Making use of the UK's advanced computing services for research - an overview

Enabling, facilitating and delivering quality training in the UK and Internationally

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eGee
Enabling Grids
For E-sciencE

omii europe
open middleware infrastructure institute

PP·ARC

NGS
National Grid Service

ICEAGE

National eScience Centre

- Open meeting place for researchers using computing
- Examples and projects to help show what can be done
- Bringing users, developers and service providers together
- Helping represent the UK internationally
- Training & outreach

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What is JISC?

The mission of the Joint Information Systems
Committee (JISC) is to provide world-class leadership
in the innovative use of ICT to support education and
research. JISC funds a national<u>services portfolio (e.g.
JANET) and a range of programmes (e.g. Use of
Technology to Support Admissions to HE) and projects
(e.g. Google Generation project).</u>

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What are distributed services

Not end to end solutions but sets of resources that can be combined to make solutions.

Individual bricks to build up.
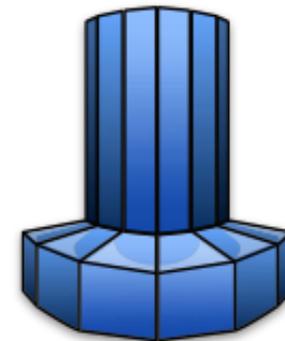
What is the glue?

Application to application communication.
- Web services and intermediate data formats
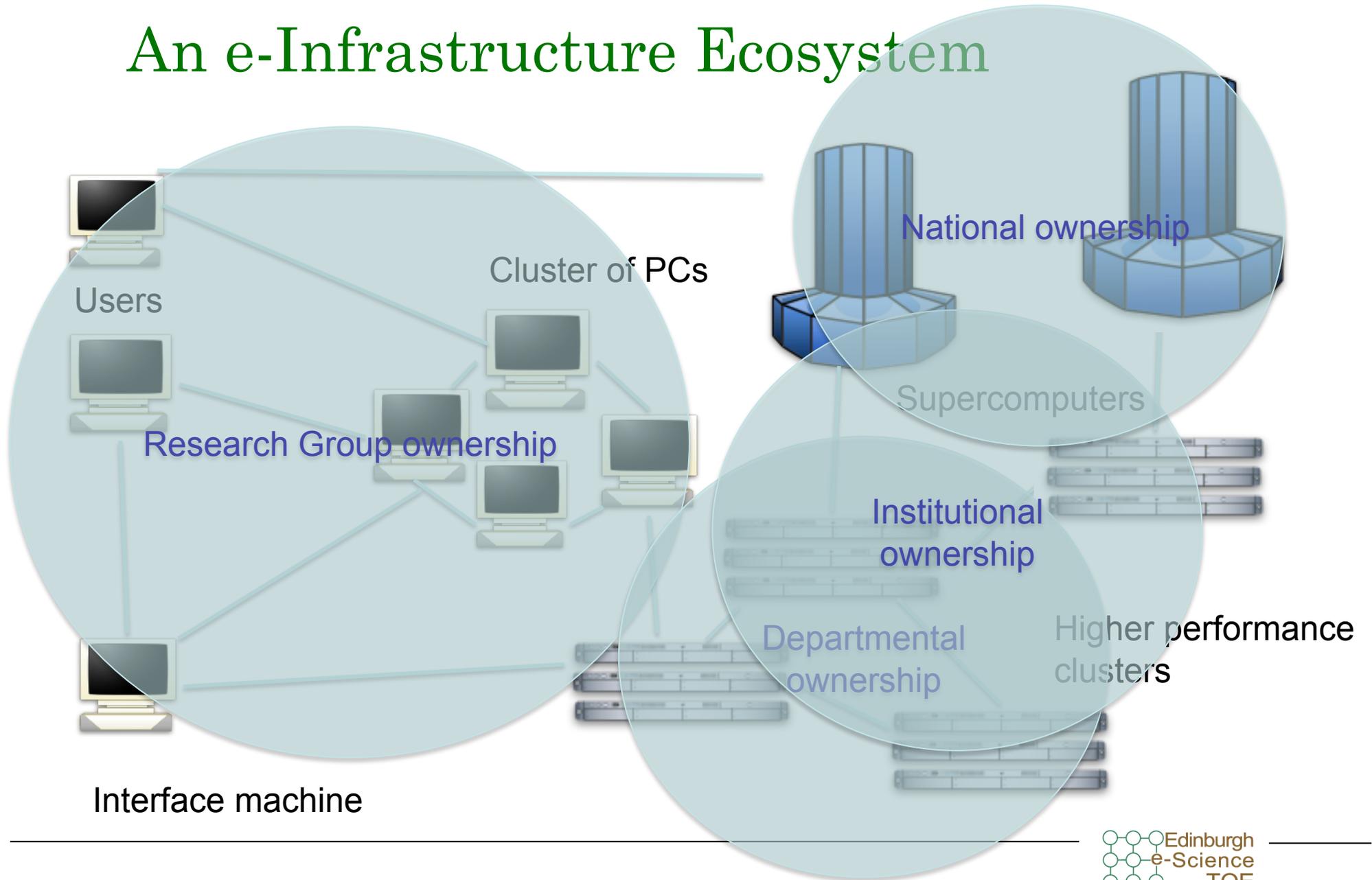- Not always there yet

