

Transformational Government Enabled by Technology A response from the Grid Computing Now! Knowledge Transfer Network

Project Manager: Ian Osborne, Intellect
Friday, February 3rd, 2006

The *Grid Computing Now!* Knowledge Transfer Network (KTN) Advisory Council is pleased to have been offered the opportunity to comment on the Transformational Government paper published by the Cabinet Office in November 2005. The *Grid Computing Now!* KTN project is responsible for championing the cause of applying Grid Computing Technologies, including Virtualisation and Service Oriented Architecture (SOA), in the deployment of information technology systems in public and private sector business applications.

Grid Computing Technologies sit at the heart of a modern Information Technology infrastructure. They offer a common, shared platform on which business applications can be executed in a more flexible way, allowing more effective utilisation of computing resources across conventional organisational and data centre boundaries, potentially reducing energy consumption too. Further this platform may be more easily managed and increased in capacity, through the purchase of additional computers, or even dynamically scaled using new on-demand or utility services provided by a range of industry suppliers. These technologies are already in use in several key industries in the UK, notably the Financial, large-scale Engineering and Pharmaceutical industries where they are realising benefits of increased capacity, performance, flexibility and resilience to address challenging tasks at the heart of their businesses.

While there is a perception that Grid Computing Technologies are best suited to compute based tasks, in fact we are seeing a rapid growth of the use of these techniques in transactional systems, most like those used by government and the public sector to deliver on-demand services to UK citizens. In these applications Grid creates the ability to respond to massive peaks of demand through the dynamic, automated allocation and management of resources; a more resilient environment capable of managing component failures and an environment which is more easily exploited for prototyping or trialling new services in a "live" environment.

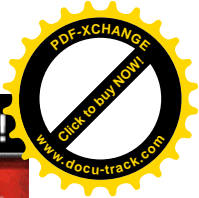
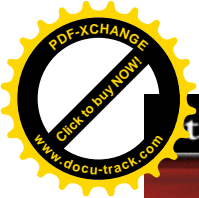
Further, the implementation of a converged computing platform, including properly resourced storage area networks and network communications infrastructure, provides the foundation for the definition and implementation of an architecture for new forms of application which employ dynamic capabilities of the platform in their design. These are generically described as "web services" and the definition of a Service Oriented Architecture provides the capability to underpin more rapid implementation of business applications and end-user services through large scale reuse of service components and dynamic capability to utilise information assets. Such a separation of platform and services can lead to improvements in management and customer focus in deployment, reducing dependencies.

The *Grid Computing Now!* Knowledge Transfer Network is a key industry initiative with representatives from leading ICT suppliers, experienced users and technical experts from the e-Science community with the knowledge and capability to bring these technologies to bear in the realisation of the Transformational Government strategy to the benefit of UK citizens and government.

We believe that we can offer both a strategy for implementation of an effective government infrastructure, enabling a differentiated capability to deliver these results, through our expertise and experience. We include in this the capability to provide the training and support required for Government IT leaders and their staff who will be at the leading edge in project delivery.

Our specific recommendations are as follows:-

- Ø Firstly, develop and implement a plan to **rationalise** the infrastructure used to deliver today's services. How can government data centres be combined to better effect, how can their computer assets be used more effectively leading to improved service quality and resilience? What are the key common components that should be employed to deliver these services and how should their management be improved? We would advocate an approach which exploits Grid Computing



Technologies and encourages standardization of components, consolidation of resources and automation of management to develop this platform.

- Ø Secondly, develop and implement a plan to **migrate** existing applications to the new infrastructure, leaving behind a proportion of legacy applications, possibly to be managed separately for the remainder of their lifecycle, or replaced altogether. This is a major challenge to undertake and an unique opportunity to converge behind a fewer more powerful solutions, reducing the legacy burden over time. There are some key steps and principles to be adopted in accomplishing this. These include assessing which applications are capable of being migrated without significant extra expense in development for marginal benefits. Having a clear set of priorities for cost and benefit and working closely with the IT suppliers should help manage this process more effectively. Another principle we would recommend is to mandate that all new applications are designed with the capability to operate with a Grid infrastructure. Efficient execution of this step will be a key to achieving targets set for reducing IT spend via the strategy.
- Ø Thirdly, we would recommend that a **service oriented architecture** is designed for the provision of future services which can leverage the new infrastructure effectively. This will need to be done somewhat in parallel with steps one and two, such that the new infrastructure will meet the needs of future service development as well as leverage existing capabilities as effectively as possible. The underpinning technologies for SOA are maturing but there are significant opportunities to achieve significant savings in reuse of software and subsequent reduced maintenance cost, as well as the opportunity to introduce new services more rapidly. A good strategy to adopt here is to use SOA technologies to standardize interfaces and orchestration to achieve simpler integration between applications. Identify common functionality, expose it through SOA technology for more widespread use, start planning to develop all new applications using the SOA capabilities. This will require the development and adoption of standard methods and processes which will fit well with the move towards increased professionalism in IT.

The *Grid Computing Now!* KTN is committed to providing access to training events and technical expertise which will help achieve greater awareness of the potential of Grid Computing Technologies and at a more detailed level to deliver the requirements of the strategy to improve the Professionalism of IT practice in Government. Through ensuring an up to date understanding of the development and implementation of a modern computing infrastructure and practice.

This is an important objective for the KTN and we have noted that the Transformational Government proposal highlights the role of the DTI Technology Programme and in particular the Knowledge Transfer Networks as being of importance to keep the standards of government ICT at the highest level. This will be key to developing a leading edge solution to the governments desire to do IT differently!

We believe that the adoption of Grid Computing Technologies will play directly towards the areas of common infrastructure, identity management, technology standards, architecture and data sharing that are highlighted as goals in the Transformational Government strategy. The members of the *Grid Computing Now!* KTN look forwards to playing our role in the execution and success of the.

For the *Grid Computing Now!* Knowledge Transfer Network Advisory Council

Chair: Dave Pearson, Oracle

Contact Details:

For more information please contact:

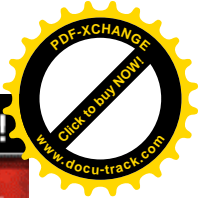
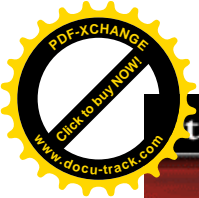
Ian Osborne, Intellect
Russell Square House
10-12 Russell Square
London WC1B 5EE

Ph: +44 (0) 207 3312054

Mb: +44 (0) 7793 258219

Ian.Osborne@intellectuk.org





About IECnet and Grid Computing Now!

IECnet is a collaborative project involving Intellect, the UK Hi-Tech Trade Association, and the National e-Science Centre in Edinburgh. Its mission is to secure UK commercial leadership in the provision and exploitation of Inter-Enterprise Computing (IEC). The project is aimed specifically at exploiting the benefits of grid computing technologies in selected UK public and private sectors through the establishment of a [Knowledge Transfer Network \(KTN\)](#). The project has been funded for 3 years starting in February 2005 and is part of the DTI-funded [Technology Programme](#). Intellect is the lead organisation responsible for project management. IECnet has a sister KTN project GridUK which is aimed at sharing the benefits of Grid Computing Technologies with small and medium sized businesses and business intermediaries. These projects operate publicly under the name [Grid Computing Now!](#) and have a single advisory council with representatives appointed from leading ICT suppliers, experienced users, industry analysts and the UK e-Science programme.

