## Grid Computing Now!

**Knowledge Transfer Networks**
A DTI business support solution
Delivered through the Technology Programme

# Grid Computing Now!
# The UK Experience in the adoption of Grid Computing Technologies

## Ian Osborne

## Project Director

## Intellect, London

**+44 20 7331 2054**

**+44 7793 258219**

ian.osborne@intellectuk.org

# About Grid Computing Now!

Knowledge Transfer Networks
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- **A Knowledge Transfer Network project funded by the DTI Technology Programme aimed at transferring knowledge about Grid Computing Technologies to Public and Private Sector Users in the UK.**

- **Partnership between Intellect, the UK Hi-Tech Trade Association; National e-Science Centre, a world leader in Grid Computing research; and CNR Ltd, a consultancy focused on SME organisations and business intermediaries.**

- **Substantial number of industrial, business user and academic partners**

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Knowledge Transfer Network

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## Development of key technologies (KTNs)

To underpin the high value added areas of the UK Economy

To generate new streams of economic activity in their own right

## Development of "innovation platforms"

The integration of a range of technologies, to meet defined societal need

Combined with better co-ordination of policy and procurement instruments to deliver a step change in UK performance
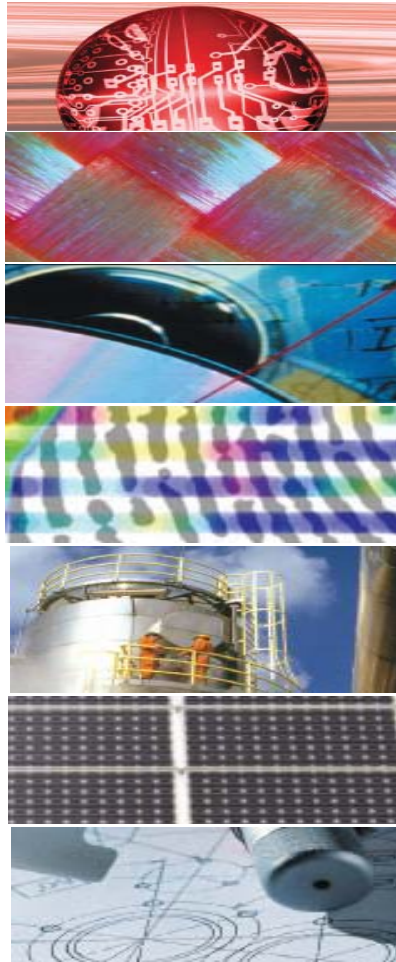
http://www.dti.gov.uk/

# Key Technology Areas

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**Electronics and Photonics**

**Advanced Materials**

**Information and Communication Technologies**

**Bioscience and Healthcare Technologies**

**Sustainable Production and Consumption**

**Emerging Energy Technologies**

**Design Engineering and Advanced Manufacturing**

# Grid Computing Now! Objectives

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1. **Establish wide understanding of the potential of Grid Computing particularly among the IT user community**

2. **Accelerate the recognition of requirements and issues for Grid Computing**

3. **Prepare the UK ICT industry, users and government for Grid Computing**

4. **Follow through the e-Science Core Programme vision in which demanding scientific research stimulates significant advances in Grid technology which are then transferred to UK industry, healthcare and government.**

**The KTN will engage: IT and business leaders, policy makers in central government, regional government, regional development agencies and the devolved administrations, specialist grid suppliers and service providers, e-Science researchers, consultants and business intermediaries to promote grid computing as a foundation for secure, dynamic, virtual organisations to obtain competitive advantage.**

# Grid Computing Now! Activities to date…

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**Website**

Background Information

Industry News/Events

User Case Studies

**Events programme**

Technical Overviews

Multiple vendor perspectives

User Case Studies

**Sector Agenda**

Healthcare; Government;
Telecoms; Services; etc..

