# *Balliol's Oxford Internet Institute: Understanding the Internet's Web of Technology and People*

*By William Dutton, Fellow and Director, Oxford Internet Institute*

From the outside, Balliol College's No 1 St Giles retains its historic charm at the heart of Oxford. Inside, however, it is being transformed into the home of a global centre for one of the most dynamic areas of contemporary social research: understanding the wide range of community, economic, political, organisational and other factors shaping the Internet and its social implications.

This exciting prospect for the Oxford Internet Institute (OII) has its roots in the creativity of those at the University, particularly the Master of Balliol, Andrew Graham, who originally conceived its ambitious mission. They envisioned an Institute that would study the Internet as a phenomenon that goes far beyond its basic technical role of interconnecting computers and opening access to digitised information. Their concept became a reality in 2001 through a generous endowment from The Shirley Foundation, augmented by a grant from the Higher Education Funding Council for England.

Located in Balliol College, with which it maintains a special relationship, but designed as an independent unit within the University's Social Sciences Division, the OII can attract and draw on the talent of Oxford's other colleges and divisions to enrich the work of our own researchers. This positioning within the University gives the Institute a unique opportunity to take a world lead in the emerging area of Internet studies, in which there is a burgeoning range of conferences, journals and research initiatives.

## *Understanding the social dynamics of technological innovation*

The OII has a distinctive perspective: an emphasis on the social dimensions of the changes tied to the use of the Internet and other information and communication technologies (ICTs). This is derived from the Institute's founding vision that all technologies, particularly those as complex as the Internet, are inherently social in that they are designed, produced, used and governed by people.

At its basic level, the Internet is indeed a set of technical standards and capabilities that enable a 'network of networks' to interlink ICTs, including computers of all sizes and a variety of mobile consumer devices and electronic multimedia. The most visible aspects of the Internet are also technological: for example the tools that enable searches to be made through billions of pages of information on the World Wide Web or e-mails to be sent to colleagues and friends.

However, as I argue in my book *Society on the Line* (OUP 1999), social research on technology has shown how the use of the Internet and its constituent and interlinked technologies form an intertwining, co-evolving web of people, social structures and technologies that will continue to grow in scale and importance. The paths opened by the Internet are therefore determined not by technological capabilities alone, but through a multitude of intricate social processes in which a diverse array of actors with varied goals participate in a rapidly evolving 'ecology of games'.

This indicates that the Internet is about more than just equipment, and that the control of the Internet and related technologies is bound up with broader issues of who has access to the skills, equipment and knowhow essential to produce, use, consume and govern the relevant technologies. Through this web of people and technology, the Internet can redistribute the relative 'communicative

power' of different actors in households, communities, workplaces and society at large by reshaping access not only to information, but also to people, services and technologies (see Table 1 below).

By emphasising the Internet's crucial communication role in reconfiguring access, this view challenges dominant perspectives on the centrality of information, such as the long-held perception that ICTs reinforce the notion that

| Access to | Kind of activities | Examples |
|---|---|---|
| **People**<br>*The Internet shapes who you communicate with, who you know, and where and when you communicate with them.* | Communication with individuals, groups, multitudes: one to one; one to many; many to many; one to millions. | E-mailing; collaborative online working (eg in a scientific 'collaboratory'); online publishing; virtual 'chat rooms'; personal Website diaries by 'bloggers' (e.g. from Baghdad during the Iraq war); contacting old school friends; online game playing; groups contacting others around the world with similar interests and experiences (e.g. with similar health problems). |
| **Services**<br>*The Internet influences what you consume, where and when you buy (and in some cases) consume it; who pays what to whom; and how it is paid.* | Conducting electronic transactions and obtaining electronic services from distant or nearby sources. | Online shopping and home banking; booking a theatre seat or holiday; e-commerce links in supply chains between purchasers and suppliers; villagers in a developing country getting online medical advice or participating in a distance-learning virtual classroom; a doctor viewing an X ray in another location; 'downloading' music and video directly via the Internet. |
| **Information**<br>*The Internet affects what you read, hear, see – and know.* | Storing, retrieving, analysing, printing and transmitting facts, statistics, images, video, sounds, etc. | Doing a Web search to help academic research, check a plane time, look for a job, etc; reading online news, watching TV and listening to or producing Internet radio from near and far; accessing a corporate database on a private 'intranet' within a company. |
| **Technologies**<br>*The Internet shapes access to other ICTs.* | Producing, using and consuming ICT knowhow, equipment and techniques that shape access to, and use of, the Internet and other ICTs. | Telecommunications and Internet infrastructures; broadband high-performance links; wireless network connections; new digital media; 'browsers' to find information in Web searches; network security and software virus safeguards. |

