

Introduction to e-Social Science

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Overview

- Background
 - e-Science and the Grid
- ESRC e-SS strategy
 - Pilot demonstrator projects
 - NCeSS
- e-SS research agenda
 - Fundamentals
 - Current research: examples
- Developing the research agenda
 - Collaboration with relevant research programmes
 - How you can get involved

Background

e-Science

“e-Science is about global collaboration in key areas of science and the next generation of infrastructure that will enable it.”

(John Taylor, DG, Research Councils)

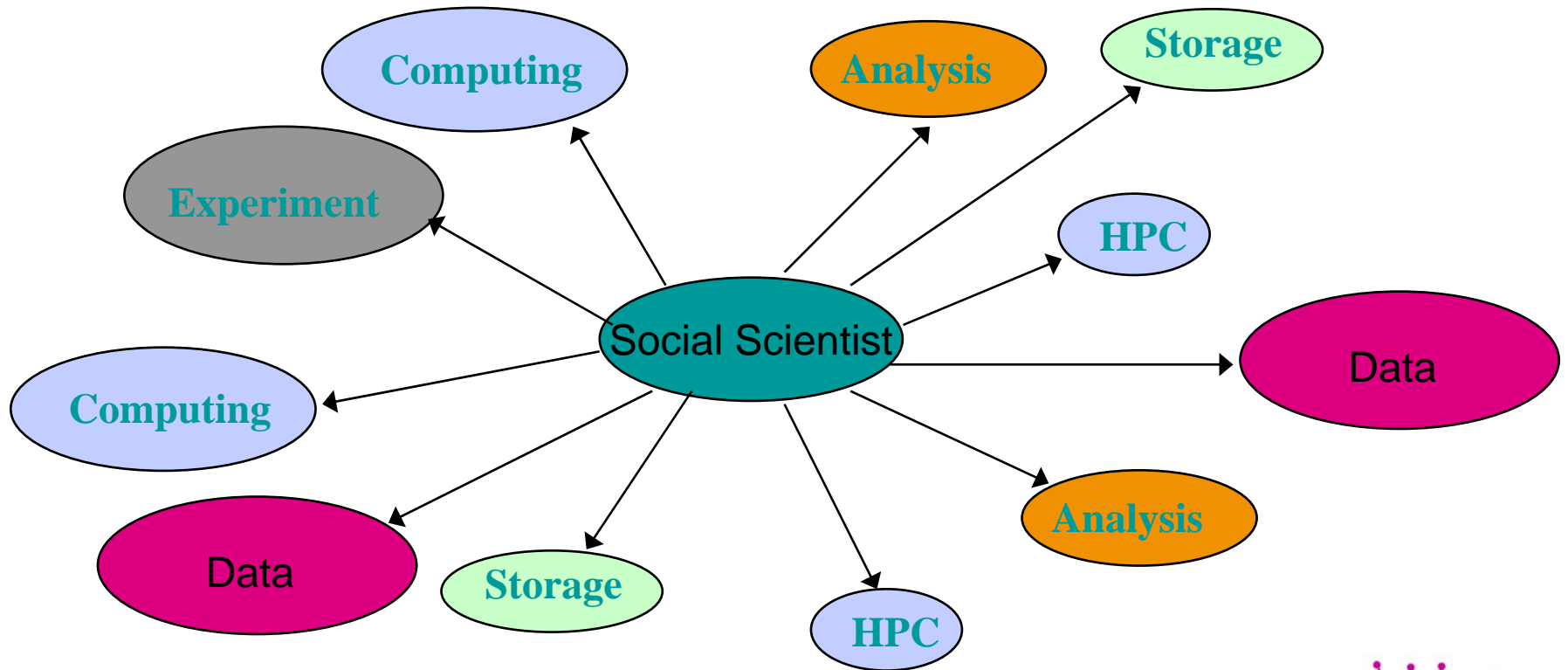
That infrastructure is the **Grid**

The Grid

- “the web on steroids”
- “distributed computing across multiple administrative domains”
- “flexible, secure, coordinated resource sharing among dynamic collections of individuals, institutions, and resources”
- “enables communities (‘virtual organizations’) to share geographically distributed resources as they pursue common goals”