**User Community**

Network with peers

Find useful contacts

Contribute experience

**Some Key Facts:**

• **3 yr, £1M/$1.8M Funding**

• **Leading suppliers engaged**

• **Website live August 2005**

• **>500 network members**

• **80% Business**

• **#27 Google "Grid Computing"**

• **600 unique visits/month**

• **90% Returning members**

• **Average visit duration >5mins**

• **14 Case Studies**

• **6 Invited Industry Talks**

• **>20 Target Media Articles**

Funded by Government, Regional Development Agencies, Devolved Administrations and Research Councils

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## What is Grid Computing and the capabilities it holds for business?

–Grid computing harnesses the massive processing power made possible by distributed computing and applies it to business problems.

–It does this through virtualising computers, storage and networking resources such that a grid appears as one large computer.

–A grid computing infrastructure is capable of managing large peaks of work; managing large amounts of processing and automatically adjusting capacity to meet workload.

–When this infrastructure is combined with business systems that allow users to describe their processes, substantial benefits can be obtained.

## What benefits does Grid Computing bring to users?

–Improved Return on Assets

–Increased Scalability

–Business Flexibility & Agility

–Managing IT Complexity

# Tangible KTN Deliverables

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## Short

- Newsletters
- Debates
- Identify technology priorities
- Roadmapping
- Country Reports
- UK Promotion
- Rising % of Target Stakeholders
- Benchmark UK Capability

## Medium

- Inward Investment
- Missions
  - Follow-up Reports
  - Collaboration
- Patenting
- R&D Intensity

## Long

- Growth in UK:
  - output
  - employment
  - Value added
- Standards
- BERD 1.8%GDP

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**Overcoming the Market Confusion!**

It's not just hype!

**Different Business Drivers**

Where is the ROI?

**System planning**

Network, storage, processors

Middleware or application server?

In house, outsource or vendor?

**Migration strategy**

Legacy encapsulation or replacement?

**Cost model**

Accounting

License management

# Grid Computing Now! Plans …

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## Strategy:

- ➢ Engage & Influence IT leadership in Sectors with potential
- ➢ Identify more success stories!
- ➢ Capitalise on collaborative R&D progress
- ➢ Generate media attention
- ➢ Energize community of Grid enthusiasts, experts

## Sector Agenda

Pilot Projects:
- • Government Infrastructure
- • Healthcare
- • Transport

Leverage Collaborative Projects

## Technical Events

Webinars

Face to face Showcase events

## Media

Case Studies

Competition

Industry platforms

# Grid and the Public Sector

**Observations:**

- **Highly relevant as part of a service orientated infrastructure**
- **Major changes underway in e-Government initiatives**
  - Conduct of government
  - Delivery of services
- **Major programmes underway**
  - Eg. Connecting for Health
  - Mostly outsourced/contracted
  - Limited departmental responsibility
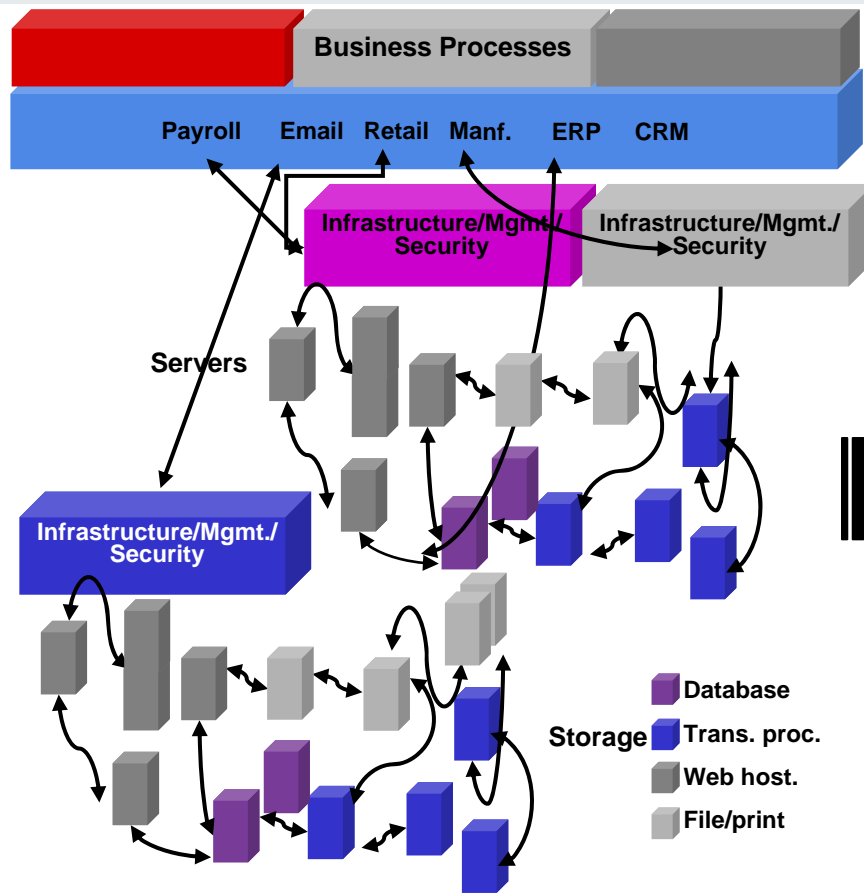
**Nevertheless:**

