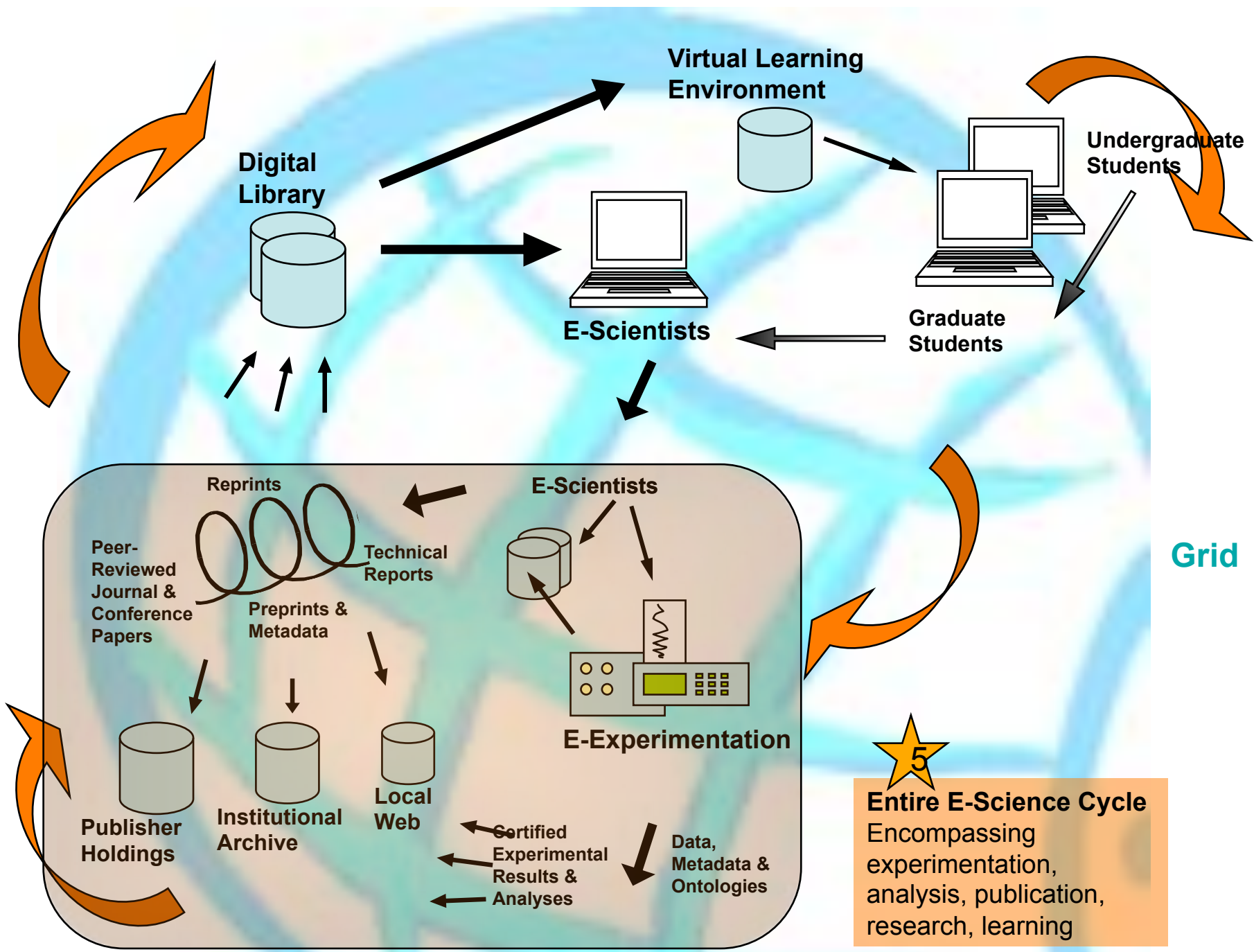




Supporting the e- Research lifecycle from acquisition through to annotation: the DART/ ARCHER experience

Dr Andrew Treloar
DART Project Architect
ARCHER Director and Chief Architect
ARROW Technical Architect

Presentation to eResearch Australasia 2007



Source: Adapted from Liz Lyons, eBank UK Presentation



DART

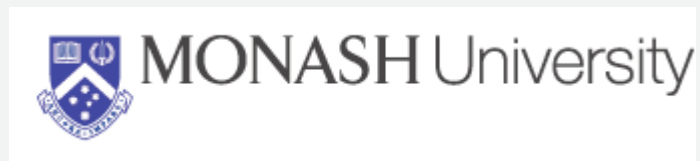
- DART is/was a proof-of-concept project funded by the Department of Education, Science and Training (DEST) to support collaborative research in Australia
- The funding has been provided through the Systemic Infrastructure Initiative as part of the Commonwealth Government's Backing Australia's Ability - An Innovation Action Plan for the Future
- DART stands for
 - Dataset
 - Acquisition/Accessibility/Annotation
 - e-Research
 - Technologies