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An e-Infrastructure Ecosystem - types of computing

- Providing broad access to a range of services

- High Performance Computing
  - Large computationally intense simulations
  - Requires cutting edge super computing

- High Throughput Computing
  - Very large numbers of small jobs
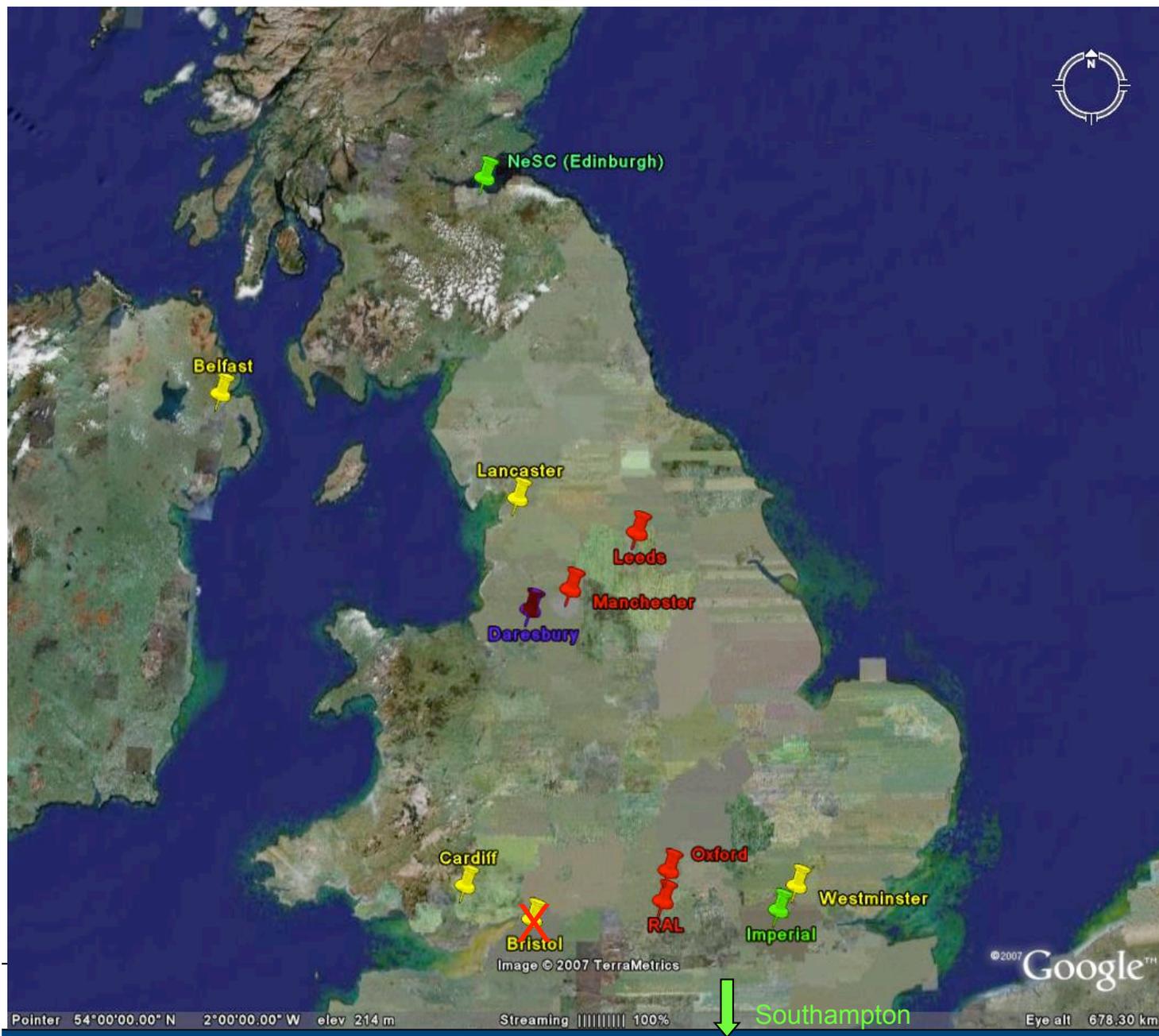 - Can use large numbers of consumer computers