- **Opportunities of Grid enabled patient innovations**
  - eDiaMoND
  - Cancer Grid
  - Healthcare@home
- **Opportunities in integrated services delivery**
  - Transport Information Services
- **Opportunities in collaboration across outsourced environments**
  - Central & Local Government

# Establishing Business Process Management
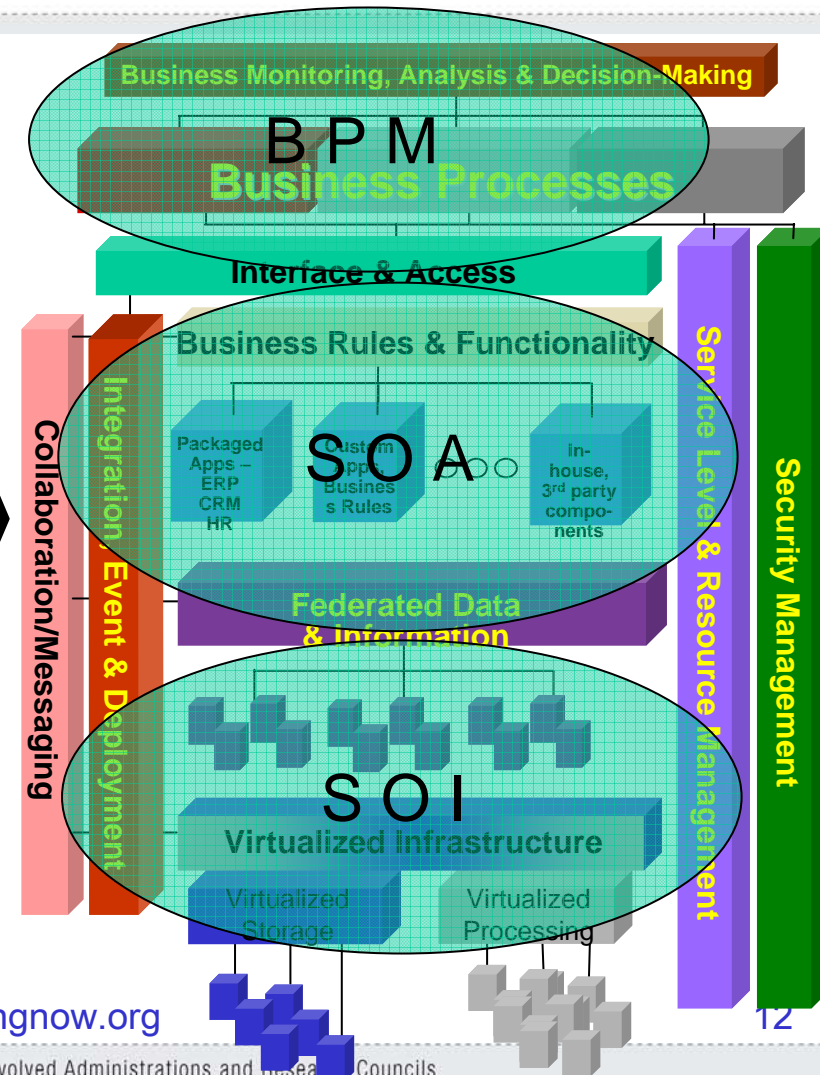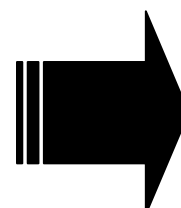
# The Internet, Web & Open Standards are a new wave