*Table 1: How the Internet reshapes access to a web of people and technology (adapted from Dutton (1999): Table 1.1, p5)*

'information is power'. Gaining and communicating a better understanding of the role of ICTs in reshaping access lies at the heart of my research within the OII.

## *Why the Internet is not a passing fad*

The OII's broad social perception of the Internet helps to make sense of why the Internet has continued to grow steadily, despite some predictions of its demise because of the dramatic crashes around the turn of the century in the telecommunications industry and among 'dotcom' companies whose businesses were based around the use of the Internet. In April 2003, for instance, 43% of UK households had access to the Internet, over twice the number in 1999.

An appreciation of the essentially social nature of the Internet indicates that the 'bursting of the dotcom bubble' was not a crash of the technology. It was a market failure resulting from poor business and financial decisions, based on an inadequate conception of the users of the services and products being offered. It also exemplifies the risk of failing to understand the inseparable intertwining between technological, organisational and social change.

## *Targeted research areas*

The OII is dedicated to conducting world-class research that identifies and analyses the underlying social processes that shape key local, national and global outcomes tied to Internet access, such as social cohesion, economic growth and the opening of many new opportunities to citizens and consumers. This focus puts us in a strong position to build on the UK's lively tradition of contributing to the creation of a body of well established, evolving knowledge derived from social research on the relationship between technology and people.

Since its founding two years ago, the Institute has created a strong management structure and academic underpinning to implement a strategy to realise its founders' ambitions. High-quality research will underpin all our work. We are aware of the vast array of possible avenues and topics we could pursue, and so we are targeting our resources to five main research topics in areas critical to the public interest which can be anchored in the strengths of our academic staff.

These five initial OII research focal points are: governance, including issues of e-Democracy; learning and education across all levels; science, particularly issues of e-enabled collaboration; society and the Internet, including the household, community, workplace and e-commerce; and policy issues that cut across all of these social settings. At the same time, we are alert to the importance of remaining open and flexible to take new directions, as we pursue the best ideas of professors, fellows and students.

## *Governance in an e-Democracy*

In 2002 the OII gained the support of Cisco Systems UK for a programme of research on e-Democracy, enabling the Institute (in affiliation with Jesus College) to establish what we believe to be the first professorship devoted to examining the role of new electronic media designed to support the democratic process. The OII's Cisco Visiting Professor of e-Democracy, Stephen Coleman, is seeking to determine how the Internet can be used most effectively to re-engage citizens with democratic processes. In one longitudinal study, he is examining how UK parliamentarians and their staff use the Internet and other ICTs to engage more closely with citizens, for example through initiatives such as the taking of evidence for Parliamentary Select Committees over the Internet. Other OII e-Democracy research will explore critically the benefits and problems of e-Democracy in action, in many local, national and transnational contexts, such as was the focus of an OII-organised debate over the wisdom of remote Internet voting, held at the Oxford Union in 2003.