An e-Infrastructure Ecosystem

National ownership

Cluster of PCs

Users

Supercomputers

Research Group ownership

Institutional ownership

Departmental ownership

Higher performance clusters

Interface machine

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An e-Infrastructure Ecosystem

Peer reviewed access

Cluster of PCs

Users

Supercomputers

Constant access

Requires grant support

Higher performance clusters

Easily accessed

Interface machine

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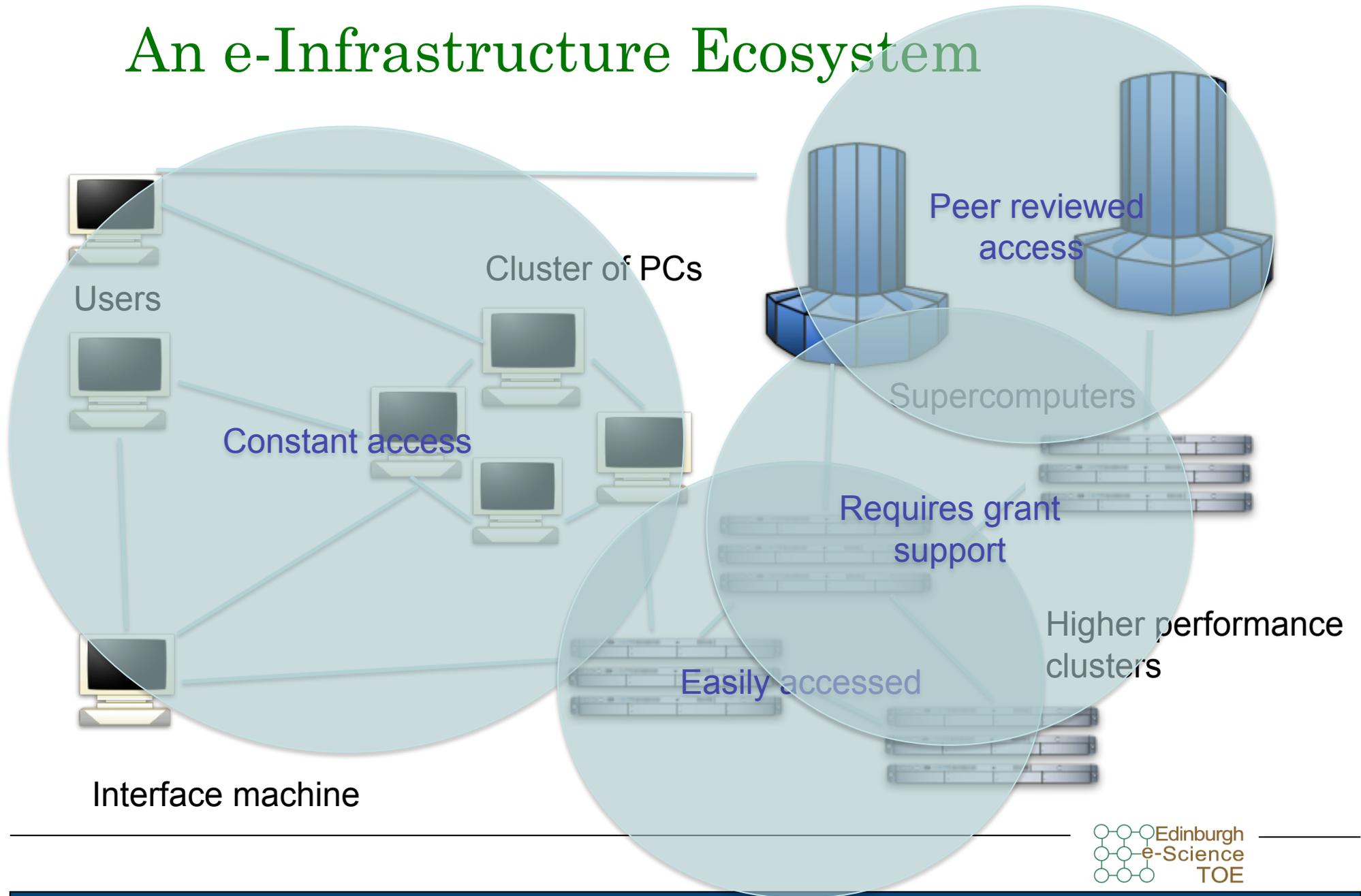
NGS & Partners