## Today's world

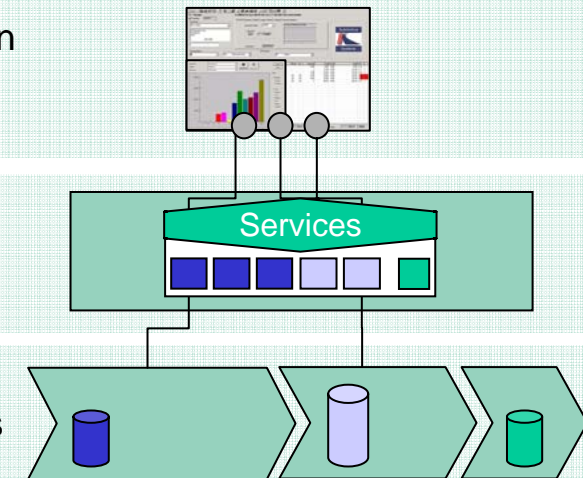**Business scenarios defined within applications**
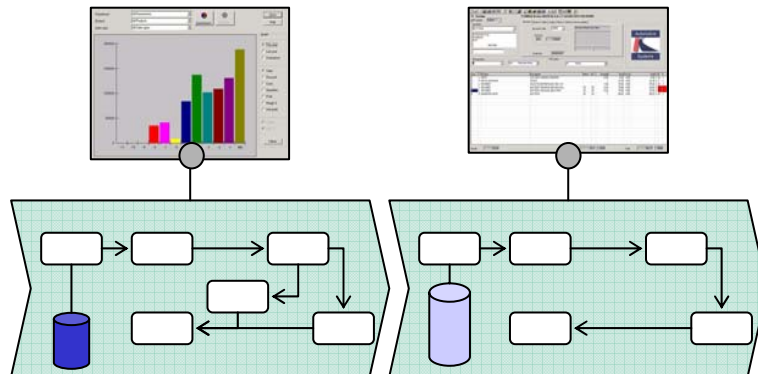


- Processes and business scenarios "hard-wired" within applications
- Hard to make business connections necessary to change and improve processes
- IT's speed of change is limiting factor on business speed of change

