

EDITORIAL

The SciX project started exactly one year ago and is now at its half. We released a dozen documents, four newsletters and one open source program. At this point we are concluding the analysis and software design work and are moving into developing and integrating demonstrators and pilots. Deliverables on paper will soon be complemented with on-line services and open source software. The business process reengineering work is departing from the analysis of the as-is processes and is starting to examine the to-be processes and the barriers to change.

In this newsletter we are presenting what we call the SciX reference architecture for digital libraries. While important work has been done around Dublin Core and Open Archives Initiatives, the standard schema and exchange format for digital content are just the beginning to emerge. As our requirements analysis has shown, there are several services that the users expect to be built on top of a digital archive. It is only these services that really make a difference between traditional publication and access models and the evolving new ones. The reference architecture is not just a blueprint on paper. In the recent months first prototypes have been developed that are available on line, for free, and that are already providing a valuable service to the community. Their popularity is ensuring that SciX will live long after the project is finished.

SciX technology is spreading beyond the use in the SciX consortium. Several communities such as the ELPUB conference series, IAPS association, academics such as philosophers etc. are considering or are already using the SciX platform to implement their digital archives. This is also reflected in the SciX website. The www.scix.net is becoming less and less a site about an European Research project and more like a hub to access several digital libraries. In the near future it will also become a site where digital libraries and the related services could be set up, rented and in this way really broadly democratised.

SCIX REFERENCE ARCHITECTURE

The electronic publishing area is extremely fast moving, developing at a significant pace, particularly in the areas of inter-working. Therefore, a modular architecture is proposed for the SciX sys-

tem, allowing functions to be included, left out, added, or replaced relatively easily in any particular implementation. A widely accepted principle is the separation of data storage from service provision.

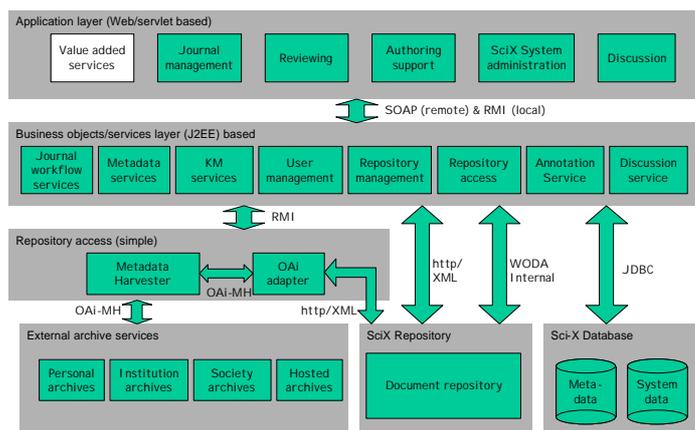
The SciX architecture is identifying a number of business objects such as article, user, annotation, review, recommendation, discussion, rating, reading etc. that can provide various kinds of applications on top of a digital library. The objects are being implemented as Web services that can be fairly self-sufficient, however, combined they can provide applications such as a self-archive, institutional archive, topic archive, conference and journal. Among others, the differences among these applications are different levels of quality control.

Given the pace of change in electronic publishing, with developments taking place through a range of initiatives, including the OAI, SPARC, and various development efforts such as eprints.org, DSpace (MIT), and CDSWare (CERN Document Server). It is important to be able to interact with these and similar or related systems in the future as this will be an important factor in the success of any online journal hosted on a SciX server. The OAI-PMH defines the interface for the metadata exchange between an archive and a service provider. While SciX will provide its own basic digital library repository its additional services (reviewing, annotating, rating etc.) should be able to interact with any open third party digital library tool.

Additional "knowledge management" (KM) services may be provided on top of the repository. This may include such things as comparison of articles, searching for similar articles, summarisation, and linking between articles. These services may be provided as additional modules, separate from the repository. It will be important that such services are able to access metadata and articles from other repositories in addition to (or instead of) a local one if they are adequately to support activities such as authoring.