## *Innovations in education and learning*

The OII has a cluster of scholars interested in the role of innovation in all areas of education and learning using new media, online links and other emerging 'e-learning' capabilities. For instance, my own work (*Digital Academe*, edited with B Loader, Routledge 2002) on new media in higher education and learning has highlighted many social

and institutional constraints on genuinely new approaches to teaching and learning. Complementing work in higher education, the OII and Oxford University's Educational Studies Department are jointly examining the impact of the introduction of high-performance broadband Internet access into Oxfordshire schools. Peter Birmingham, an OII Educational Studies Research Officer, is studying the interaction of students, teachers and broadband applications to understand how best to observe and analyse the mechanisms linking the use of new learning technologies to such potentially elusive educational objectives as creativity.

### *ICT networks in scientific research*

The foundations of the Internet were laid in academic research environments. These continue to pioneer crucial advances in Internet technologies, such as the 'Grid' that is being used in the UK Research Council's e-Science programme as a means of sharing enormous computing resources among huge numbers of users.

OII activities aimed at examining the implications of this kind of 'e-Science' environment for researchers includes a collaborative Joint Information Systems Committee project led by OII Senior Fellow Professor Paul David. This is examining policies related to intellectual property rights (IPR) and other legal aspects of institutional infrastructures that might facilitate or constrain e-Science work. Results from these studies will have wider relevance as the Grid is beginning to be applied commercially to many other activities.

We are also examining the nature of e-Social Science developments in depth. For instance, our first Visiting Research Fellow, Dr Chris Mann from Cambridge University, highlighted the extent to which the Internet might affect, in new forms, some traditional ethical issues in social science research, including the confidentiality rights of participants in social research.

### *e-Society: the Internet in everyday life*

Illuminating the implications of Internet use on personal interactions in the household, community, work, commerce, the arts and entertainment is another crucial aspect of the OII research strategy. This involves examining the implications for both the 'real world' contexts of Internet use and for 'virtual' communities that come into being through ICT-enabled interactions – and the interaction between real and virtual worlds.

Our flagship project here is a major nationwide survey headed by Professor Richard Rose, OII's Senior Fellow in Governance, which is building a detailed picture of who uses (and doesn't use) the Internet, how they use it (and why some don't), and what difference such use makes to individuals, families and the wider world. Called the Oxford Internet Survey (OxIS), this project places what is happening in Britain in a global context as it is part of the World Internet Project, a collaborative set of surveys in more than 20 countries on four continents. This typifies the OII's goal of conducting as many studies as possible from comparative cross-national perspectives.

OxIS will be complemented by a programme of qualitative research on specific social issues, such as how households cope with unwanted commercial e-mail (so-called spam), and on particular categories of Internet users, such as broadband households, which cannot be studied in as great of depth through survey research. Focus groups, and interviews can help us better interpret the results of surveys and suggest themes and issues that might not otherwise emerge from the analysis of quantitative data.

### *Cross-cutting issues of theory, policy and practice*

The OII is actively pursuing a number of issues that cut across, and therefore tie together, the Institute's other research priority areas. The way standards affect technical choices is a cross-cutting issue that is a specialisation of Professor David.

Another is Digital Rights Management (DRM), which deals with IPR and copyright in digital media. In addition to being studied by Professor David in his e-Science project, DRM is being explored from a variety of perspectives by other OII researchers: for example, OII Visiting Research Fellow Peter Davies is developing an even-handed analysis to help policy makers resolve major

DRM conflicts between groups with competing interests, such as Hollywood and the music industry who want to protect their creative output versus consumers and others who would prefer as much open access as possible via the Internet.

## *Influencing policy and practice*

An important aim of the OII is to ensure its academic research informs and influences national and international policy and practice. We are seeking to achieve this by engaging directly with a wide range of potential users and beneficiaries of our research, for instance through 'policy research forums' that bring together academics from universities in the UK and abroad with representatives from business, industry, government and non-governmental organisations to discuss key issues and foster collaboration.