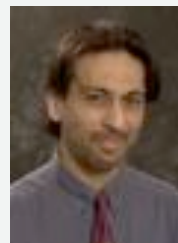
DART logistics

- 3 partners:
 - Monash University (lead) in Melbourne
 - University of Queensland in Brisbane
 - James Cook University in Townsville
- 5 technical areas of focus within the DART work packages (WPs)
- 18 month project, finishing in June 2007
- 28 Separate DART work packages
- 40+ project team members!!

DART chief investigators



Andrew Treloar



Asad Khan



David Abramson



Ann Monotti



Jane Hunter



Xiaofang Zhou

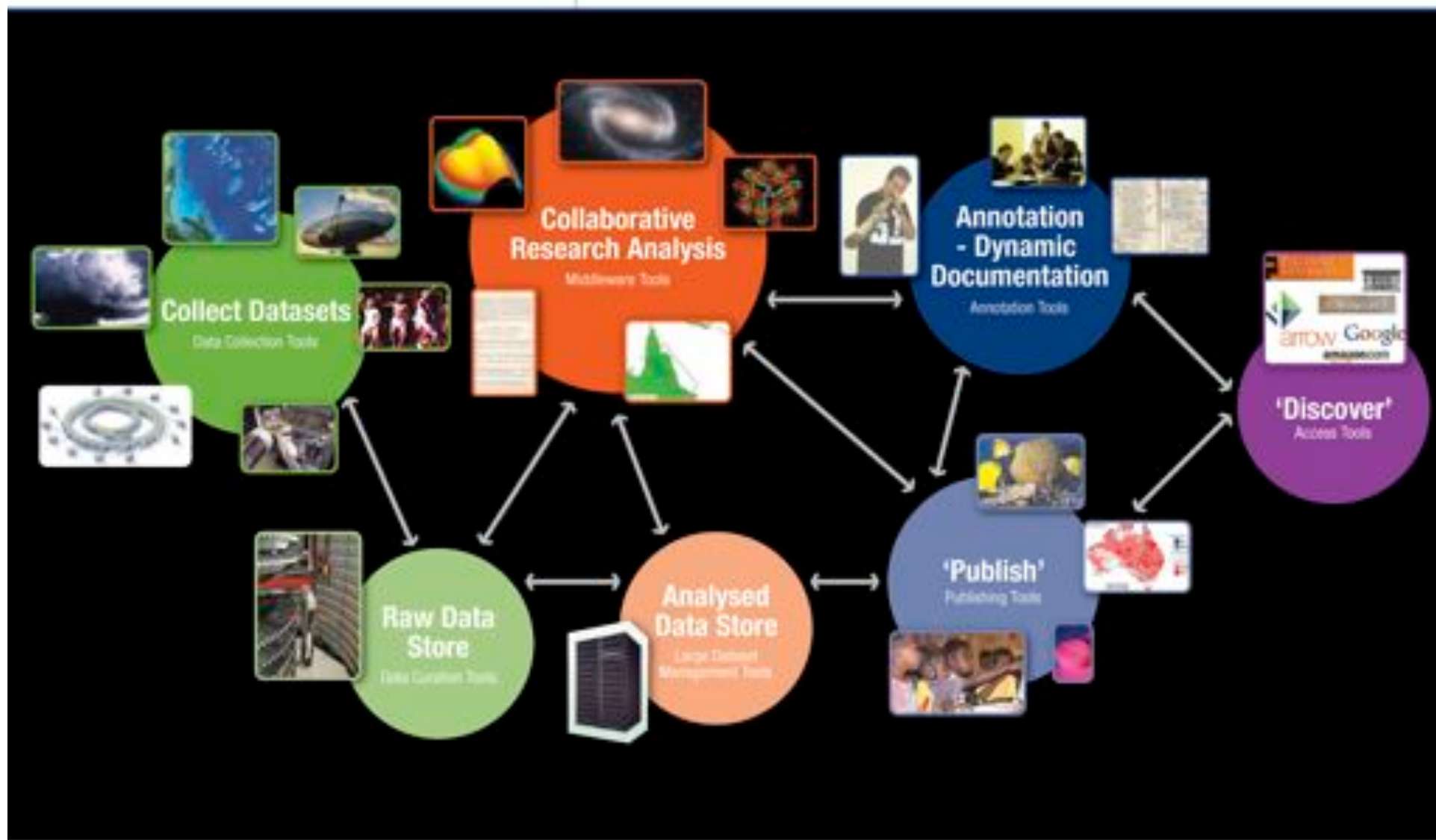


Ian Atkinson

What did DART try to achieve?

