Digital Futures:
e-commerce and sustainable development

Doctor in Professional Studies

Final project submission - Module DPS 5180

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Contents

Executive summary

This report comprises a critical commentary and appraisal of my DProf project "Digital Futures: e-commerce and sustainable development". It should be viewed alongside the evidence of achievement from the project. There are six items of evidence contained in the project folder alongside this report:

1. A brochure produced for the project launch on 1 February 2000

2. "Mind over Matter" – a pamphlet by Charles Leadbeater published part-way through the project in September 2000 (Leadbeater, 2000)

3. "Dot-com ethics" – a pamphlet by James Wilsdon published part-way through the project in January 2001 (Wilsdon, 2001)

4. A brochure produced for the final project conference on 1 March 2001

5. A summary report, which draws out the cross-cutting conclusions and recommendations (Wilsdon & Miller, 2001)

6. *"Digital Futures: living in a dot-com world"* - a book containing the full research findings of the project (ed. Wilsdon, 2001)

The overarching aim of the Digital Futures project was to investigate the complex web of issues surrounding e-commerce and sustainable development, and recommend ways in which government and business could maximise the sustainability benefits, and minimise the costs, of the emerging digital economy.

The project drew together a consortium of government departments, companies, think-tanks and research organisations. Its formal activities ran from 1 October 1999 to 1 March 2001, and consisted of three main phases:

Phase 1 (1 October 1999 – 31 January 2000)

- A detailed scoping paper was prepared on the key issues relating to e-commerce and sustainable development.
- A consortium of think-tanks and research organisations was established to undertake research into the various aspects of the debate.

- Fifteen corporate partners were recruited to support the project, and participate in the research process.
- UK Government support and funding was obtained for Phases 2 & 3.

Phase 2 (1 February – 15 September 2000)

- Each of the eight research organisations was commissioned to produce a detailed paper on a particular theme.
- Detailed research was carried out using a variety of methodological approaches (desk-based analysis, interviews, opinion polling etc.)
- Project partners in government and business were actively involved in the research to ensure it reflected a diversity of views.

Phase 3 (16 September 2000 – 1 March 2001)

- A series of workshops were held with project stakeholders, to discuss the research findings of Phase 2.
- The eight research reports were edited into a book.
- A summary report was written, drawing out the main conclusions and recommendations.
- A one-day conference was held on 1 March 2001 for 200 decision-makers from government, business, academia and the voluntary sector.

My role within the project was that of overall co-ordinator and editor of the book and summary report. I was also the lead researcher on one of the eight research themes. Whilst the project was underway, and in the year that has elapsed since its formal completion, I have been reflecting on the lessons learned. This report is a critical commentary based on that process of reflection. It consists of an introduction to the project, an outline of its aims, objectives and methodology, an account of the project's main activities, and full details of the project's results and conclusions.

The main outcomes of the project were a book and summary report (see evidence of achievement), which offered the first comprehensive analysis of the relationship between e-commerce and sustainable development. The third significant outcome of the project was a one-day conference exploring these issues. The project also led to a range of follow-up research and practical activities, which are detailed in the final chapter. The final chapter also includes a reflection of the impact the project has had on my sphere of professional activity, and on myself as a researcher and practitioner.

1. Introduction & project context

'E-commerce could play a key role in promoting sustainability, but it is important that we assess the opportunities in a systematic and balanced way. I am pleased to be supporting Digital Futures, and hope it will make a real contribution to Government and business thinking about the digital economy.'

Rt Hon Patricia Hewitt MP, Secretary of State, Department for Trade and Industry[1]

The Digital Futures project was launched just as the dot-com frenzy of 1999 was approaching its peak, and ran through until March 2001, by which time much of the "irrational exuberance" (Shiller, 2000) surrounding the e-economy had settled into a more balanced appreciation of the ways in which digital technologies are likely to transform our economy and society. The project was significant for three reasons:

i)	It represented the first attempt in the UK or internationally to explore the relationship between e-commerce and sustainable development.

The period in which the Digital Futures project was being developed and launched (October 1999 – April 2000) was characterised by an unprecedented degree of excitement and enthusiasm amongst policy makers and the business community for the economic and social potential of digital technologies and e-commerce.

Into this febrile mix, a group of think-tanks, led by Forum for the Future, launched the Digital Futures project. Our aim was to examine e-commerce through the prism of sustainable development: to assess the mix of economic, social and environmental costs and benefits that might arise from the growth in the digital economy. In putting the project together, we were not primarily concerned with whether the e-commerce reality would ultimately scale the heights predicted by market analysts such as Gartner and Forrester.[2] The fact that so many businesses and politicians were taking e-commerce seriously was enough to justify an exploration of its wider implications for sustainable development.

