

## Five Years of Policy-based Bibliometrics in Flanders: An Overview and a Reflection

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### Introduction

In 2000, the Flemish government decided to create a unique and dedicated research center to support its science and innovation policy. The research center, named "Steunpunt O&O Statistieken" or "SOOS", has to develop quantitative indicators that can be used by policy makers to support the development of appropriate regional science and innovation policy for Flanders. SOOS was created in January 2002 after open calls for proposals that were held in May 2001. After a peer-based evaluation and selection procedure, SOOS was established to support Flemish public science and technology policy-makers with recurrently available and reliable data, constructed indicators and exploratory studies on three "key" areas: (1) bibliometric research, (2) technometric research, and (3) innovation research. Twelve researchers and support staff members are currently employed at SOOS. In each of the key knowledge areas, SOOS has to develop a recurrent and accessible database with relevant data and indicators to support Flemish R&D policy. In addition, it is expected that SOOS will develop an original research program in each of the three knowledge domains. The year 2002 was the start-up year for those activities. The structural data sources on which SOOS relies for the execution of these tasks are:

1. Annual plain-text backups of the Web-of-Science that are available to SOOS via a license agreement with ISI (encompassing SCIE, SSCI and A&HCI as well as the ISI Proceedings databases);
2. The USPTO, EPO (including the REFI-files) and PCT patent data licensed in from the various patent offices, the Derwent Innovation Index (DII) data licensed in from ISI, and;
3. The innovation data as collected and analyzed by SOOS in the context of the CIS-Eurostat (i.e. the Community Innovation Survey) and the OECD R&D surveys.

### Organisation

The activities just described have initially been contracted out to SOOS for the period 2002-2006. In this process and for this period, a Steering Group in which the relevant actors of the Flemish public R&D system are represented monitors SOOS. These actors are (1) the research coordinators of the universities, (2) IWT, (3) representatives of the Ministers

responsible for science, technology and innovation policy, and (4) the Flemish Ministry of Science and Innovation. SOOS itself is organized in three units, each of them headed by a senior researcher and covering one of the three key areas mentioned earlier. In the context of this poster, we further focus on the activities developed by SOOS over the period 2001 – 2005.

### Activity Overview

The activities of SOOS can be classified into four categories:

1. Developing an appropriate IT-infrastructure to support S&T indicator development;
2. Providing the Flemish government with appropriate S&T indicators on which to base its science and technology policy resource allocation decisions;
3. Executing specific studies on science and technology domains or science policy relevant topics for the Flemish government;
4. Doing original research in the field of S&T studies.

So far these activities have led to the development of complex relational information architectures based on a combination of bibliometric, patent and survey data on S&T activities. The backbone of this architecture is shown in Figure 1. The data architecture for the bibliometric master files, by way of illustration, is represented in Figure 2.

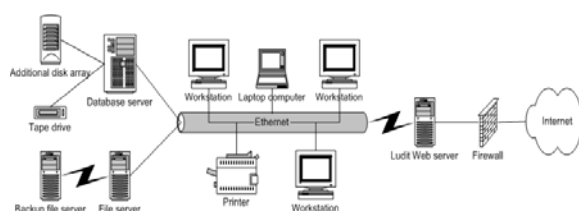


Figure1 The backbone of the SooS relational information architecture

Based on these data structures, SOOS has been involved in the development of important funding allocation instruments like the BOF-key or more recently the IOF-key. The BOF-key is a distribution key that determines the annual allocation of 100 million EUR in fundamental research money amongst the six Flemish universities. Part of the key is based on publication and citation data as derived from WoS-SCIE by SOOS (see Debackere &

Glänzel, 2004). The IOF-key is a distribution key to determine the annual allocation of 12 million EUR (to be augmented in the year 2006) amongst the six Flemish universities in order to support applied research. The IOF-key is partially based on patent statistics derived from the USPTO, EPO and PCT databases. SOOS has been instrumental both in the development of and the data delivery for those distribution instruments.

Besides indicator development, SOOS also participates in various studies that should support the Flemish government in its science and innovation policy. Three domain studies (biotechnology, nanotechnology, and stem cells) have been conducted, mapping the position of Flemish research groups internationally. A common template and set of indicators, based on publication and patent data, was developed to conduct these studies. In addition, studies were conducted on understanding and measuring the input-additionality of public R&D subsidies. SOOS further surveys and develops the BERD and GERD indicators for the Flemish government. Finally, the complete set of indicators developed by SOOS is regularly summarized in a biannual S&T indicator book.