- To develop software tools to handle the data and information management requirements of the complete research lifecycle
- To collect and manage large datasets, associated with instruments, such as sensor networks, X-ray diffractometers, etc.
- To support collaborative research and annotation needs
- To deal with intellectual property, privacy and security issues
- To create customised portals for research demonstrators
- To handle research publication, discovery and access

or to put it another way.....





DART work packages

- The work packages cover five broad technical areas:
 - Data Collection and Monitoring
 - Storage and Interoperability
 - Content and Rights
 - Annotation and Assessment
 - Discovery and Access
- Details [on the website](#), including all project outputs:
 - reports, source code, documentation
- Or come and see the stand in the exhibition area!



DART Achievements

- Strong progress in data capture and instrument integration
- Investigated storage and replication of very large datasets across diverse networks
- Placed Information Management staff into research teams, addressing their data and information management requirements
- Developed annotation software for 3-D models, video and audio
- Reviewed IP and privacy around datasets and e-research practices
- Investigated Creative Commons & Science Commons licensing
- Worked to utilise Shibboleth, PKI and Grid security standards
- Developed search tools, metadata schema registry, Plone tools, etc
- Production deployment of X-Ray Crystallography tools



DART Demo

- NOTE: This is only a partial demo of the range of work performed in DART - for more see the website or visit the stands in the exhibition area
- <https://dev.archer.edu.au/downloads/DartPortalDemonstration/eResearch-no-callouts/eResearch-no-callouts.html>
- <https://dev.archer.edu.au/downloads/DartPortalDemonstration/eResearch-callouts/eResearch-callouts.html>



DART Lessons

- Importance of demonstrators
 - not envisaged in original bid
 - demonstrating end-end benefits
- Integration challenges
 - didn't originally employ someone to focus on this
 - underestimated amount of complexity and effort required
- Collaboration and co-ordination
 - Tendency to focus on the specific task
 - Problem of distributed activity
 - Lots of travel around
 - Over-busy chief investigators
- Rate of technology change

