



⇒ **Grid Computing**
Moving from Bits to Business Value

Mike Fisher – BT

- The world is increasingly connected
 - Currently ~1.1bn Internet users
 - 2.7 bn mobile phone users
 - 80-90% of the world with mobile coverage

- Ubiquitous and invisible IT
 - Communications networks changing
 - more than just communication
 - need to integrate IT resources

- Grid technology already delivering in business applications
 - Potential is much greater....
 - Major global investment in infrastructure (NGN)
 - can Grid play a significant role?

NESSI aims to provide a unified view for European research in Service Architectures and Software Infrastructures



- NESSI-Grid is a Specific Support Action for NESSI
 - Develop a vision of the future for Grids and SOA
 - Define a strategic roadmap and research agenda
 - Promote the adoption of technologies by business and industry

- Ubiquitous wide area networking infrastructure is at the heart of everyday life
 - People now expect to be connected – wherever they are, whatever they are doing
 - Care little about the technology involved in achieving this
- IT must evolve in the same direction
 - Provide access to rich application functionality
 - with security, reliability, predictable performance, ...
 - Complexity of technology hidden
- Need an integrated, coherent infrastructure
 - Networks, Computing, Storage, Data, Information,...

“Grid computing is concerned with coordinated resource sharing and problem solving in dynamic, multi-institutional virtual organisations”

Foster, Kesselman, Tuecke “The Anatomy of the Grid”

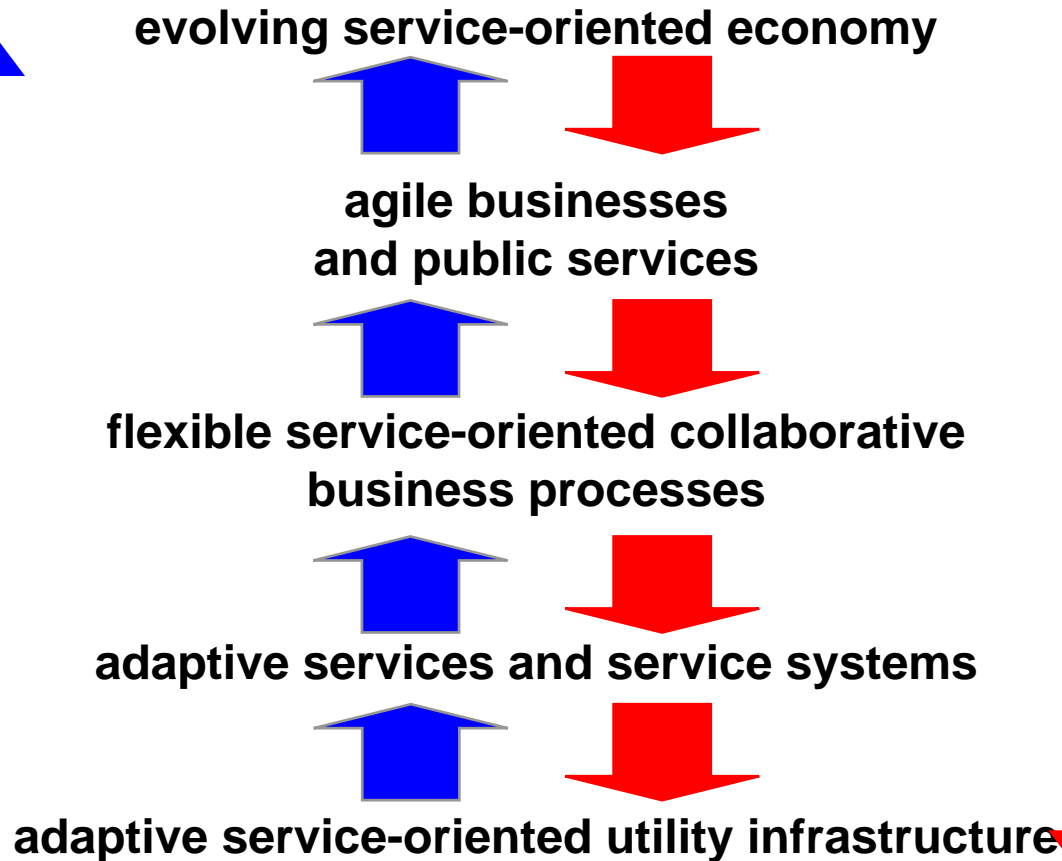
- Key aspects of Grid technology:
 - Utility resources – offered as services
 - Sharing and collaboration
 - Multiple organisations, dynamic relationships

