers had already a decision on obligatory registration on metadata in CPL (since 2004).

The policy states that authors should try to keep rights to their works and seek to negotiate and at least secure the right deposit in an open archive.

- *"Transfer of copyright should be avoided if possible. The author ought to secure the right to parallel publish his/her work, and must at least retain the right to deposit it in an open archive within six months at the latest, or in exceptional cases within 12 months."*

The permissible delay is 6 months after publishing (12 months in exceptional cases) then they should be made freely available.

- *"Researchers at Chalmers are recommended to publish in journals that are freely available, so-called Open Access journals, when this is appropriate."*

The Golden road is recommended when considered appropriate but the requirement to deposit in CPL exists regardless of whether the material is published in an OA journal or not.

There is also a possibility for authors to apply for an exemption.

- *"Exceptions from this policy can be granted in exceptional cases. In such cases there must be prestige-related reasons for publishing a specific scientific work in a journal that does not accept parallel publication. A request for exception must be made in writing directly to the First Vice President."*

A library mission

In the Policy Decision the Library at Chalmers was given the responsibility to provide the services needed to support the policy. The Library Director was asked to write a report with an

analysis, a plan for implementation and assess the resources needed. The analysis distinguishes between two different publishing workflows within the university; in-house publishing and the self-archiving, or parallel publishing, of externally published material. It states that the Library in order to fulfill the OA policy will have to meet up with practical support to both. We will also need to work in close collaboration with other parts of the university to establish support networks and provide new services.

Parallel publishing would cover about 2000 items per year and in order to make them available we depend on the copyright rules and author rights set by the publishing houses. From the Library's point of view we saw an increasing need for legal support in the monitoring and interpretation of copyright contracts and publishing policies. This expertise was not available in the Library.

The copyright issues would be easier to solve for the university's own publications e.g. thesis and reports. But in order to make them openly available on the Web the university would need to move to electronic publishing. A challenge for the Library, it would include cooperation with the University Printing office to form a new production workflow. The report mentions that authors still would need support with producing files, layout, image editing, templates, format conversion, etc. Graphical skills are needed in electronic publishing just as it is for production of printed publications. Nor this expertise was available in the Library.

Some technical development in CPL were also needed, new features like handling of embargo dates, pre-pages etc.

The report estimates an implementation period of 2-3 years during which focus is on information. It is crucial to disseminate knowledge of the policy on campus, get info out on the Web (FAQ, etc.); here collaboration with Communication Department will be important.

The report suggested that the University Legal office, the Communications Department and the Printing office needed to be involved in the new OA services. The Library also needed more staff, the report suggested a new unit dedicated to publishing services at the Library and in October a new "Department for Publication Services and Bibliometrics" was a fact.

Chalmers Publications Library (CPL)

In the early years of 2000 Chalmers library had started a project with the aim to build a publication database that would serve as a portal to Chalmers research on the web and make it more visible. The database was named Chalmers Publication Library (CPL) (http://publications.lib.chalmers.se/cpl/) and in the beginning the focus was mainly on bibliographic metadata. In 2004 CPL attracted interest from the university central administration as they were looking for tools to measure research performance. They had thoughts on changing the way local research funds was allocated and they sought ways of making the relations between input and output more visible. After a period of meetings and reworks done to the CPL system, a President Decision on compulsory registration of all research publications into CPL was taken (President Decision ref. C2004/700)in June 2004.

The following year our geographically closest academic neighbor; Gothenburg university, was on the lookout for a similar system. We offered them the CPL system in exchange for sharing the costs of running and developing the service. We started a cooperation resulting in a jointly developed open source platform named Scigloothat both universities now use for their publication databases CPL and GUP (Gothenburg University Publications). (http://gup.ub.gu.se/gup/).

From year 2006 and onwards Chalmers official publication statistics has been based on the publication data registered in CPL. By then we had a well-established workflow for metadata registration, usually performed by the authors themselves. But the focus was still on just metadata, catalogue records, thoughts of an upload function; full text publishing and Open Access did not come until a few years later. It was possible to add an URL in the CPL

registration forms, and it could lead to a source anywhere; URLs to publishers' sites or local departmental servers. CPL had no full-text archive.

Paving the way

The library was an active part in advocating the OA-policy (Kinger 2010). We arranged seminars on OA and also visited departments to give presentations on the subject. The question of an Open Access policy was raised by library representatives within the local Steering and reference group for electronic Publishing and Archiving (SPA) in November 2007. Though the idea of a policy had been advocated by the Library within our organization during a couple of years already with not much attention SPA showed to be a good forum for pursuing it. The SPA group consisted of representatives from different functions within the university, except from the Library, e.g. from faculty, administrators, the central IT unit, the Board of graduate students, the Printing office and the University Archive. The chairman came from the Office of Planning, a part of Chalmers central administration. SPA saw the need to anchor the proposed decision in order to get a policy that would have the Faculty members' approval before putting it up for decision by Chalmers' president, Therefore a series of anchorage meetings were held during the spring of 2008. The Open Access policy was discussed with among others the Heads of Departments, the Faculty Senate, and the Board of Graduate Studies (FUN).

There were reports saying that the majority of publishers allowed self-archiving. Was this to be counted upon also for the journals where Chalmers' researchers published? In order to further support the anchoring process SPA asked our Bibliometrics division to make a local survey. Based on bibliometric data from 2003-2007 the survey estimated that about 85% of Chalmers journal articles could be self-archived either direct upon publication (78%) or after an embargo period of between 3-24 months (7%). The survey helped to answer an important question during the process of anchoring the policy.