Finally, SOOS is involved in original research on various topics in the areas of science and innovation policy. This research is of a theoretical as well as an empirical nature.

The complete overview of all activities is to be found on [www.steunpuntoos.be](http://www.steunpuntoos.be).

## Reflection

The creation and the operation of SOOS has created a consistent and exhaustive approach to underpin Flemish science and innovation policy with scientific insights, reliable indicators and timely information. As a consequence, the decision of the Flemish government to establish a center like SOOS and to base major policy instruments on the data and the studies developed by SOOS has been closely monitored by various governments across Europe. Bundling policy research and policy indicator development in one center indeed proves to generate quite some synergistic effects, e.g. the ability to combine bibliometric, patent and survey data into a complex relational web enabling a wide variety of studies and data analyses.

At the same time, though, possible side effects need to be monitored closely and carefully. For example, with respect to both the BOF- and the IOF-key, one might hypothesize that the allocation methods now developed might in the long run be criticized. This will happen if it turns out that it (1) also starts influencing intra-university research allocation decisions and, as a consequence (2) introduces adverse research behaviors at the universities involved.

## References

Debackere, K. & W. Glänzel (2004). 'Using a bibliometric approach to support research policy making: The case of the Flemish BOF-key,' *Scientometrics*, 59 (2), 253-276

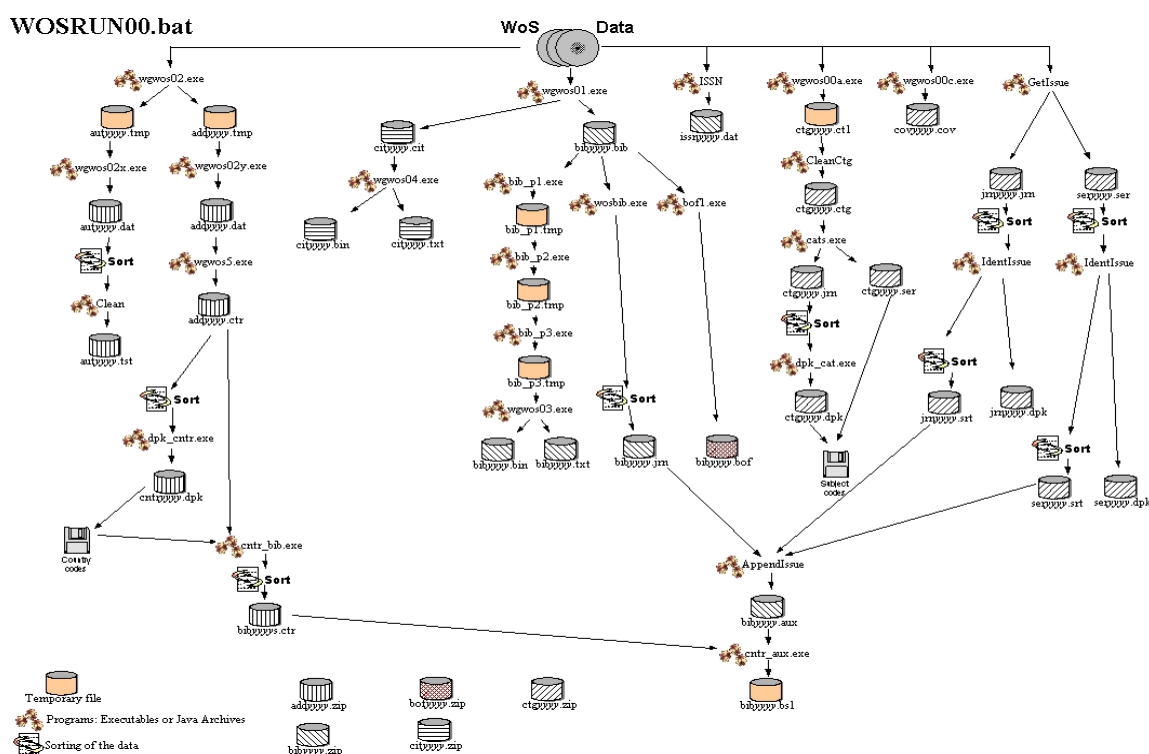


Figure 2: The data architecture for the bibliometric master files