Whilst services may often be accessed through a simple, web-based, thin-client interface, it is important to allow for access by other means, including more closely integrated approaches. For example, authoring tools will need to integrate quite closely with KM services and metadata ser-

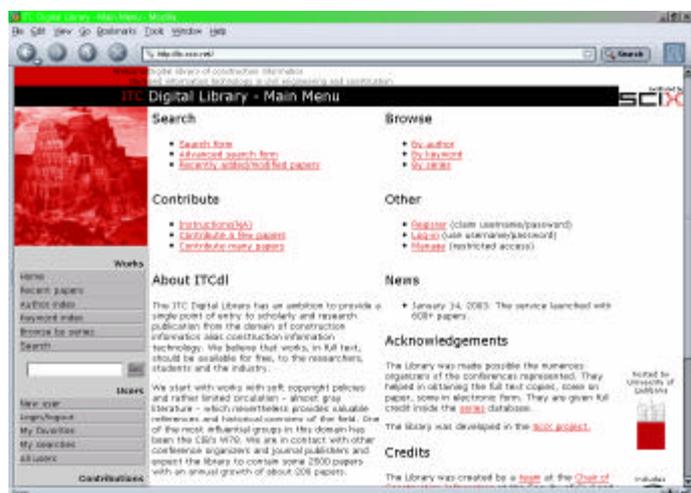
services in order to provide the kinds of benefits identified in the requirements analysis.



A modular architecture is proposed for the SciX system, allowing objects to be included, left out, added, or replaced relatively easily in any particular implementation or application. This is made possible because the object-oriented schema is not implemented in a monolithic relational database application but rather by a number of services; the collaboration among them can be established at runtime.

The idea of separating the various services while keeping them interoperable is shown in the figure above.

TOWARDS THE FIRST SCIX PILOT



Many members of the SciX consortium have been deeply involved with the CIB's Working Commission 78 "Information Technology in Construction". CIB is the International Council for Building Research and Information and perhaps the most important association world-wide in the field of engineering and construction. SciX technology is used to implement the digital library of the working commission 78. Over the last 15 years it published about 800 papers that would have remained a well-kept secret of a few that got the

proceedings. Now these papers are available for free on the Internet.

SCIX ON THE ROAD

Elpub 2002 (Karlovy Vary, Czech Republic, 6-8 November 2002). Prof Bo-Christer Björk and Prof. Bob Martens attended the conference and gave a presentation of the paper "Re-engineering the scientific publishing process for the Internetworked global academic community". Several contacts with the Electronic Publishing community have been established which are resulting in a possible use of the SciX platform by the ELPUB community.

SciX Review took place in Luxembourg, 10-11 November 2002. Several helpful comments were made by the reviewers that have subsequently been addressed by SciX partners.

Open access to scientific and technical information (Paris 23-24 January 2003) Turid Hedlund attended the seminar. The program consisted of 27 invited presentations, all experts in the field of publishing, libraries or scientific research or research projects. The Open Access point of view was highly stressed as an alternative in scientific publication. Several important contacts were made.

SiGraDi 2002 (Caracas, Venezuela, 27.-29.November 2002). Prof. Bob Martens attended the conference where he presented the SciX project.

In **Salford, UK** (19-22 November, 2002) some of partners (Ziga Turk, Grahame Cooper, Brian Clifton and Gudni Gudnason) met to discuss SciX architecture and pilots and presented SciX at the **eSMART conference**.

Prof. Bo-Christer Björk prepared a **Workshop on e-publishing** (Helsinki, 30-31 January 2003) where SciX project and its possibility were presented. SHH and LJU took part, in addition to a number of relevant players mainly from Scandinavia as well as the EU Figaro project.

Grahame Cooper (USAL) and Tomo Cerovsek (FGGI) attended a concentration meeting organised by Unit of the DG Information Society's Directorate "**Interfaces, Knowledge and Content Technologies, Applications, Information Market**" in Luxembourg, January 28, 2002.

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