

Response to “Scholarly Information in a Digital Age”

Introduction

The consultation paper is part of the aims of the Information Futures Commission to:

1. Understand how we create, use and communicate information,
2. Understand how to make scholarly output available and usable, and
3. Imagine a preferred future state w.r.t. collecting/connecting to information; required technologies, systems and infrastructure; preferred physical spaces; build capacity of staff and students to find/appraise, create, share/present, use and manage scholarly information in the digital environment.

The consultation paper describes 4 dimensions to scholarly information:

1. Published information and collections used by scholars
2. Materials created for T&L
3. Information created in the course of research
4. Research outputs

The paper described the changing environment from analog to digital, from paper to electronic information; analysed the situation in the University of Melbourne, especially the LMS and search tools, with the blurring of the boundaries between research, teaching and knowledge exchange; and posed some strategic questions/options and challenges to current processes to collect, create, synthesise, manage and distribute/disseminate scholarly information within the turbulence of the digital age, net generation and associated disruptive technologies. It emphasized the benefits of eResearch to enable global and cross-disciplinary research and teaching. The Open Source and Creative Commons licenses and concepts were also sympathetically discussed.

The options are mostly well addressed, and this response will only address what I consider are the gaps and limitations in trying to scan the horizon through the haze of the information explosion. Considering the evidence put forward in the consultation paper and the broader informatics literature, the logical objective of this exercise should be to understand how to personalise the information/knowledge transferred to promote effective teaching, research and knowledge exchange and transfer and a high quality experience for the actors in the knowledge exchange.

Response

This response is additional to and complements the response from the Faculty of Medicine, Dentistry and Health Sciences developed and coordinated by Prof Peter Harris, Associate Dean (Information).

1. Specific privacy and confidentiality needs in education & health

The discussion on information created in the course of research does not adequately address the researchers' and research participants' need for privacy and confidentiality generally and for the specific requirements of linkage of collaborative datasets and other information, and the specific requirements of health research information. Health and biomedical researchers have very specific requirements for secure and confidential linkage between:

- biomedical (genomic, proteomic, metabolomic, etc) and clinical (phenotypic and social) research data, and
- clinical and community-based research data.

This has implication for the individuals and their families, at least 1 or more generations on either side of the proband. The boundaries between the roles of the academic, librarian, student and technologist in clinical research are blurring like with other disciplines and professions BUT the implications w.r.t. privacy and confidentiality are more acute and wide ranging e.g. with genetic/genomic information.

More generally, and beyond the confines of health and medical research, there are special requirements for the information flows between the student and the teacher, a situation analogous to that between the clinician and patient. In the case of research, the participant in the clinical or educational research is a key member of this triad. The management and governance of the information must be secure and flexible and consider ethical, legal and social issues.

This requirement for security and confidentiality can be addressed by sociotechnical solutions e.g. removing or encrypting patient/student and clinician/teacher identifiers in conjunction with clear and transparent standard operating procedures. There are technologies and methodologies within the University to address this fundamental issue (www.conduit.unimelb.edu.au).

2. The need to personalize the scholarly information shared

The information needs and perspectives of the researcher, teacher, student and community (lay) person vary. This will influence how the information is to be packaged and presented for maximum efficacy in teaching and knowledge transfer and exchange. While personal styles vary according to individuals and disciplines, the personalized approach is a key requirement of students.

Our students, the “*net generation*”, are also the “*me generation*”. As *digital natives* they are highly competent with digital technologies and the personalisation of their activities and presence in the ether e.g. personal blogs and publishing to disseminate information and personal portals to access information. Community members or industry collaborators are similarly just as, if not more, digitally savvy than many of us who work in the university. The common thread amongst learners is that information exchange and knowledge transfer is more effective when the information and delivery methods are personalized.

It is technologically straightforward to apply the concepts and techniques of interactive and personalized decision support systems to personalize the information disseminated to those who access and search the University of Melbourne repositories of scholarly information. The management and governance of the information repositories must be flexible, transparent and explicit. The boundaries between the roles of the academic, librarian, student and technologist are blurring BUT the implications w.r.t. privacy and confidentiality must be managed to promote a quality teaching and learning experience and minimize risks to all the actors involved in the knowledge exchange. Devolved approaches are okay as long as there are methodological and database standards to allow linkage, interoperability and sharing of information.

3. Training and education in informatics

Training and education in informatics is important to understand the technical, ethical, legal and social dimensions of the creation, collection, search, appraisal, sharing and use of scholarly information in the digital environment. Health information has the added tension between the requirements of and implications for the individual and the community.

It is important for graduates of the University of Melbourne to have a functional understanding of privacy and other legislations that influence scholarly activities, research, teaching and knowledge transfer. It is also important to develop informatics competencies in the use of the technologies in scholarly activities within the technology-enabled knowledge transfer environment.

The Melbourne Model general undergraduate education must include informatics training and education so that our graduates will have competencies to promote and support lifelong and self-directed learning. These competencies are fundamental in subsequent postgraduate professional courses and research training, as well as continuing and professional development and education. Similarly, for knowledge transfer to be effective, we need to ensure these informatics competencies are taught to members of the community.

In summary, the technology-enabled knowledge exchange environment and system envisaged by the Information Futures Commission must:

- be secure and confidential to encourage uninhibited teaching and learning activities, discourse and assessment;
- have the capacity and capability to personalize the information and knowledge sought by learners, teachers and researchers; and
- have a sound informatics education and training program, underpinned by a high quality rigorous informatics and information science research and development program that spans (and integrates) the biological, physical, psychological and social disciplines.

An overarching strategy to achieving a technology-enabled knowledge sharing and exchange culture may be a University of Melbourne Centre for Informatics, with input from a number of disciplines and professions.

Submitted by

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