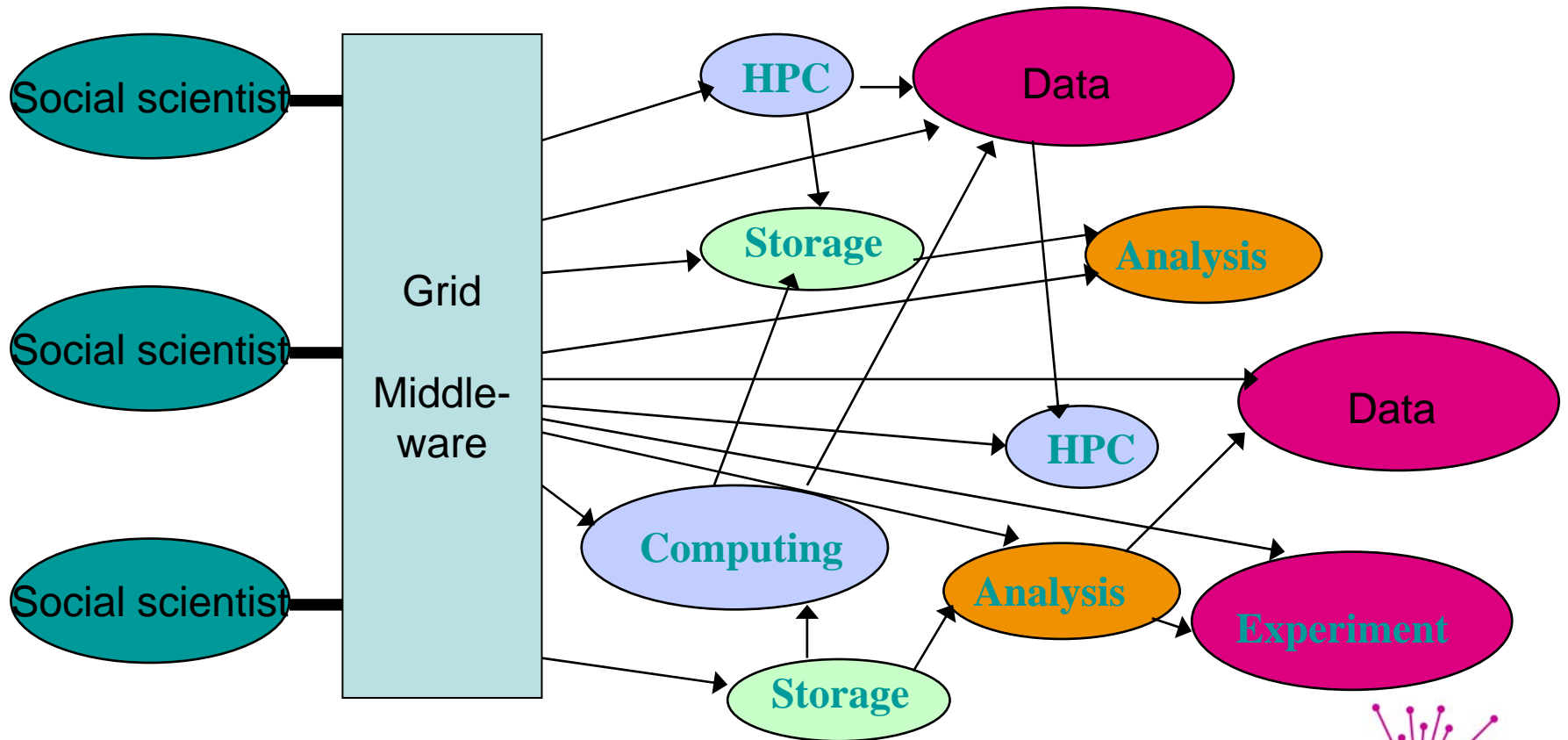
Research Infrastructure Today

Many separate accesses, multiple architectures



Future Research Infrastructure?