An e-Infrastructure Ecosystem
- other resources

- Computation

- Data
  - International data sets
  - National data sets
  - Local data sets

- Services
  - Applications
  - Combining services
  - others

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Edina

- http://edina.ac.uk/

- Collections DescriptionDigimap is a collection of EDINA services that deliver maps and map data of Great Britain to UK tertiary education. Data is available either to download to use with appropriate application software such as GIS or CAD, or as maps generated by Digimap online.
- There are a number of collections available, each requiring a separate institutional subscription. Once subscribed, access is free at the point of use. Some collections also require individual registration.

- **Digimap - Ordnance Survey® CollectionHistoric**
- **Digimap - historic maps from LandmarkGeology**
- **Digimap - geological maps and data from the British Geological SurveyMarine**
- **Digimap - hydrographic maps and data from SeaZone**

- **Uses of Digimap**
- **Example Applications**
- **Detailed Case Studies**

Digimap applications

- **Agriculture**
- Development impact on agricultural land around the urban fringe
- Quarries on farms
- **Archaeology**
- Clava Excavation project
- Field school training excavation exercise
- **Architecture**
- Newcastle Quayside design
- **Astronomy and Astrophysics**
- Locating interference sources (transmitters) and assessing topography for suitable telescope situation
- **Biological Anthropology**
- Demography
- **Cellular Science**
- Clinical medicine
- **Celtic studies**
- Place names in the Highlands and Islands
- **Civil Engineering**
- Policy sensitive traffic signal control
- Traffic management studies
- **Civil and Environmental Engineering**
- Hydrological model of River Almond catchment
- **Computer Science**
- 3D visualisation of landscapes
- Aberdeen beach hazards
- **Continuing Education**
- Location modelling of Bronze Age settlements and burials
- **Ecology and Resource Management**
- Manganese mobilisation from upland catchment
- **Economic and Social History**
- Evaluation for teaching
- **Economics**
- Externality fields produced by Tottenham Hotspur football club
- Regional analysis of demographic and economic issues
- **Electrical Engineering**
- Access to water for testing data signals
- Externalities of wind energy

Electronics and Electrical Engineering
Position location using mobile radio and GPS
Engineering
Wind damage to buildings in the UK
Geography
18th century Bedfordshire
Car distribution
Deglaciation of Eastern Scotland
Environmental change in west Reading area
Phosphorous modelling in the River Kennet
Sustainable tourism and waste management
Terrain modelling for air flow/large bird interaction
Geology
Shoreline management in Lincolnshire
History
Historic Towns Atlas
History of Merton College, Oxford and its estates
Land Economy
Site development appraisal
Library
Identifying EU Structural and Regional Fund Boundaries
Management
Housing projects
Marine Sciences and Coastal Management
Trace gas photo production in estuaries
Mathematical Sciences
Modelling rainfall with respect to topographical variables
Medical Sociology
Area health project
Physiological Sciences
Evaluation for Epidemiology
Planning
Brownfield sites
Statistics
Population decline in townships in the Ross of Mull
Teaching and Learning Service
Development of information and computer technology resources for learning
Town and Country Planning
Wylam planning development
Zoology
Distribution of watervoles
Seal behaviour

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Video and Audio

- Film and Sound OnlineFilm & Sound Online is a JISC-funded set of collections of film, video and sound material. Several hundred hours of high-quality material are available for download, either in full or as segments, and can be used freely in learning, teaching and research.