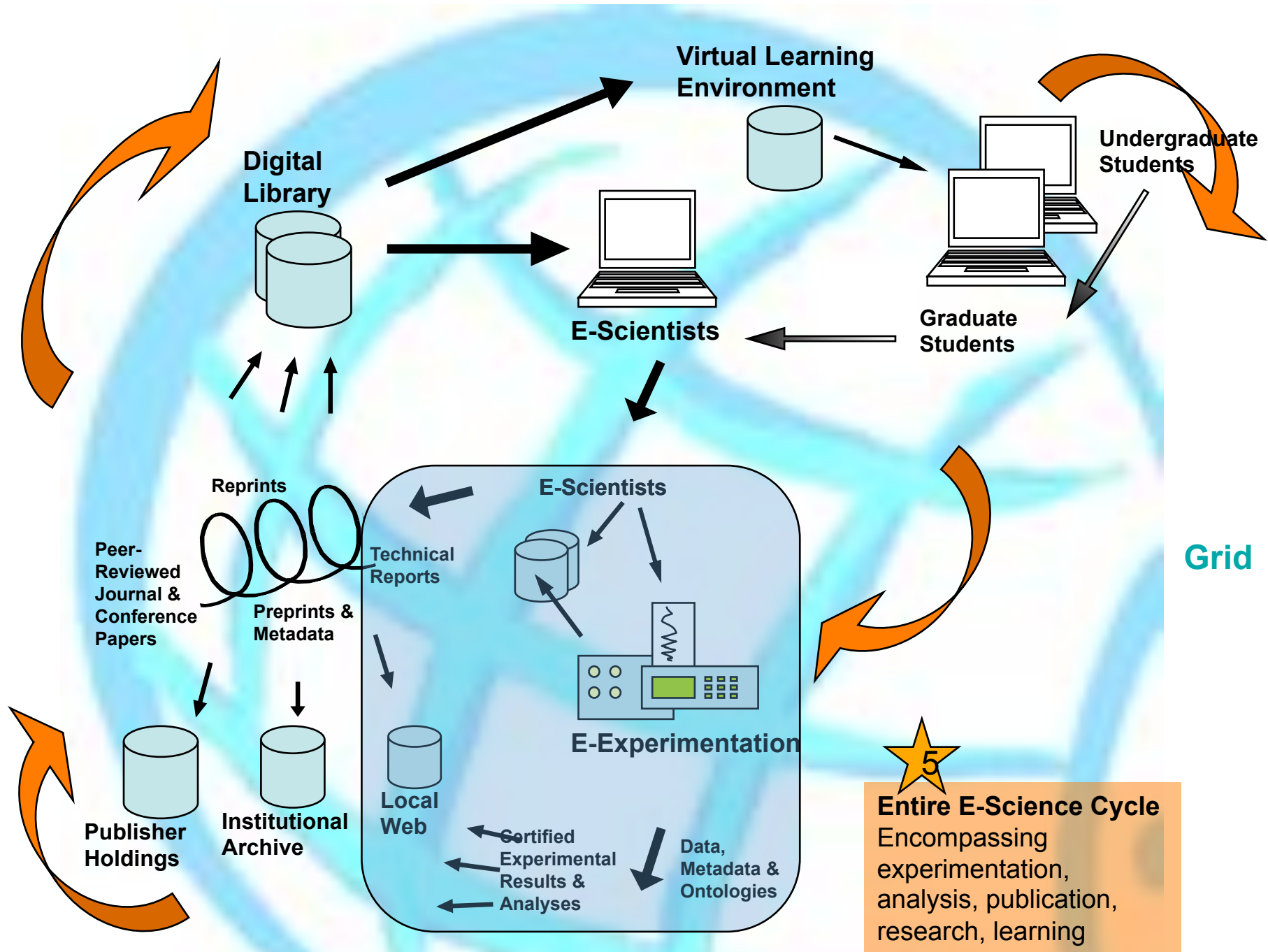


DART Conclusions

- Value of end-end approach didn't evidence itself as much as expected
- Different groups get excited about particular components
- Researchers are very time-poor and need immediate value to stay involved
- Need agile development techniques to deal with loose or missing requirements
- Some of the changes we envisaged in DART are now happening in scholarly communication practices and national initiatives
 - RQF accessibility component
 - NCRIS Platforms for Collaboration (ICI and ANDS)

From DART to ARCHER

- Australian ResearCH Enabling enviRonment
- ARCHER is a new DEST funded project for 2007 that will take the **proof-of-concept** outcomes of DART, turn them into **production-ready** ARCHER software tools, and package them, along with other open-source components, for deployment
- These tools are being developed as modular middleware components, customised to suit the needs of a number of designated National Collaborative Research Infrastructure Scheme (NCRIS) priority research capabilities
- Now engaging with NCRIS capabilities and undertaking active development



Source: Adapted from Liz Lyons, eBank UK Presentation

Web Frontend



ARCHER Components



Stores



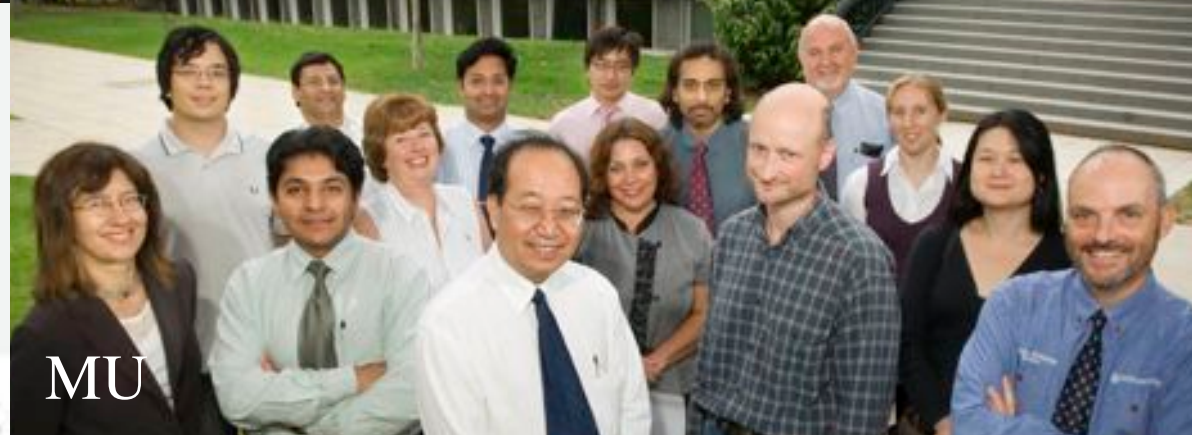
Enabling Infrastructure





Acknowledgements

- Without the hard work of all these people (and more!), DART could not have happened!





Questions?

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 - dart.edu.au
 - archer.edu.au
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