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[1] Patricia Hewitt speaking at the launch of the project at the Fabian Society conference on 'Environmental Modernisation', 1 February 2000

[2] At the height of the dot-com boom, estimates of the future size of e-commerce markets varied wildly, with most analyst projections ranging from $50 billion to $100 billion by 2005 (De Kare-Silver, 2000)

In this way, we sought to challenge the mould of conventional policy-making around sustainable development. Instead of waiting for this new marketplace to reach maturity, and then attempting to retro-fit measures to address social and environmental concerns, we wanted to incorporate sustainable development principles at the design stage. As we argued at the time: "With a mixture of vision, imagination and intelligent policy, it should be possible to splice sustainability into the DNA of the new economy" (Wilsdon & Miller, 2001).

The project represented the first attempt to explore these issues in the UK or internationally. Although a number of researchers published work toward the end of the 1990s on the environmental impacts of information and communication technologies (see for example Cairns, 1999; Hopkinson et al. 1999; Romm, 1999), the Digital Futures project was novel in two ways:

- It focussed on e-commerce, as a wider economic activity, enabled by the growth of the internet and network technologies. E-commerce only became widespread in 1998, and even now, it is considered by most commentators to be still in its infancy (Castells, 2001; Lewis, 2001). By launching the project at the end of 1999, we were contributing to a debate that was only then getting underway. It would have been difficult to launch the project earlier than 1999 as e-commerce wasn't yet widely discussed or understood.

- It adopted an integrated approach to sustainable development, and its implications for e-commerce. The term "sustainable development" first entered widespread use following the Brundtland Report of 1987, which defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). The debates around definitions of sustainable development are explored more in chapter 2, but in its use within public policy it is commonly understood to involve balancing economic, social and environmental concerns (Christie & Warburton, 2001). It was this challenge that lay at the heart of the Digital Futures project: how to analyse e-commerce in terms of these different aspects of sustainable development.

ii)	It brought together a diverse consortium of partners from government, business, academia and the voluntary sector.

As well as being the first study of these issues, the Digital Futures project was significant for the way it involved a broad consortium of partners. The project started within Forum for the Future, the sustainable development charity run by Jonathon Porritt and Sara Parkin. But it was clear from the start that if the project was to have the desired impact on policy and practice, we would need to involve a wider circle of partners, both to fund the project and to assist with the research.

After an initial scoping phase, which identified a range of research avenues within the broad map of issues relating to e-commerce and sustainable development, Forum for the Future invited a number of other think-tanks and research organisations to lead a particular strand of the research. The selection and recruitment process is described in more detail in chapter 4, but the eventual consortium was as follows:

Figure 1: The eight research themes

Research Organisation	*Theme*
Green Alliance	Mind over Matter: greening the new economy *Lead Authors: Charles Leadbeater & Rebecca Willis*
SPRU, University of Sussex	E-topia? Scenarios for e-commerce and sustainability *Lead Authors: Frans Berkhout & Malcolm Eames*
Forum for the Future	Dot-com ethics: e-business and sustainability *Lead Author: James Wilsdon*
Demos	Surfing Alone? e-commerce and social capital *Lead Authors: Ben Jupp & Tom Bentley*
New Economics Foundation	Sink or surf? Social inclusion in the digital age *Lead Authors: Alex MacGillivray & David Boyle*
Local Futures Group	Towards the sustainable e-region *Lead Authors: Ian Christie & Mark Hepworth*
UK CEED/University of Bradford	Virtual traffic: e-commerce, transport and distribution *Lead Authors: Peter James & Peter Hopkinson*
Town & Country Planning Association	Bricks versus clicks: planning for the digital economy *Lead Authors: Simon Marvin & Andrew Gillespie*

In parallel to this process building up the research team, we secured the involvement of three government departments – the Cabinet Office, Department of Trade and Industry (DTI) and Department for the Environment, Transport and the Regions

(DETR) – who offered not only political support, but £100,000 of initial project funding.

By this point, the project had a momentum of its own, and it proved relatively straightforward to attract the support of a group of fourteen additional partners, drawn mostly from the corporate sector:

Amazon.co.uk
AOL Europe
BT
BP
Ericsson
Kingfisher
The Post Office
NatWest
Nationwide
Royal & Sun Alliance
South West Regional Development Agency
Sun Microsystems
Unilever
WH Smith

Each of these partners provided an additional £15,000 of project funding, bringing the total budget to approximately £300,000.

This type of cross-sector collaboration in the field of sustainable development is rare, especially around an emerging issue such as e-commerce. The breadth of involvement from government and business gave the project more weight, and heightened interest in its outputs. It was particularly notable for involving companies such as Amazon and AOL, which up until that point had not participated in UK debates around sustainable development or corporate social responsibility.