- **Preview Sample Film clips
Use the sample clips to see what a typical film is like, and to test the download speed of the computer you're using.**

- **Sample Film/Video Description
A typical description of a downloadable film from Film & Sound Online.**

- **Collections
Descriptions of and list of film titles for all the collections.**

- **About MAAS
The original agency responsible for digitising the content of Film & Sound Online.**

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Collections

- Film & Sound Online Collections

- **Amber Films**
- Documentaries and feature films from a remarkable film-making collective established in the north-east of England in 1968. Of interest to students, teachers and researchers in the fields of media studies and of UK political and social history in the late 20th and early 21st centuries.
- An**glia Television Library**
- **Two** series: "Who Were the British?" (1965) and "The Lost Centuries" (1968): The first covers the history and impact of the Romans in Britain. The second covers the Post-Roman rise of Christianity and the later influence of the Islamic Empires through to the Renaissance.
- Bioch**emical Society**
- **A subs**tantial selection of films from the Biochemical Society Archive, charting the development of biochemistry in the later 20th century through the experiences of some of the subject's most celebrated practitioners.
- Culverho**use Classical Music**
- **Over 50 h**ours of copyright-free classical music and associated scores, covering much of the core repertoire plus rarer pieces from the 17th to the 20th centuries. Adaptation and manipulation permitted.
- Digital Him**alaya**
- **One of the f**inest ethnographic film collections documenting Himalayan cultures, also including footage from other parts of the world. A selection of about 50 hours.
- Educational an**d Television Films Ltd, the ETV Collection**
- **100 hours of fi**lms from the political Left from around the world, including the USSR, China, Eastern Europe, Chile and Cuba.
- Films of Scotland
- **Documentary films** on all aspects of Scotland. A selection of 50 hours.
- Healthcare Productio**ns**
- **Material in the field** of health education for students, nurses, medical practitioners, and the public. A selection of 25 hours.
- Imperial War Museum
- A **substantial selection** of films from one of the most important moving image resources for the study of the major conflicts in which Britain was involved in the 20th Century. A selection of 50 hours.
- IWF Knowledge and Media Gm**bH**
- **A wide selection of materia**l from one of the leading science film institutes in the world, based in Germany. A series of highlight extracts from the collection's complete films is available, each one complete in itself and showing a single process or phenomenon, together with a growing list of complete films from the collection.
- Logic Lane

More collections

- A series of films **tracing the** development of philosophy at Oxford University from the 1930s to the early 1970s, featuring eminent figures such as Sir Alfred Ayer, Bernard Williams, Iris Murdoch and Sir Isaiah Berlin. A collection of 6 titles amounting to just under six hours.
- Performance Shakespeare
- A colle**ction of 11 productions an**d documentaries from Channel 4 Learning that will complement, inform and support the study of English literature, media, theatre, the performing arts and creative industries.
- Royal Mail Film Classics
- One of th**e finest British collection**s of documentary, public information, animation and industrial film, covering subjects ranging across transport and communications in Britain and abroad, the Home Front during the Second World War, British industries from fishing to mining, the nation's health - and developments in the Post Office service itself. A selection of 16 hours.
- St George's Hospital Medical School Co**llection**
- **These films reflect the production and** teaching needs of one of the leading medical schools in the UK. A selection of nine hours.
- Sheffield University Learning Media Unit **Collection**
- **Medicine, statistics, law, chemistry, arch**aeology, and the performing arts. A selection of 47 hours.
- The Trials of Alger Hiss (1980)
- An account **of the espionage and perjury case** that resulted in the conviction and imprisonment of Alger Hiss. A single film

MIMAS

- http://www.mimas.ac.uk/

- What is Mimas?

- Mimas is a JISC and ESRC-supported national data centre providing the UK Higher Education, Further Education and research community with access to key data and information resources to support teaching, learning and research across a wide range of disciplines.

- Users from authorised institutions can access Mimas services free of charge*.

- This website is a gateway to all Mimas services and projects.

MIMAS services

Mimas Services Overview
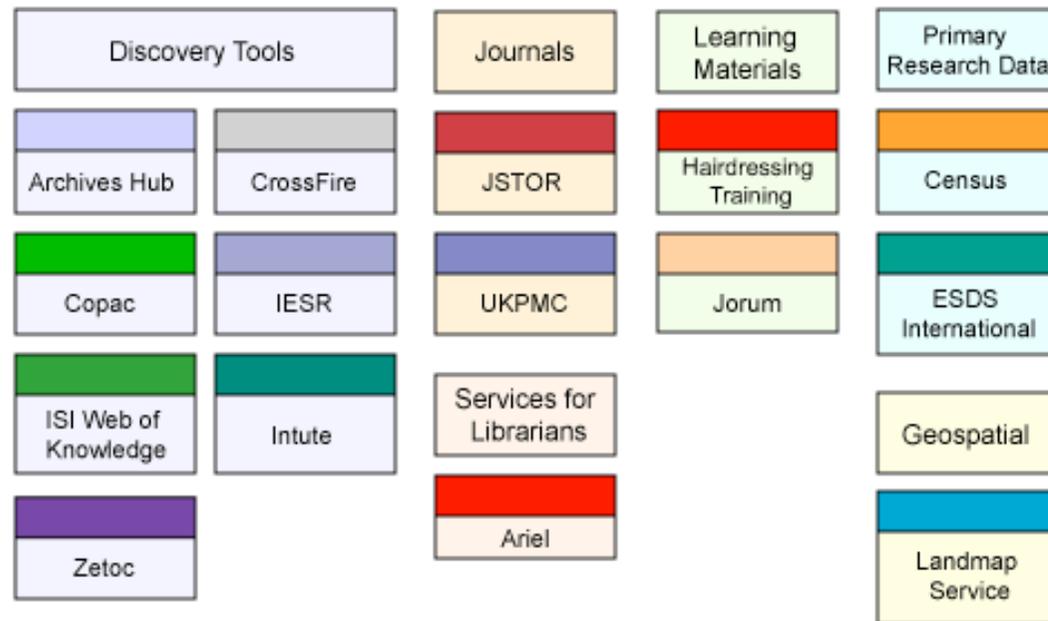
Aggregating services

- Collecting and plugging together information or computation from many sources

- Creating more than a simple combination

- It's not the technology it's what you do with it that counts!

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Crimes in the Chicago area

Diseases by location

MyExperiment

http://www.myexperiment.org/

Workflow sharing

Workflow example

Roadshow entry – file sharing

Workflows

- The steps required to do a task
- Understanding how we do our jobs
- Decomposing tasks