Seamless integration of data, analytic tools and compute resources



Key Grid Elements

- Access Grids for collaboration between distributed researchers
- Data Grids for accessing and integrating heterogeneous datasets
- Computational Grids for scalable, high-performance computation
- Sensor Grids for collecting real-time data (e.g., traffic flows, electronic transactions)

Access Grids

- Advanced tool for video-conferencing
- Currently used for seminars and discussions between researchers
- Example of a growing range of collaborative tools – Virtual Research Environments.
- Supporting ‘collaboratories’ – distributed, virtual research centres

ETF Management Meeting



Seminar



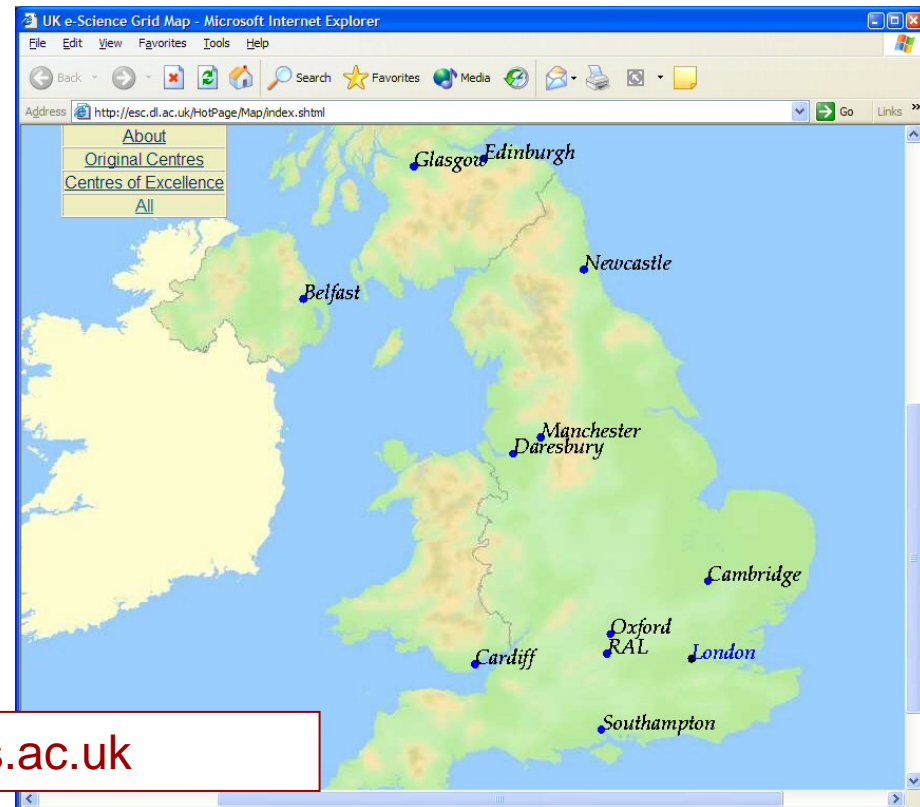
e-Social Science



Performance Art

Computational Grids

- Grid Engineering Task Force (ETF) formed to construct, test and demonstrate UK National Grid Service.
- NGS members include UK e-Science Centres.
- NGS provides access to
 - over 3,000 processors
 - over 36TB of "data-grid" capacity
 - common scientific applications
 - extensive data archives



<http://www.ngs.ac.uk>

ESRC e-SS Strategy

The Main Elements

- Four scoping studies to identify key issues
 - Human centred design and Grid technologies
 - Grid-enabling quantitative social science datasets
 - Qualitative research and e-SS
 - Social shaping perspectives on e-S and e-SS
- 11 pilot demonstrator projects
- Training and awareness activities (with JISC)
 - Fast Track and ReDReSS
 - Agenda setting workshops
- NCeSS