As predicted in the earlier mentioned report, we could soon after the policy was adopted, clearly see a variety of information issues as well as technical issues that needed attention in order to make a transition into an Open Access culture at Chalmers.

When it came to information issues, we could easily recognize a number of concerns from the researchers. These concerns are well documented in previous studies and can be broken down to three main categories. (Pappalardo et al. 2007).

- General Concerns about Open Access itself
- Concerns about copyright
- Concerns about the deposit process

General concerns

Among the general concerns we could first of all see a lack of understanding about what Open Access is and how it can be of any benefit to the researchers themselves. We could also see that there were pure misunderstandings regarding Open Access as well as our policy. Questions like "am I not allowed to publish in traditional journals", "won't open access eliminate peer-review"? Even basic questions like "what am I as a researchers supposed to do?" could be sorted into these general concerns. It also became clear to us that the mere issue of awareness needed attention. Many researchers hadn't even noticed that Chalmers had adopted an Open Access policy.

Copyright

Since Chalmers Open Access policy is primarily focusing on self-archiving, issues regarding copyright is a major concern among the researchers, and they seem to worry a great deal about what they are allowed to do with their published articles, and are afraid of getting into any legal disputes with the publishers. Even though over 90% of the publishers allow self-archiving in one

form or another, and some voices have been raised that both researchers as well as librarians tend to stress this problem much more than would be necessary (Sale 2006), we found it important to take these concerns seriously. We saw it as a highly prioritized issue to provide extensive guidance and support in how to determine whether authors have the right to self-archive their work, and under which circumstances this can be done, but also hands on assistance in practical issues like making pre pages etc.

Another major argument for actually helping the researchers in these issues is that the publishers' self–archiving policies are changing all the time. During the first year with our Open Access policy, three big actors changed their policies regarding self- archiving. We realized that we can't ask of the researchers to keep updated with this ever changing information. Sherpa/RoMEO works as guidance, but it is our experience that the publisher policies in many cases need to be more thoroughly checked in order to get accurate information.

The depositing process

Researchers are concerned about the time and effort required to deposit an article, how much time it will take and that it will be difficult to do. Enter the metadata necessary to describe the deposited article can also in some cases be seen as too time consuming.

Since lack of time is one reason often mentioned by the researchers not to deposit their papers, we started importing bibliographical metadata from Web of Science and Scopus to CPL. Along with this an email is sent to these researchers explaining the Open Access policy and at the same time encouraging them to deposit their papers in the repository. Unfortunately very few seem to have paid any attention to these e-mails and actually depositing their papers.

Even though the policy is asking the researchers to deposit their papers themselves, the library offers to give assistance in this work in order to facilitate the new routine, but also as a way of fastening up the rate of full text papers in our repository. Another argument for doing this work was that many of those institutions that have been successful with their Open Access mandates have offered this in their workflows (Armbruster 2010). As it has turned out in those cases were this help has been offered many of our researchers started to deposit their articles themselves after a while.

The Network

In accordance with the report with a plan for implementation we started a network supposed to work with a number of strategic and pragmatic issues. A first meeting was held in autumn 2010 with representatives from the Communications and Marketing office, responsible for communications and public relations at Chalmers, both internal and external. And there were also representative in form of a legal counsel from the Central Administration office.

With experience from previous information efforts on campus, it was decided that we should focus on departments and research groups that expressed interest in Open Access, rather than those that were still skeptical to the concept. It was also concluded that the best effects of information sessions about Open Access would be reached if these were held together with the departments regular staff meetings. As a first step in this campaign, Information about Open Access was sent to the information officers at each department, asking them to spread the information among their researchers.

With help from the legal counsel we concluded that the policy text needed to be clarified in some parts and therefore decided to start working on a revised version of the policy, to be published during spring 2011.

Applying for exemptions

In accordance with the implementation report we also established a routine for those asking for exemptions, where the authors gives a written notification to the Vice President who then gives the library the mission to investigate the circumstances for the concerned papers. The Library then reports back tothe Vice President for a decision. There are no general exceptions from the policy, and each case is handled individually.

Future directions

Many of the technical improvements of the system have not yet been fully implemented. Functions like automated creation pre pages in the upload process, setting embargo dates etc. Since these functionalities are not yet implemented we have not been able to see the effects of these technical improvements, but with these up and running in the nearby future, the process of depositing will hopefully be made easier.

We are also expecting positive effects of the information efforts made under our first year with the policy, so that misunderstandings are eliminated and that the vast majority of our researchers are familiar with the basic concepts of Open Access and the policy at Chalmers. With barriers of this kind removed the depositing process will most certainly be seen with other eyes.

Since increased visibility raises the profiles of both the author and the institution, we think it would be very useful to develop "value added services", such as presenting authors with details about the number of times their article has been accessed and cited, Integrate the information with researcher web-pages etc. (Pinfieldet al. 2002)

In an analysis of the process for Open Access at Queensland University of Technology – which is an internationally recognized successful Open Access model – Armbruster (2010) lists the following factors as crucial:

1. Regular policy review
2. Well-funded implementation
3. Improved repository service
4. Demonstration of benefits to authors

From our experience we recognize these factors as important and we are currently in the phase where numbers 3 & 4 arein focus. We are also beginning to learn the lesson that Armbruster summarizes as: "Implementing open access is a tough job". But at the same time, as we hope to have demonstrated in this paper, a very instructive job where the library gets many valuable experiences from discussions with all stakeholders.

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