

A national Current Research Information System for Sweden

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Summary

Sweden ScienceNet is a national platform continuously collecting, structuring and providing access to key information on research projects in Sweden. It is based on the desire of the ten member universities in Sweden ScienceNet to increase the visibility of their research activities and to facilitate future collaborations and enable strategic questions about the research funding to be answered. Sweden ScienceNet has from 2012 been commissioned by the Government to the Swedish Research Council to administer and further develop in collaboration with the universities. This paper outlines the reasons why Sweden ScienceNet has succeeded where previous national initiatives in Sweden have failed, but also brings up for discussion the challenges Sweden ScienceNet is facing to ensure that it stays sustainable in the future.

1 Introduction

Information about research is essential in order to make it useful for society, and access to information fosters innovation and stimulates collaboration. In Sweden, dissemination of the research results and outreach activities to inform and engage with society are mandatory tasks for the universities in addition to the traditional tasks of education and research.

Research in Sweden is mainly carried out in the large universities, which have staff specialized in disseminating information about the research carried out within their own institution. Previous national initiatives to collect and present information on current research in Sweden as a whole have had difficulties. These attempts relied heavily on the readiness of researchers and university staff to provide information in a more or less manual way. Leading to more administration, and varying levels of information quality, none of the previous initiatives have survived. Sweden ScienceNet was hence created with the expressed ambition to reuse existing information through as automatic means as possible.

Around eight years after the initial foundation was laid by Karolinska Institutet, Stockholm University and the Royal Institute of Technology (KTH), in collaboration with Avedas AG as development partner, and with funding from the Swedish Agency of Innovation Systems (VINNOVA) the Swedish Government has recently commissioned the Swedish Research Council to administer and further develop Sweden ScienceNet as a national platform in cooperation with the universities. This organizational move gives Sweden ScienceNet an official “mandate”, and will facilitate many of the tasks. All major public funding agencies already provide data to Sweden ScienceNet, and the system has started to welcome also private foundations to cover as much of the research activities in Sweden as possible.



2 Description of Sweden ScienceNet

To a large extent research in Swedish universities is funded by external agencies such as research councils and private foundations. For the management of their support programmes these agencies run different systems, which all end up with information about research projects that will receive financial support. The basic principle behind Sweden ScienceNet is to tap information from these different systems and to structure and present it in a coherent way. The information thus being reused comes from grant applications, which the researchers have sent to the funding agencies and from the funding decisions which these agencies have made. Presently, information from the funding agencies is provided to Sweden ScienceNet by means of file transfer, and one of the technical challenges is to move towards a more automatic and cost-efficient system where data is transferred directly into Sweden ScienceNet.

As a result Sweden ScienceNet has been established as a national online resource providing access to up-to-date information from the main funding agencies. This Current Research Information System (CRIS) can be accessed over the national portal www.sciencenet.se and can be used by managers and policy makers at universities, in industry and at the funding agencies as well as by individual researchers.

Funding organizations, both governmental agencies and private foundations, provide information on their project grants to Sweden ScienceNet. Only grants from 2008 and later are included. The system today includes nearly 7 000 research projects and 6 000 researchers.

The following lists the information preferably received from funding bodies on their research grants:

1. Programme of funding organization
2. Project number
3. Project title
4. Abstract / Summary
5. Classification according to OECD's Fields of Science
6. Date of project start
7. Date of project end
8. Funding per year
9. Project leader / Coordinator
10. Host institution for project leader
11. Collaborators in the project
12. Host institutions for collaborators

The data in Sweden ScienceNet is categorized in accordance with the Swedish standard for classification of research topics.¹ This standard was put forward in 2011 by the Swedish National Agency for Higher Education and Statistics Sweden², and will be used for reporting research and education at research level starting in 2012.

¹ <http://bit.ly/hsv-class> (pdf)

² Statistics Sweden is a government agency that produces statistics.



The standard is an extension of OECD's Field of Science and Technology (FOS) classification in the Frascati Manual.³ A third level has been added in Sweden for reporting national statistics. This third level consists of around 250 research areas.