Pilot Demonstrator Projects

1. An Investigation of Disclosure Issues Posed by the Grid
2. Informing Business/Regional Policy: Grid Fusion of Global Data and Local Knowledge
3. FINGRID: Financial INformation GRID
4. An OGSA Component-Based Approach to Middleware for Statistical Modelling
5. Grid-Enabled Micro-Econometric Data Analysis
6. Hydra I Grid Based Spatial Planning Services
7. VIDGRID: Distributed Video Analysis With Grid Technologies
8. Collaborative Analysis of Offenders' Personal and Area-Based Social Exclusion
9. Pilot Semantic Grid Service for Environmental Modelling
10. CONVERTGRID
11. Genealogies of Knowledge-Developing Anthropological Middleware to Support Fieldwork-Based Social Science

Fast Track

- Promoting use of Access Grid
- Key objectives:
 - Empirical study to inform wider social science community about effective use of Access Grid
 - Create learning materials about Access Grid and related collaborative tools
 - Create learning materials use of Grid technologies to solve social science research problems

Agenda Setting Workshops

- Three scheduled so far:
 - Digital Records and Representations of Human Activities; Nottingham, November
 - Video Analysis; London, February/March
 - The role of e-science in supporting new forms of community; Manchester, June
- Four more to be organised over the next 9 months:
 - Theory
 - Quantitative methods
 - Text mining
 - Confidentiality, ethics

NCeSS

- Goals
 - Develop an e-social science culture that pervades the SS research community
 - Establish a leading international centre for e-social science
 - Make e-SS as easy to use as the Web

NCeSS

- Structure
 - Co-ordinating hub at Manchester/Essex
 - established in April 2004
 - three years in the first instance
 - Research-based nodes
 - CQeSS started September 2004
 - 1st phase nodes start in April 2005
 - 2nd phase call to be announced shortly

Role of NCeSS Hub

- One-stop shop:
 - Expertise, training, technical support, data resources
 - Portal – a single ‘front door’
- Disseminate success:
 - Pilot demonstrator projects
 - Training materials
 - Working papers, seminars, conferences, PhD summer school, fellowships
- Foster collaboration:
 - Between social scientists and Grid developers
 - Between node research teams
 - Common software standards

Fundamentals

- Where are the new forms of theory needed in e-SS to come from?
 - Digital data offers increasingly rich pictures of the social but how is this to be understood
- What new methods are needed with the emergence of e-SS?
 - Integrating quantitative and qualitative methods?
- What new forms of community will an e-SS infrastructure realise?
- How do we understand and manage growing volumes of digital data?
- What are the broader ethical, political and policy issues?

Research Strands

- Applications:
 - Substantive social science research problems
 - Enhancing existing areas of research and defining new ones
- Social shaping:
 - Influences on the design, development, uptake and use of Grid technologies
 - Standardisation
 - Socio-economic impact

Developing the e-SS Research Agenda

NCeSS Research Committee

- Node PIs + PDP PIs
- Integrated research strategy
- Collaboration across Nodes and Hub
- Common standards
- Advised by
 - ASWs
 - Social Science Forum
 - Technical Forum

Collaborations

- National Centre for Research Methods:
 - Support research that poses novel methodological issues
 - Facilitate novel methods
 - Promote community building through research networks
 - Encourage online provision of training materials, e-learning
 - Support training in research design.
 - Encourage training in integrated methods

Collaborations

- e-Science programme:
 - Middleware development and standards
 - Grid-enabling tools
- National Data Curation Centre
- National Centre for Text Mining
- JISC Online Repository for [Learning and Teaching] Materials (JORUM)

Capacity Building

- Identifying necessary methodological and technical skills for e-SS
 - Learning from practice
 - Developing demonstrators of success
 - Creating appropriate training materials

How you can get involved

- Small project grants – open date
- Node commissioning phase two
- Access Grid Node competition
- Special Interest Groups
- Visiting fellowships scheme
- Awareness raising workshops
- Conference 22-24 June 2005 in Manchester
- Postgraduate summer school

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