ABSTRACT:
Institutional repositories are being constructed today to address the needs of scholarly communication in a digital environment [1]. The success of such institutional infrastructures as knowledge collections depends in part on offering low barriers for participation and on supporting heterogeneous knowledge inputs and outputs. The San Diego Supercomputer Center (SDSC) in partnership with CERN (European Center for Nuclear Research), the Scripps Institution of Oceanography (SIO), and the University of California, San Diego (UCSD) Science & Engineering Library, has modified CERN’s CDSware software to create such a low barrier repository [2].

Given the social aspects of documents in particular and artifacts in general, building successful institutional repositories requires exploring how to create new infrastructures that place documents, people, and organizations into unified and expressive relationships [3]. CDSware as implemented at SDSC adapts an OAI-compliant document and citation management system to more fully express the relationships between documents, people, and the organizational resources to which both are related [4]. By starting with a document-oriented view and making the social relations of documents explicit (to individuals, research groups, administrative reports and organizational metrics, sources of funding and research instruments), this project seeks to expand the knowledge management role of a document repository [5]. This work also recognizes the importance of informal communications in interdisciplinary research, and suggests that personal document collections (repositories) provide a mechanism to extend informal communications if collection-making tools are available [6]. We seek to create a process of learning and informing involving participants by providing mechanisms that enable the work of individuals and organizations. The project name FLOW is a purposeful metaphor calling to mind the uncounted rivulets shaped by the local landscape that join to form a river of information contributing to heterogeneous pools of knowledge.

Technical hurdles to realizing this project include requirements for ongoing resource support, open design, and implementation strategies. Social barriers include the need to have a critical mass of participation; acceptance for the system is dependent on activation energy since community individuals must be motivated to take time to participate in the repository. Conceptual difficulties involve articulating associations between individuals, materials and organizations in order to capture the complex interdependencies. Our design approach is to start with a single research program within the SDSC - with an eye to federation, both across the institution via closely-managed institutional data tables - and across a looser network of affiliated research partners. For coordination at the institution level (SDSC) an ORACLE-based management data pool was linked to CDSware. To share this with associates a second tier was implemented with MySQL, used by the CERN distribution of CDSware.

This poster and associated demonstration of the SDSC prototype of CDSware is a work in progress, with the demonstration and technical description of a modified package of CDSware’s open source software for managing an institutional repository of references and documents. The project goal is to demonstrate that short-term/local approaches are not only compatible with long-term federation strategies but are also critical to initiating information flow, contributing to knowledge diversity, and ensuring reflexivity in the design and development processes.

REFERENCES: