

Review of OSI Report *Developing the UK's e-Infrastructure for Science and Innovation*

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Chair of Expert Group for
Review of e-Infrastructure
Steering Committee



What is e-Infrastructure?

- ❑ the integration of digitally-based technology, resources, facilities, and services
- ❑ combined with people and organizational structures
- ❑ needed to support modern, collaborative research.

Data – Software – Hardware – Networks - People

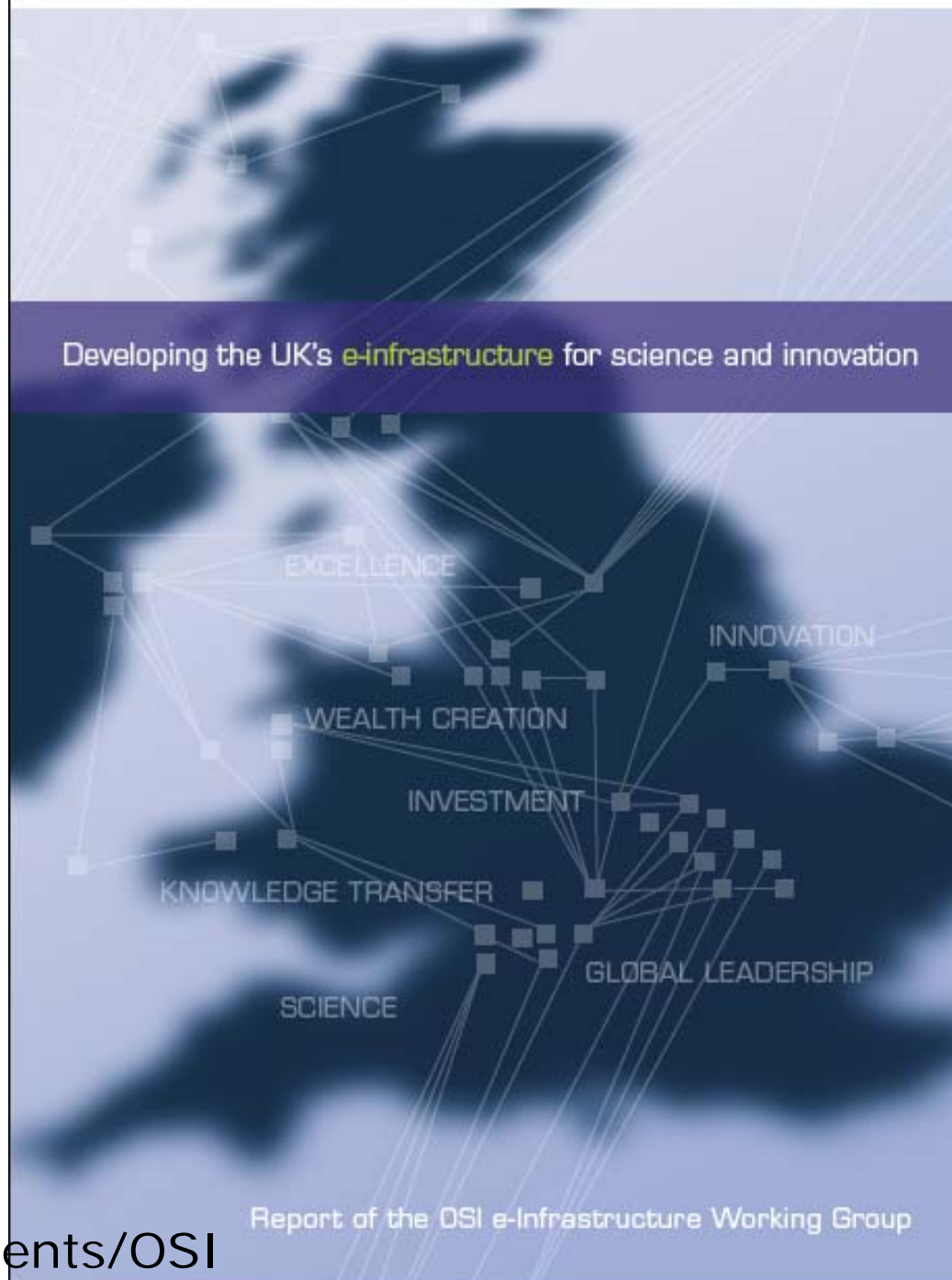
Developing the UK's e-Infrastructure for Science and Innovation, 2007

- Response to the Science and Innovation Investment Framework 2004-2014, published by the Treasury, the DTI and the DfES in 2004.

- OSI e-Infrastructure Working Group.
 - Six sub-group reports
 - Cross cutting themes

- Integrated report.

<http://www.nesc.ac.uk/documents/OSI>

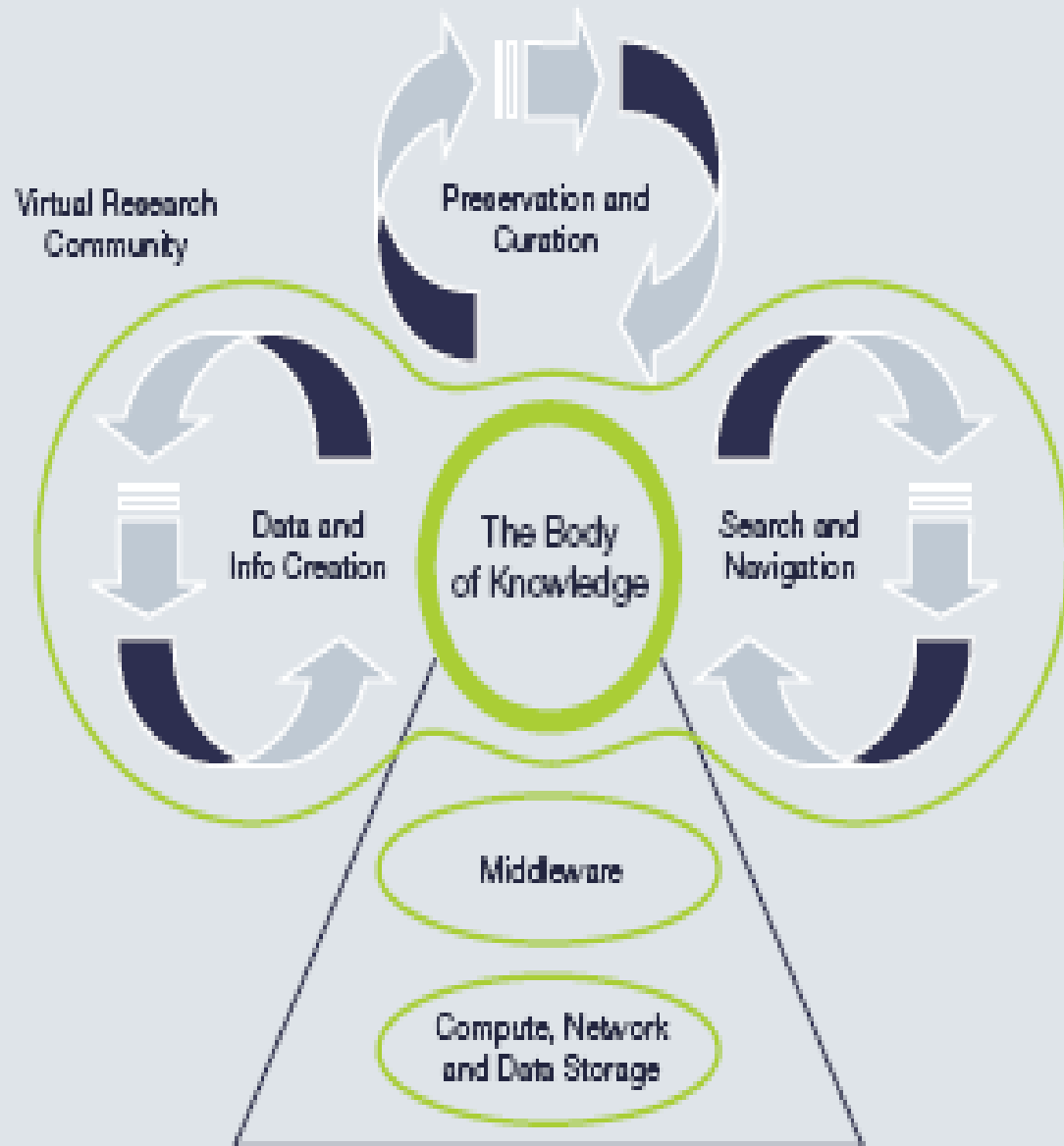


Working Group Areas

- Data
- Preservation and Curation
- Search and navigation
- Virtual Research Communities
- Compute, Network and Data Storage
- AAA, Middleware and DRM

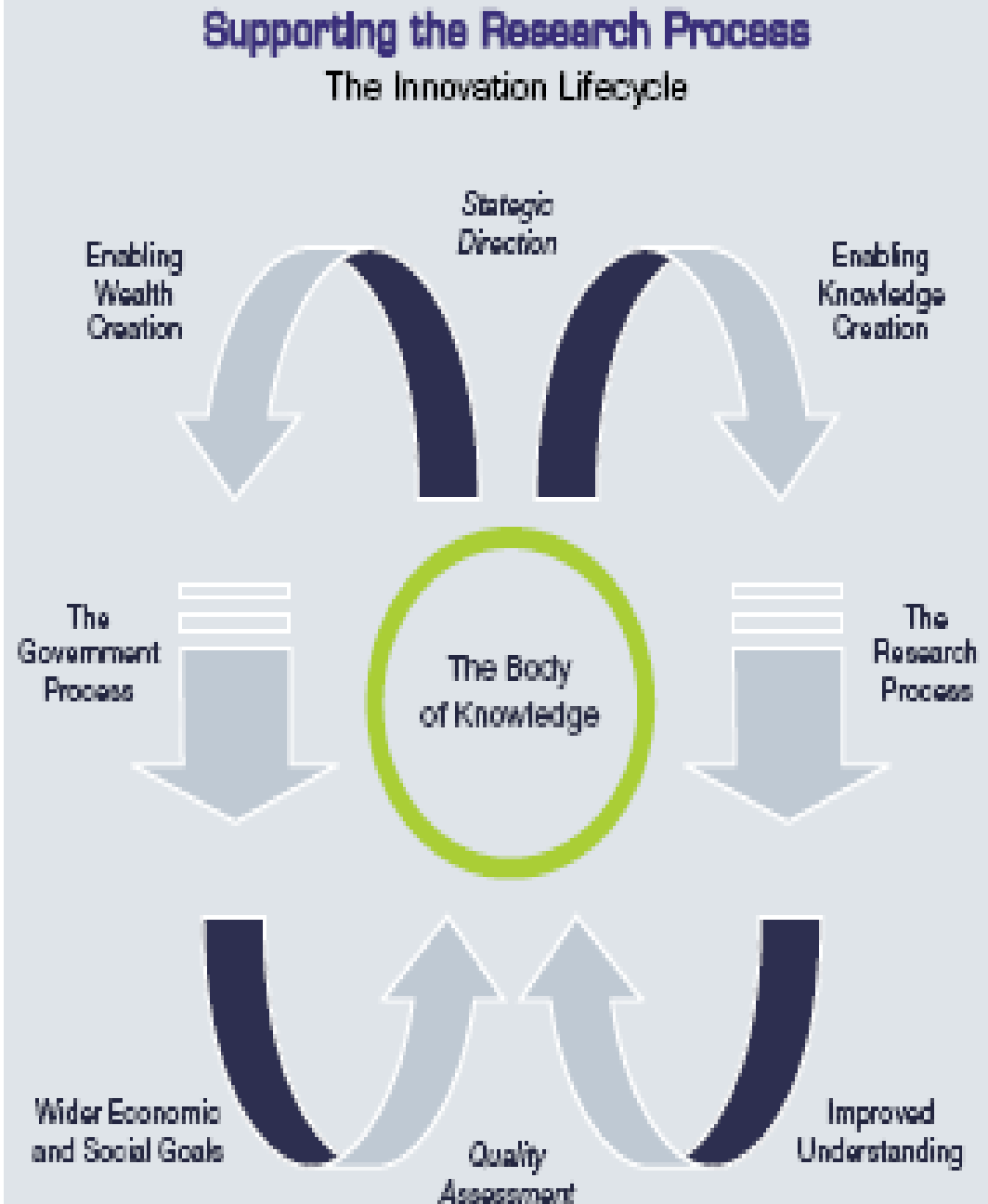
Supporting research and innovation

The elements of a national e-infrastructure



Cross-cutting themes

- Outreach and technology transfer
- Interoperability and standards
- Research and development
- Cultural change
- Coordination
- Quality assurance
- Training and skills





What happened...?

- ❑ Important report from the community
- ❑ Strong alignment with the International Review

However

42 key recommendations.

13 policy recommendations.

No actions plan for their implementation.

No priorities.

No distinction between medium & long term recommendations.

No clarity on who is responsible for coordination of what.



Transformative Big Vision, Small Steps

- Review commissioned by the Department for Business, Innovation and Skills (BIS).
- Managed by ESRC.
- Expert Group and Steering Committee
- Kicked off with Light Touch review of OGI report by Research Information Network, started June 2009 reported Dec 2009.
- A few key recommendations and a stepwise action plan with achievable goals for BIS.

New developments

- Cloud Computing
 - Green Computing
 - Software as Service
 - Sensors everywhere
 - Open Access Repositories
 - Web 2.0
 - Crowd sourcing
 - Semantic Web
 - Linked Open Data
-
- Data.gov – “make public data public”
 - Digital Britain
 - RCUK Grand challenges





Community

- ❑ Century of Information Research report
- ❑ Nature and Science commentaries
- ❑ Microsoft 2020 Science report

RCUK and JISC

- ❑ Strategic Plans and SAT reports
- ❑ International fact finding reports
- ❑ ESRC National Data Strategy

International

- ❑ US Report of Interagency WG on Digital Data to the National Science and Technology Council.
- ❑ EU e-Infrastructure Reflection Group (e-IRG) reports...

International Panel for UK e-Science Review Recommendations



Expert Group

Chair: Carole Goble, University of Manchester

ESRC	Jeremy Neathey, Kristine Doronenkova
AHRC	Shearer West
EPSRC	Lesley Thompson
MRC	Tony Peatfield
BBSRC	Amanda Collis
JISC	Malcolm Read
NERC	Mark Thorley
STFC	Neil Geddes
British Lib.	Richard Boulderstone
RIN	Michael Jubb



Steering Group

Chair:

Doug Kell

Chief Exec BBSRC

Cabinet Office

Home Office

BIS

Devolved administrations





What we do not want ...

- To interfere with what is working fine.
 - Not to remove resources from leading e-infrastructure.
 - Not to tamper with domain specific e-infrastructure.

- To suggest one e-infrastructure for all.
 - Avoid reinventing wheels but there are many kinds of wheel.

- To be top down dictatorial or “1000 flowers bloom”.
 - Mixed economy, middle out, targeted, informed.

- To allow e-infrastructure to be kicked into the long grass.



Collective Responsibility

Research
Councils

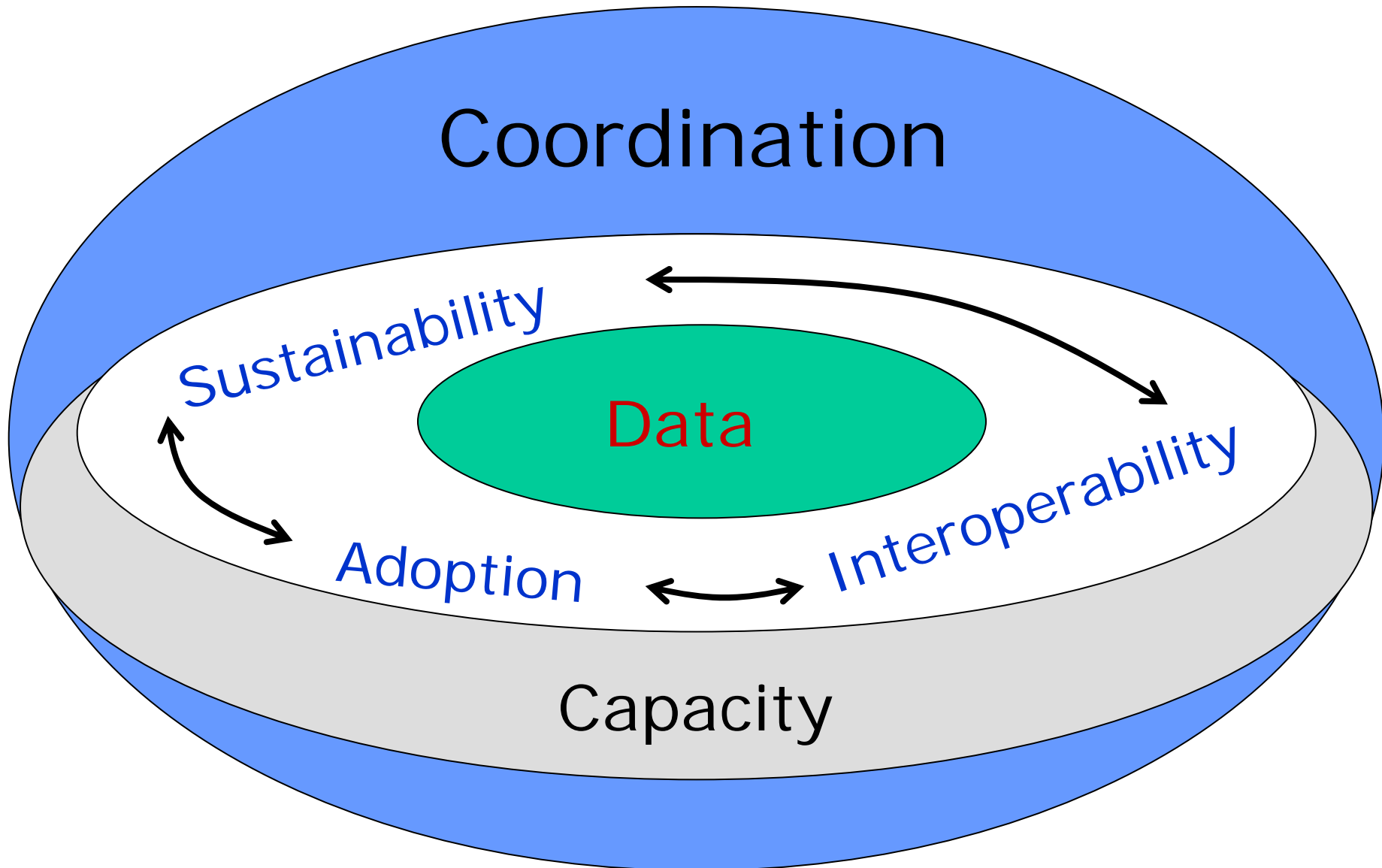
Industry

Higher
Education
Institutes

Research
Community

**WORK IN
PROGRESS**

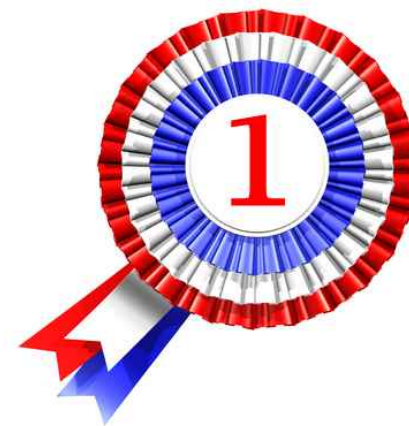
Six Action Plan Areas





Dedicated Leadership and Coordination

- ❑ Own and drive the UK vision for research e-infrastructure.
- ❑ Provide a multi-year perspective, identify best practice and coordinate stakeholder investments.
- ❑ Champion relevant and fit-for-purpose cross-disciplinary standards to facilitate coordination.
- ❑ Facilitate tiered coordination.
- ❑ Strategic co-investments to make the whole greater than the sum of the parts.
- ❑ Co-shaping.





Dedicated Leadership and Coordination

- ❑ Strategic and cross-agency.
- ❑ Clearer responsibilities and roles between funding agencies.
- ❑ Cross-European and international.
- ❑ Up to date and horizon scanning.
- ❑ Facilitate and enable partnerships with industry.

for
e-Infrastructure



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National
Strategic
“Office”

for
e-Infrastructure

A Kind of Example ... ?

- ❑ The Office for Life Sciences
- ❑ Established in January 2009
- ❑ Improving the UK operating environment for pharmaceutical, medical technology and medical biotechnology industries.
- ❑ An early example of the Government's active approach to industrial policy and a new model of joint working, bringing together Government departments (Business, Innovation and Skills, Health, UKTI and the Treasury) and industry, the NHS and academia.



Office for
Life Sciences

Sustainability

- ❑ Stability for e-I lumps and glue.
- ❑ Different strategies for: services, software, data sets and hardware.
- ❑ Agree on the key e-Infrastructure in different scientific domains and clarify who funds it.
- ❑ Get e-Infrastructure onto the Large Facilities roadmap.
- ❑ Rolling review.



Interoperability

- Making and applying selective glue.
- Pinpoint strategic interventions that amplify impact.
 - e.g. standards and best practices
- Strategies for: services, software, data sets and hardware.
- Targeted strategic funding.





Adoption:

Use it or lose out.

- Make fit for adoption.
 - Crossing the chasm.
 - Targeted hardening and best practice (ENGAGE).
- Usable from the outset.
 - Pathways for adoption and exploitation in proposals.
 - Guided decision making.
- Help researchers use it.
 - The last mile by producers.
 - Ramps for consumers.
 - Reward not obstruct adoption.





Capacity building of our skills base

- Influence training and capacity building programmes.
- Promote training for young and mid-career researchers and research technologists.
- Enable mixed skilled research teams to include research technologists.
- Value and reward highly skilled research technologists within HE institutions with a career structure.





Why Data?

- ❑ Data intensive scientific research.
- ❑ Primacy of data in all research disciplines.
- ❑ Linking data and computation.
- ❑ Most cost effective means of collaboration is exchanging data.
- ❑ Beacons of leadership and dark patches.
- ❑ Possibilities of amplifying results across and within disciplines.





Small Steps

Co-ordinate data sharing policies across funding agencies.

coordination

Enable use of data clouds.

sustainability

Enable the development and encourage the adoption of metadata standards.

interoperability

adoption

Establish or adopt a cross-discipline data citation mechanism for building credit / audit when sharing data.

capacity



Examples:

- Data citation mechanisms being developed by DataCite, the Intergovernmental Panel on Climate Change and others.
- Cloud computing initiatives being developed by JISC and EPSRC and BBSRC. Opportunities for industry partnership (cf CLuE in USA).



Timetable

- First Group meeting 18th December 2009.
- Action plan completion 1st March 2010.
- Action plan to Steering Committee late March 2010.



