

e-Research Strategy

Mike Sargent 1,2

1 M.A.Sargent & Associates

2 Dept Of Education, Science And Training

Abstract:

The research environments emerging from the increasing use of distributed high-performance computing resources, data resources, scientific instruments, on-line services and communications technologies are enabling researchers to perform their research independent of time and geographical location, and permits new forms of research and research collaborations..

A strategic framework for facilitating effective use of these capabilities includes the following key elements:

- " Fostering engagement and consensus building;
- " Supporting research, development and deployment of ICT solutions for e-Research;
- " Developing frameworks for skills acquisition;
- " Establishing a national framework for access, authentication and authorisation;
- " Establishing strategies for data management and accessible databases

While Australia has a number of world-class leaders in some of these technologies, there is a system-wide lack of skills to support the rapid take up of e-Research capabilities. The skills groups that need to be strengthened, include:

- " Practical skills for researchers who wish to implement e-Research applications;
- " Skilled professionals who can operate across research domains to assist researchers to implement e-Research applications; and
- " Experts in ICT and information management who are capable of undertaking research and development of new e-Research platforms and applications.

A key enabler for e-Research in Australia is to give researchers seamless access to resources, including each other. The resources are distributed in various areas of Australia and overseas. These resources include digital data repositories, scientific facilities, instruments and sensors, computational facilities, and high-speed telecommunications networks.

The key facilitators for this are adequate 'e-Research fabric' (the physical resources that link, or are linked to enable, e-Research activities), middleware. (the computer software that links the ICT resources and users), and access to data, including. data collection and generation; data storage and the physical management of stored data; the evolution of standards to enable data to be used and interpreted; and access regimes to permit data to be accessible.