The first forum, 'Broadband Divides', was held in Oxford University early in 2002. Broadband provides high-performance links that can support Internet-based services and applications such as the Grid, distance learning and live TV news, which cannot be delivered effectively with slower telecommunications connections. Over 30 distinguished Forum participants from the UK and abroad discussed the policy implications of the spread of this service. Wide-ranging debates at the Forum emphasised that broadband could create or exacerbate severe disadvantages to any individuals and social groups who are cut off from the benefits available to those who do have the appropriate access. Participants strongly reinforced the view that such access must be seen as including the knowledge, skills and resources to exploit broadband availability, not just physical technological links.

The divides within and between countries that broadband could affect were shown to include those based on wealth, education, political engagement, employment prospects and health. Recommended approaches to creating an equitable environment in which divides are likely to be narrowed rather than widened included the creation of a legal and regulatory framework to promote wider use of broadband while protecting those vulnerable to potential abuses through the Internet, for instance in relation to DRM regulations. The relevance of the OII research strategy to informing and shaping these kinds of policy debates was illustrated by contributions at the Forum from Institute staff drawing on OII research on education, e-Democracy, e-Society, DRM and underlying analytical concepts, such as the Internet's role in shaping access to people, services, information and technology.

## *A comprehensive overall strategy*

In addition to its research programme, the OII has three other strategic goals: teaching, collaboration and what we call 'net-working', *i.e.* using the Internet in a myriad of imaginative ways to support our new networks of collaboration with academics, practitioners and policy makers in government and industry around the world. The Institute's planned programme to strengthen our research team includes the appointment of two new professorships, one in 'Society and the Internet' (with Mansfield College) and the other in 'Internet Governance and Regulation' (with Keble College).

In the long term, teaching might well become our most important channel for furthering understanding of the societal implications of the Internet. We regard a variety of multidisciplinary collaborations, with social scientists always among the core researchers, as essential to address the fragmentation and diversity that arises from the way issues tied to the Internet cut across many social, economic and technical disciplinary boundaries. Net-working is so crucial to our work that having exceptionally qualified technical and Web officers is regarded as central to our academic mission.

We are not wedded to one approach to our research and will foster quantitative as well as qualitative studies. Innovative approaches that question the taken-for-granted assumptions about the societal implications of the Internet will be fostered. We do emphasise empirically anchored specific cases and settings, such as broadband in Oxfordshire schools, but also always seek generic insights of relevance to a worldwide audience. Developing

powerful analytical frameworks to provide sound insights is one of our important research aims.

Maintaining Oxford University's respected tradition of independence from government or commercial influence will of course be vigorously pursued. This will not be accomplished by being distant from government and industry, as they also need and value independent, disinterested research. Instead, we will develop patterns of support and collaboration that free the OII from being too dependent on any one source of support.

## *Teaching plans*

By 2007, the OII should be contributing to the academic vitality of student life at all levels within the University. In the shorter term, we will focus on initiatives such as the OII's Summer Doctoral Programme, inaugurated in July 2003. In its first year, the programme was fully booked with over two dozen students from over a dozen countries coming to work with leading Internet and ICT scholars from around the world. The Soros Foundation's Open Society Institute supported five students from less affluent countries to attend this programme, enabling it to be more diverse and international than otherwise possible.

The OII is also investigating how it can contribute to the Master's level curriculum at the University and is vigorously developing its doctoral activities. We are also engaging in a variety of other educational activities, from small, informal research seminars open to students and the public to major international conferences and experiments with innovative mechanisms for reaching new audiences through the Internet.

*Students in new seminar room at 1 St Giles attending the first OII Summer Doctoral Programme, 2003*

## *Finding out more*

If you would like to find out more about the work outlined here and keep in touch with our future progress, please write to us at No 1 St Giles, OX1 3JS, e-mail: director@oii.ox.ac.uk or explore our website: *http://www.oii.ox.ac.uk*.