The unusual nature of the partnership attracted attention in some high places. Tony Blair, in the first environmental speech of his premiership in October 2000, acknowledged that:

> "Increasingly, NGOs are putting more and more energy into offering solutions in partnership with business and government...For example, fourteen companies, eight NGOs and three Government departments are working

together on the Digital Futures project, to try to ensure that the e-commerce revolution happens in the most environmentally friendly way possible."[3]

Patricia Hewitt, then e-Minister and now Secretary of State at the DTI, also said in a speech at the time:

"For me, the strength of the Digital Futures consortium has been its breadth; ranging from internet businesses and government departments to academics and think tanks. It's a model that I think should be replicated when dealing with other equally complex issues."[4]

iii)	It sparked a debate amongst policymakers and encouraged new players to participate in conversations and practical actions towards sustainability.

The Digital Futures project aimed to provoke questions as much as provide answers. Given the rapidly evolving nature of digital technologies, the immaturity of e-commerce markets, and the inherent complexity of sustainable development, it was never expected that the project would come up with a fixed, definitive view of the sustainability of e-commerce. Instead it sought to set the debate in clearer terms, and to highlight ways in which the development of e-commerce could better be assessed against the main criteria of economic, social and environmental sustainability.

Because of this, the formal outputs from the project – the book, the report, the conference – were arguably less important than the more informal goal of engaging new audiences and constituencies in thinking about and addressing the policy and practical challenges involved in creating a more sustainable digital economy.

Through the various strands of the project, we set out to reach and influence a number of distinct communities of policy and practice:

- Policy makers concerned with sustainable development: Ministers, advisers and officials within the DETR and DTI; environmental non-governmental organisations (NGOs) such as Greenpeace and Friends of the Earth; development NGOs such as Oxfam and Save the Children; corporate sustainability managers.

[3] Tony Blair Speech to the CBI/Green Alliance, 24 October 2000
[4] Patricia Hewitt, Speech to the Digital Futures conference, 1 March 2001

- Policy makers involved with the knowledge economy and e-commerce: Ministers and officials in DTI, the Cabinet Office and the No.10 Policy Unit; the Office of the e-Envoy; think tanks such as the Institute for Public Policy Research and the Industrial Society; industry groups such as the Confederation of British Industry.

- Business leaders involved in e-commerce and the digital economy: senior managers in large ICT firms such as BT, AOL and Sun Microsystems; entrepreneurs such as Martha Lane Fox (founder, lastminute.com) and Tim Jackson (founder, QXL.com); "new economy" networks such as First Tuesday.

- Policy makers concerned with corporate social responsibility: CSR managers in companies; NGOs such as AccountAbility, Centre for Tomorrow's Company and New Economics Foundation; academics such as Warwick University's Centre for Corporate Citizenship; consultancies such as Good Business, ERM and SustainAbility.

As summarised below in chapters 5 & 7, the project was successful in reaching these and other audiences. It also fed into a number of follow-up initiatives in the UK and internationally.

Personal context: a brief overview

How did I become involved in the project? And why did I decide to make it the basis of my DProf?

In September 1996, three months after graduating from Oxford University, I became one of the first group to undertake Forum for the Future's scholarship programme, a work-based Master's programme, run in conjunction with the National Centre for Work Based Learning Partnerships at Middlesex University. This one-year programme involved a mix of academic study and intensive work placements in six different sectors (NGOs, local government, central government, business, finance and the media). On completing the programme, in July 1997, I was awarded an MProf in sustainable development from Middlesex.

Following the scholarship year, I joined Forum for the Future full-time, initially as a researcher to Jonathon Porritt, the Forum's Director. At this stage, Forum for the Future was still a new and relatively small NGO. Over the next two years, as the

Forum grew so did my role within it, and by 1999 I had been promoted to Senior Policy Adviser. This post involved carrying out policy-based research and consultancy for the Forum's corporate partners, such as BT, Sun Microsystems, NatWest Group and Tesco.

It was through my work with Sun Microsystems that the idea for Digital Futures first emerged. In discussion with Sun, it became clear that one of the key sustainability issues they were grappling with was what the growth in e-commerce would mean for society and the environment. In March 1999, I offered to produce an initial "think piece", scoping out the key issues. This initial research coincided with the period when e-commerce was starting to take off in a big way, and the more I looked into it, the more enthusiastic I became about it as a topic for sustainability analysis.

I presented my scoping paper to Sun in June 1999, and they were equally enthusiastic. With their support, I then approached a number of other think tanks to see if they would like to become involved, and began talking to the DTI and DETR about the possibility of government support for a larger project. Through a mixture of luck, careful planning and good timing, things took off from there. (More details of this process can be found in Chapter 4).