## Service Oriented Enterprise

Event Driven Business Scenario
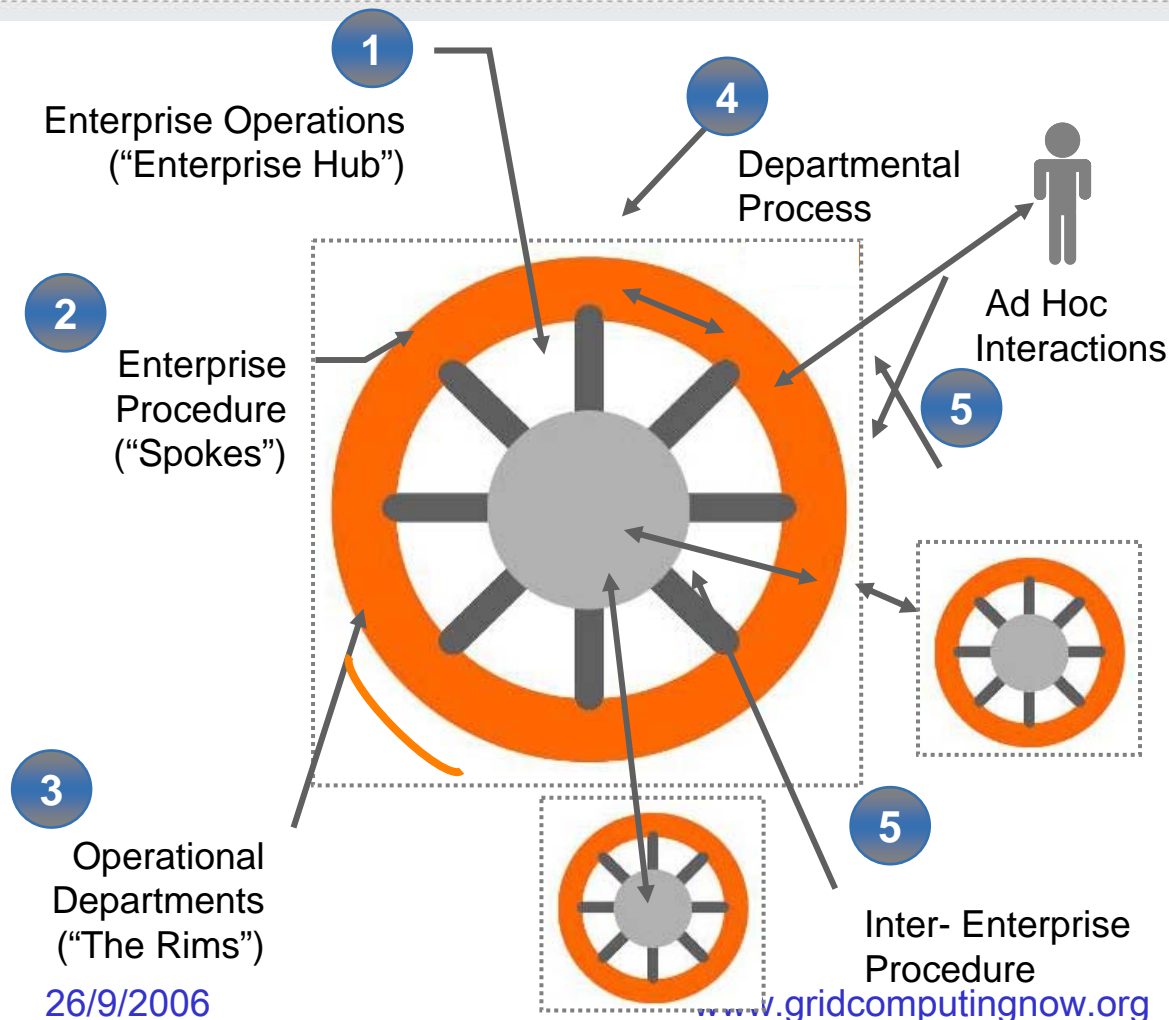
Assembly of Services

Services

Applications



- Extraction of business scenarios and processes from application landscape
- Clear focus on defined services, which are reusable through an assebly of services
- Internal and external users get better access to data in different systems

# Rethinking the role of IT in your enterprise

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Enterprise Operations
("Enterprise Hub")

**1**

**4** Departmental Process

Ad Hoc Interactions

**2** Enterprise Procedure ("Spokes")

**5**

**3** Operational Departments ("The Rims")

**5** Inter- Enterprise Procedure

## Understanding the Hubs and Spokes

1. **Enterprise Operations**: The "Hub" of critical corporate data management and maintenance for CxO level use, auditors, etc…

2. **Enterprise Procedures**: The "spokes" serve as vehicles for delivering data across the company, typically already exist via current ERP systems

3. **Operational Departments**: The "rim" sees many new department specific processes defined by day-to-day activities

4. **Departmental Process**: Essential to individual departments, they provide more value to business owners than to the Enterprise

5. **Inter-Enterprise Procedures / Ad Hoc Interactions**: Additional processes developed to manage daily interactions/ requirements

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**The UK Government has invested heavily in Grid Computing through the eScience programme**

**The Grid Computing Now! KTN is designed to capitalise on this investment and developments in the market**

**We will be measured as successful if we can point to changes taking place in practice**

  **- Adoption of grid computing technologies**

  **- Large network of industrial enthusiasts**

  **- Inputs towards future government investments**

  **- Productivity/Business Improvements underway**