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Example workflow

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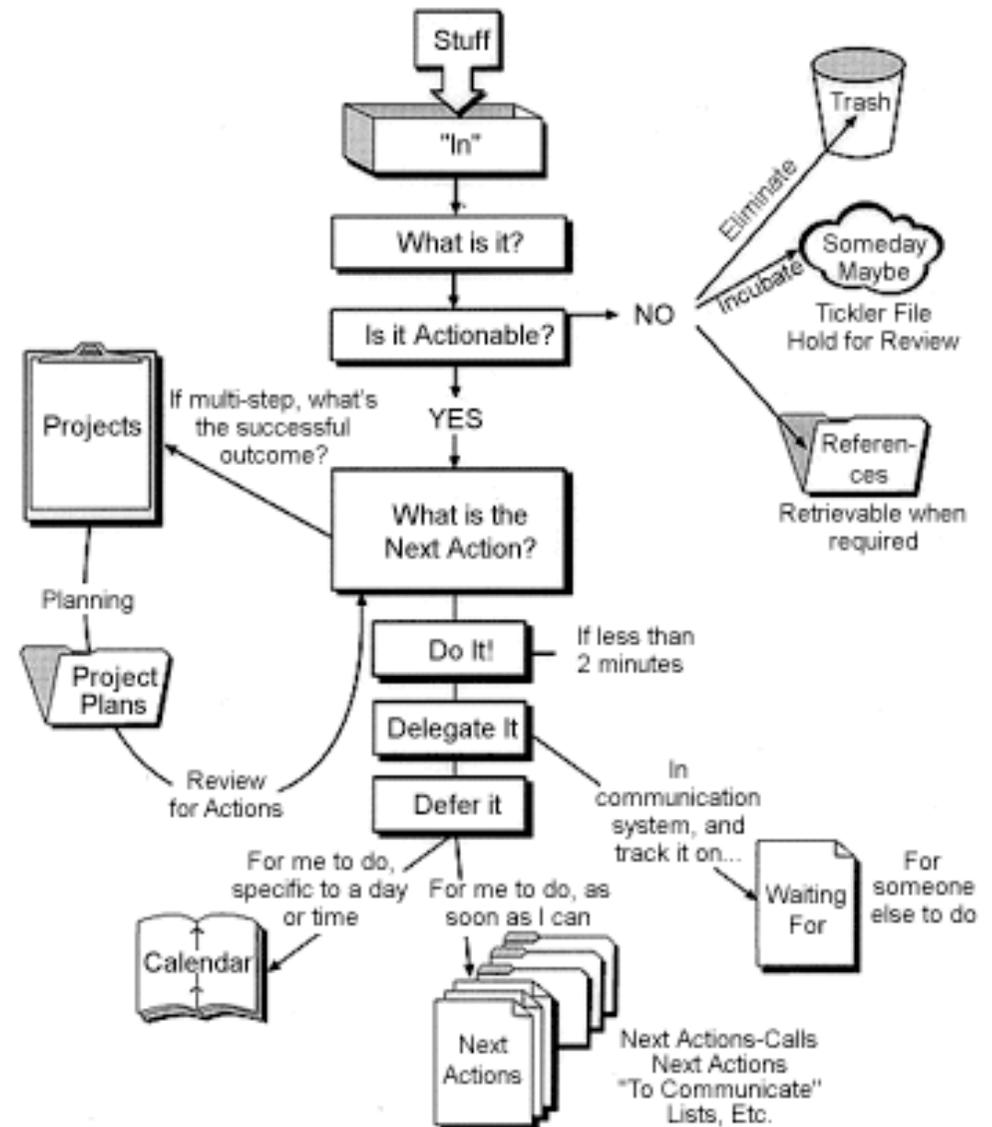
Photography workflow
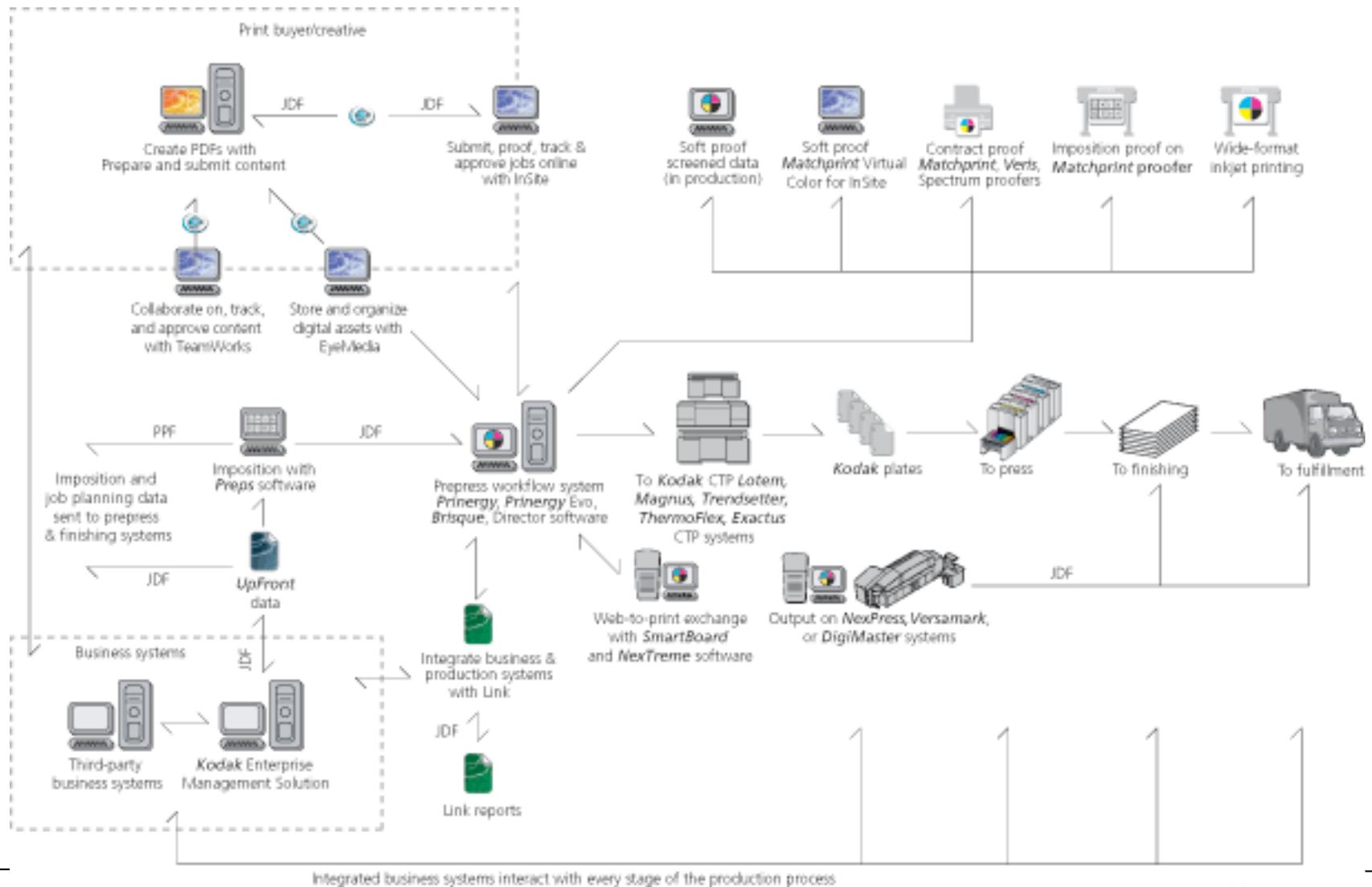
Metadata is the thing

