



**e-Research
in
Australia**

e-Research

The e-Research value proposition:

- ▶ Outstanding research is a driver of security & prosperity
- ▶ Outstanding research is often based on international collaborations in a setting supported by first-rate
 - Communications technologies
 - Computing capability
 - Information & database resources
- ▶ These collaborations & infrastructure are the domain of e-Research
- ▶ The ARC thus supports e-Research as a major component of its mission to support excellent research and to deliver benefits to the community

Features of e-Research

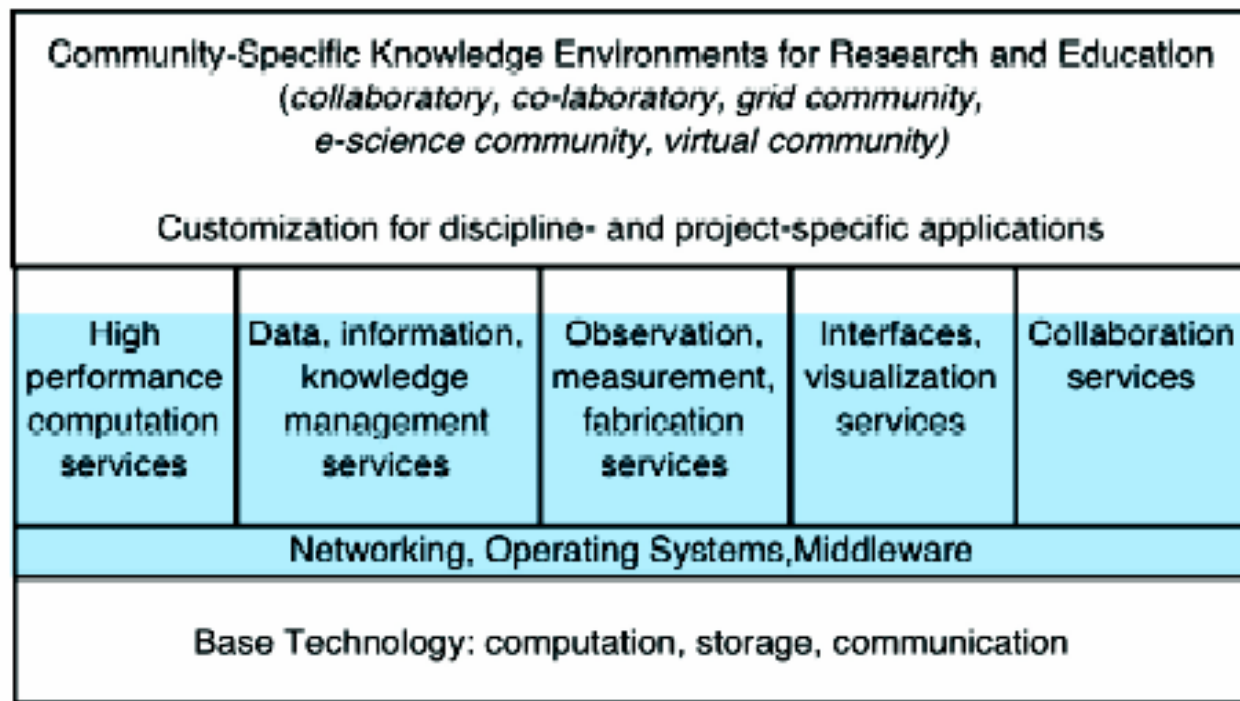
▶ Wide penetration and fast growth

- <http://www.escience-grid.org.uk/>
- <http://www.escience-grid.org.uk/docs/links.htm>
- <http://www.cise.nsf.gov/evnt/reports/toc.htm>
- National Science Board report “Science & Engineering Infrastructure for the 21st Century”

THE NATION'S IT CAPABILITY HAS ACTED LIKE ADRENALINE TO ALL OF S&T

Features of e-Research

- ▶ Optimally developed in hierarchical and layered ways: services and resources



 = cyberinfrastructure: hardware, software, services, personnel, organizations

Features of e-Research

- ▶ Peak facilities
- ▶ Collaborative: “big science”, Access grid
- ▶ Large and growing data-sets
 - Bio-informatics
 - Social science (census, medical...)

Features of e-Research

- ▶ Value-adding from social & behavioural sciences (adoption models)
- ▶ Academia-business links are unusually strong
- ▶ Under-investment in people relative to hardware & software
- ▶ High entry barrier to new resources (e.g. parallel computing)

Features of e-Research

- ▶ Grid technologies promise to provide valuable research & resource management scaffolds
- ▶ New ICT resources might help foster creativity (virtual laboratories)
- ▶ Elements of anarchy, but standards, continuity, consistency and sustainability of infrastructure are critical.

e-Research in Australia

DEEP INFRASTRUCTURE

- AARNet, AREN, research networks
- APAC & State Partners
- Information Infrastructure
 - Bio-informatics
 - Geo-informatics
 - Spatial data
 - Scientific data
 - Social Science data sets
 - Scholarly publication & archival literature

e-Research in Australia

TOOLS & RESOURCES

- MNRF & other programs
- ARC LIEF program
 - Past funding for high performance computing
 - Visualisation & other infrastructure
 - Vislab, collaboration environments, AccessGrid
 - Australian Virtual Observatory
 - Humanities & Social Sciences
 - Digitisation projects
 - Portals & scholarly websites
 - e-Research laboratories

e-Research in Australia

DISCIPLINE SETTINGS

- ▶ Significant D-P & L-P funding --
- ▶ Machine-readable social research datasets must be deposited at Australian Consortium for Social and Political Research Inc. (ACSPRI) or other custodial site
- ▶ General requirement
 - samples collected during, or resulting from the conduct of their research;
 - make arrangements acceptable to the ARC for lodgement with an appropriate museum or archive in Australia of data or specimens or samples collected during, or resulting from their research; and
 - include details of the lodgement or reasons for non-lodgement in the Final Report

e-Research in Australia

ARC Research networks

- Up to \$500,000 for up to 5 years
- Excellent opportunity to build e-Research infrastructure to support outstanding research – particularly to address the need for professional support

Prospects

e-Research is an international agenda. Australia can benefit from this, but should be a giver as well as a taker.

Australia has been somewhat slow to move, but is building on a sound base of deep infrastructure.

There is great fluidity & diversity in need and product. Wise and effective development of e-Research will be a challenge for funding bodies and practitioners alike.