- Key aspects of NESSI’s integrated, coherent infrastructure

- NESSI takes a service oriented approach
- “**Service Oriented Architecture (SOA)** is a paradigm for organizing and utilizing distributed **capabilities** that may be under the control of different ownership domains” OASIS, Aug 2006
- NESSI-Grid uses the term “Business Grids”
 - Adaptive service-oriented utility infrastructure for business applications
 - Will become the general ICT backbone in future economies
- Evolution of Business Grids



Aggregated
information
and
knowledge
accelerate
economy
evolution

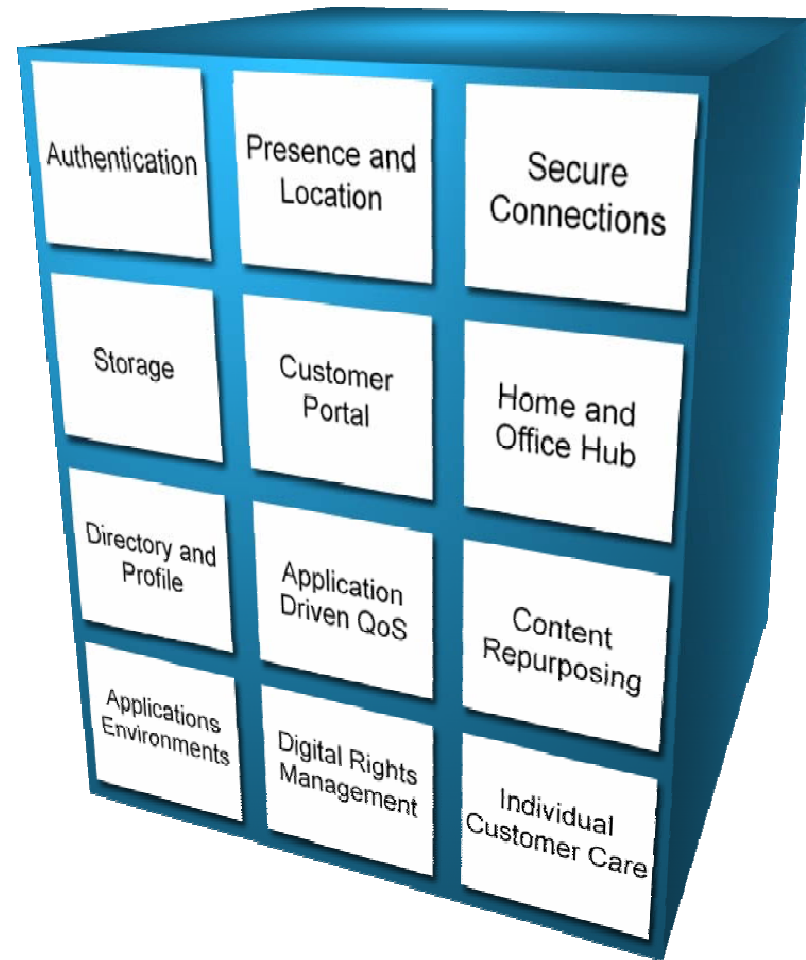


Economy
evolution and
innovation
drive
IT adaptation

- NGN principles
 - Wide range of services, applications and mechanisms based on service building blocks
 - Decoupling of service provision from network, and provision of open interfaces
 - Unrestricted access by users to different service providers
 - ITU-T Study Group 13

- Major investment in NGN is now underway
 - several €100 bn over next decade
- Not just about networks
 - Rich infrastructure for innovative applications

- 21CN: BT's NGN
- Service oriented
- Creating series of reusable, common capabilities
 - for BT and 3rd party applications
 - <http://sdk.bt.com/>
- Increased automation and shorter time to market for new services
- Contribute to cost reduction



- What's needed for Grid to be part of a global infrastructure?
 - Integrated Management
 - multiple viewpoints/stakeholders
 - highly automated
 - coherent approach, encompassing all resources
 - Security
 - Reliability
 - Scalability
 - Interoperability
 - Standardisation
- Need to be ready in the current investment cycle