JISC services

JISC funds a range of content, resource discovery, advisory and support services to address the needs of all users in further and higher education, and research councils. Some of these services are included in this catalogue.

For more information about all JISC Services visit: **www.jisc.ac.uk**

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JISC Services

Academy JISC Academic Integrity Service

www.heacademy.ac.uk/ourwork/ learning/ academic_integrity

Archives Hub

www.archiveshub.ac.uk/

British Universities Film and Video Council (BUFVC)

www.bufvc.ac.uk

Census Dissemination Unit

http://census.ac.uk/cdu

JISC CETIS (JISC Centre for Educational Technology Interoperability Standards)

www.cetis.ac.uk

Copac

http://copac.ac.uk

Digital Curation Centre (DCC)

www.dcc.ac.uk

Economic and Social Data Service (ESDS)

www.esds.ac.uk

EDINA   **http://edina.ac.uk**
Information Environment Service Registry
www.iesr.ac.uk
JISC infoNet
www.jiscinfonet.ac.uk
JISC Internet Plagiarism Advisory Service
www.jiscpas.ac.uk
Intute
www.intute.ac.uk
JANET
www.ja.net
JISC Legal
www.jisclegal.ac.uk
JISC Monitoring Unit
www.mu.jisc.ac.uk
JISC RSCs (Regional Support Centres)
www.jisc.ac.uk/whatwedo/services/as_rsc/rsc_home
Mimas
www.mimas.ac.uk

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National Academic Mailing List service (JISCMail)	**www.jiscmail.ac.uk**
Netskills	**www.netskills.ac.uk**
OSS Watch	**www.oss-watch.ac.uk**
Procureweb	**www.procureweb.ac.uk**
SUNCAT	**www.suncat.ac.uk**
TASI (Technical Advisory Service for Images)	**www.tasi.ac.uk**
JISC TechDis	**www.techdis.ac.uk**
Techwatch	**www.jisc.ac.uk/whatwedo/services/ services_techwatch/techwatch**
Text Mining Centre	**www.nactem.ac.uk**
UK Access Management Federation for Education and Research	**www.ukfederation.org.uk**
UKBORDERS	**www.edina.ac.uk/ukborders**
UK Data Archive	**www.data-archive.ac.uk**
UKOLN	**www.ukoln.ac.uk**
Zetoc	**http://zetoc.mimas.ac.uk**

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JISC Information Environment Service Registry (IESR)

- http://www.omii.ac.uk/repository/project.jhtml?pid=178

- http://iesr.ac.uk/

- is a machine readable registry of electronic resources;
- contains information about these electronic resources, and details of how to access them;
- aims to make it easier for other applications to discover and use materials which will help their users' learning, teaching and research.

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UK Data Archive

- UK Data Archive
  The UK Data Archive (UKDA) is a national resource centre that acquires, disseminates, preserves and promotes the largest collection of digital data in the social sciences and humanities in the United Kingdom.

- http://www.data-archive.ac.uk/

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JISC Virtual Research Environments

VRE definitionA VRE helps researchers in all disciplines manage the increasingly complex range of tasks involved in carrying out.

 A VRE will provide a framework of resources to support the underlying processes of research on both small and large scales, particularly for those disciplines which are not well catered for by the current infrastructure.

http://www.jisc.ac.uk/whatwedo/programmes/vre2.aspx

VREs add value to the research process across all disciplines by complementing and inter-working with existing resources and by being flexible and adaptable to changing requirements.

The approach being taken is based on an architecture which is extensible and supports, but does not restrict, the resources needed by individual research teams.

The concept of a VRE is evolving, and the intention of this programme is not to produce a complete VRE, but rather to define and help to develop the common framework and its associated standards and to encourage others to work within this framework to develop and populate VREs with applications, services and resources appropriate to their needs.

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VERA

Virtual Research Environment for Archaeology

http://vera.rdg.ac.uk/index.php