

From the Director

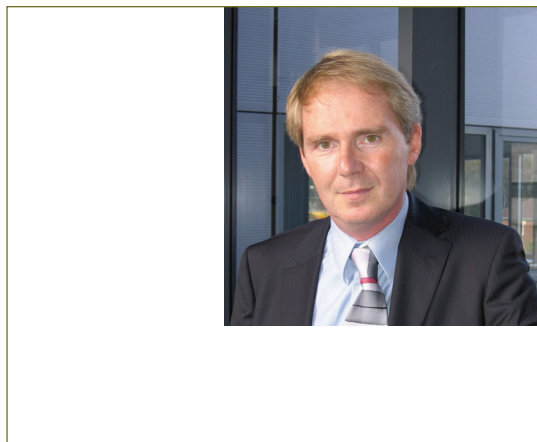
Funded by the UK's Engineering and Physical Sciences Research Council (EPSRC) the Advanced Knowledge Technologies Interdisciplinary Research Collaboration (AKT IRC¹) began in October 2000 with the overall ambition of enhancing information and knowledge management in the age of the World Wide Web. Information is a key resource in the 21st century. The World Wide Web is assuming a pre-eminent role as the global repository for much of this information. Estimates of the amount of indexed information on the web grow exponentially.

The dilemma is that this superabundance of content is now generating a new kind of industrial pollutant – *infosmog*. A consequence of too much information is that people are rendered less capable of making decisions – not knowing what to pay attention to and what information to act on. AKT is about managing this deluge of information and turning it into useable knowledge. It is about identifying the relevant content and enabling its use and reuse.

AKT is producing tools and techniques, systems and infrastructure to help develop the current web so that content can be exchanged, shared and filtered in much more powerful ways enabling elements in the system – man or machine – to receive the right information in the right form at the right time. We need tools and methods that enable us to aggregate and filter, present and visualise what is important about the information being generated on the web. This is the AKT research agenda.

The six year award enabled AKT to concentrate in its first three year phase on the construction of a substantial amount of infrastructure. This can be difficult in the more common format of the three year research projects. Computational infrastructure for the next generation web is as important as new accelerators for physics or sequencers for molecular biology. Infrastructure includes new kinds of database software to hold more expressive descriptions of information content, environments for creating web services for human language processing, frameworks to integrate collections of intelligent web services together. AKT has also developed tools at each part of the information and knowledge life cycle from creation to modelling, retrieval to reuse and publishing to maintenance.

These technologies are now enabling us to build application demonstrators in a range of domains. For example, AKT



has participated in two e-Science funded projects with the aim of using the IRC's results in e-Science contexts². Ideas from AKT have permeated many e-Science projects and the use of controlled vocabularies or ontologies is now widespread.

One of the most striking features of the AKT IRC has been the added value of funding a project on this scale rather than individual awards to individual institutions. This added value has shown itself in a number of distinct ways. Firstly, AKT has been able to influence the course and direction of strategic research initiatives. Secondly, we have been able to secure large additional projects using AKT as the basis of an existing coordinated research activity. Thirdly, the infrastructures mentioned earlier could not have been built and individual partners would not have seen their work influenced by other complementary research. Fourthly, AKT has been able to engage with and influence large standards setting initiatives. Finally the AKT IRC has been a great opportunity to help train a new cohort of scientists. These individuals in their roles as PhD students, researchers and investigators have been exposed to a rich interdisciplinary mix of approaches and ideas. This human capital is more aware of the context within which their work resides. They are able to see the benefits as well as the challenges of working across traditional disciplinary boundaries.

I hope you enjoy our third set of selected papers. It is impossible to include all we would wish in a collection of this size. The general themes we have chosen to represent on this occasion are briefly described in the very first article.

Prof Nigel Shadbolt

¹ The AKT project www.aktors.org is an Interdisciplinary Research Collaboration (IRC) between the Universities of Southampton, Aberdeen, Edinburgh, Sheffield and the OU.

² The CoAKTinG project www.aktors.org/coaking and MIAKT www.aktors.org/miakt projects.