3 Fields of application

For the participating universities there was an early identified need to make information about their research activities more easily available. It was also recognized that the system should be able to give answers to key questions on these activities such as:

- What projects are ongoing in different areas?
- Which areas receive most funding, and which organizations are most successful?
- Which researchers are supported by which funding agencies?
- Which collaborations exist between researchers and organizations?

The information about research projects in Sweden ScienceNet is presented in a structured way with possibilities for analysis and preparation of customized reports. Reports can be extracted concerning researchers in scientific domains, thematic strengths of institutions and research collaborations.

Universities have also begun to supplement their own research information systems with detailed project data from Sweden ScienceNet. The data should be able to interact with local systems for HR, finance and publication records, which will increase its usefulness.

4 Funding bodies

With existing data from the four main governmental research funding agencies and a few private foundations Sweden ScienceNet already covers about half of the external funding at Swedish universities. Planned additions of funding organizations include research supporting governmental sector agencies in areas such as energy, environment and aid (international development). Discussions are also underway with a number of additional private foundations, some of which are quite large.

The European Commission is the second-most important external funding agency for research in Sweden, after the Swedish Research Council, and in order to give the full picture of current research in Sweden, it is therefore highly desirable to include data about EU-funded projects with Swedish participation in Sweden ScienceNet. Appreciating the efforts of the European Commission regarding public sector information, also in the area of research, we are asking the Commission to provide relevant data to Sweden ScienceNet.

By the end of this year we expect the system to cover at least 80 % of the external funding at the universities.

³ <http://www.oecd.org/dataoecd/36/44/38235147.pdf>



5 Organization

Sweden ScienceNet has up until recently been owned and governed by ten leading Swedish universities:

- Chalmers University of Technology
- Karolinska Institutet
- Linköping University
- Lund University
- KTH - Royal Institute of Technology
- Stockholm University
- Swedish University of Agricultural Science
- Umeå University
- University of Gothenburg
- Uppsala University

For the management of the system there has been a steering group composed of representatives of the universities and with the president of the Royal Swedish Academy of Engineering as chairman.

A more technical group has also been set up with representatives from the ten universities who locally are responsible for the operation of the system and who coordinate activities internally and guarantee synergies with other activities at the universities. This group also helps analyse and prioritize further development of the platform.

Sweden ScienceNet have entrusted the technical operation and support of the system to Avedas, a software and consultancy company, which has been the development partner since the project started.

In February 2012 the Government commissioned the Swedish Research Council to administer and further develop this new national platform in cooperation with the universities. The transfer of ownership to the Swedish Research Council has just started and is expected to take most of 2012.

6 The future of Sweden ScienceNet

As Sweden ScienceNet has met its main challenges and reached a point of becoming an established national platform for research projects in Sweden, the expectations increase on Sweden ScienceNet to leverage the results by delivering increased value and further benefits. Besides a continuous extension of the number of funding agencies providing data, making the data model of Sweden ScienceNet CERIF-compatible is a prioritized next step in the development of the platform.

The main technical challenges are found in the data handling. Using data for analysis and reporting puts very high demands on data quality. Mapping of data with different structures from different funders is therefore needed: unique Person IDs, Organization IDs are available in Sweden and hence in many systems. Due to precautions to respect data protection laws many funders have not



provided the Person ID and a manual mapping has been required (time consuming, expensive). The move of ownership to the Swedish Research Council is expected to facilitate Sweden ScienceNet getting Person IDs from more funders.

To address these issues and ensure a much more cost-efficient long-term solution, a discussion has been initiated with some of the funders to deliver data in CERIF-XML and also provide more data to facilitate the automatic and unique identification of people.

Other data is simply missing: the approach is to get the funders engaged and work with their own systems to complete this information. Sweden ScienceNet could also be opened up for researchers to amend their own data directly in the system.

Further development may include connecting Sweden ScienceNet to SwePub, a national database containing references to research publications registered in approximately thirty of the Swedish university publication databases. Connecting Sweden ScienceNet and SwePub would create a system providing information not only about research activities but also on the results in terms of scientific publications.

Another issue to consider is what changes Sweden ScienceNet is to expect when moving from a university driven bottom-up approach to a government agency top-down, and how to handle these changes.

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