The project quickly grew into a major initiative, involving around 25 different partner organisations. As I had initiated the project, Jonathon Porritt agreed that I should become its full-time co-ordinator, and from 1 October 1999 to 1 March 2001, it was the main focus of my role at Forum.

Meanwhile, I was keen to build on the MProf that I had gained from Middlesex, so began working towards the DProf. Throughout the first half of 1999, I attended lectures at Middlesex and worked part-time on the research methods module (WBS 4825), as the first stage of moving from the MProf to the DProf. This module was completed in July 1999, just as I was involved in the initial scoping for Digital Futures.

I decided to make Digital Futures the focus of my DProf, and the following June, I completed the next module and signed my DProf Learning Agreement. My original target date for completion was September 2001, six months after the formal end of project activities. However, in August 2001, I accepted a new job as Head of Strategy

at the think-tank Demos, and decided to defer completion of my DProf until November 2002, to allow me time to settle into my new job.

As mentioned above, this report represents a critical commentary and analysis of the project. It should be viewed alongside the Digital Futures book and summary report as evidence of achievement. The box below outlines the various stages of my DProf.

Figure 2: The DProf process

September 1996 – July 1997
MProf (Sustainable Development)/Forum Scholarship
Modules WBS 4 & WBS 5 (180 credits), Awarded June 1998

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January 1999 – June 1999
Work based learning research methods
Module WBS 4825 (20 credits), Awarded July 1999

⇓

July 1999 – June 2000
Learning Agreement/Programme Planning and Rationale
Module DPS 4521 (20 credits), Awarded May 2001

⇓

July 2000 – November 2002
Final project report & presentation
Module DPS 5180

2. Objectives and terms of reference

2.1 Project aims and objectives

The Digital Futures project was influenced and shaped by three distinct strands of academic and policy discourse: the first relating to the digital society; the second to e-commerce and the "new economy"; and the third to sustainable development. This quest for synthesis between different theoretical spheres is reflected in the project's formal aims and objectives, which were:

Project aim

The overall aim of the *Digital Futures* project is to navigate a path through the complex web of issues surrounding e-commerce and sustainability, and establish some recommendations to ensure that this dynamic new market evolves into a powerful ally of sustainable development, rather than a spur to social exclusion and environmental destruction.

Project objectives

- To examine the opportunities of the digital economy through the prism of sustainable development.

- To establish a consortium of research organisations to look in depth at the social and environmental impacts of e-commerce.

- To recruit a group of corporate partners to support and actively participate in the research process.

- To enter into dialogue with key stakeholders in order to build consensus on the need for an integrated approach to e-commerce and sustainability.

- To recommend ways in which government and business could accelerate the convergence between the digital economy and sustainability

In this chapter, I trace the origins of the different academic and policy strands which informed the project, and then explain how I attempted to weave them together.

2.2 Digital society

The first theoretical strand which influenced the project is the concept of the digital or information society; the idea that information and communication technologies (ICTs) are more than simply a technical and economic phenomenon, and are fundamentally changing work, community, social organization and everyday life.

The earliest computers were developed in the 1940s. At the time, few could have anticipated the long-range impacts that computer technology would have. Even those developing the technology were unaware of its scope. Thomas Watson, the former CEO of IBM, predicted in 1948 that "there is a world market for maybe five computers" (Margolis, 2000). By the late 1960s, information technology was far more pervasive. Writing in 1970, the futurist Alvin Toffler was able to imagine a computerised system he christened OLIVER (Online Interactive Vicarious Expediter and Responder); a "computerised information system" which would "tap into a worldwide pool of data stored in libraries, corporate files, hospitals, retail stores, government agencies and universities" - an internet in all but name (Toffler, 1970).

In the thirty-two years since Toffler wrote *Future Shock*, there has been a steadily growing body of literature exploring the social impacts of ICTs. With the advent of the internet in 1983, and the World Wide Web in 1989, the focus of much of this has shifted towards the transformative potential of ICT networks, combined with ever faster processor speeds and greater bandwidth. Literally hundreds of books, articles and reports have been written analysing the impact of ICTs on work, the family, democracy, community, culture, politics, education, privacy and identity.[5] Such is the centrality of ICT to most of our lives that new concepts such as the "digital divide" have arisen to describe those who do not have access to the network.

The philosopher Gordon Graham suggests that attitudes to ICTs within both the literature and public policy debates, fall into two broad camps: the *Neo-Luddites*, who see digital technologies as largely corrosive of community and individual well-being; and the *technophiles*, who see the technologies as essentially positive and socially liberating (Graham, 1999).

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[5] Some of the more influential contributions to the field include (Negroponte (1995), Castells (1996) Dyson (1998), Slevin (2000)

It was on this axis of neo-luddism and technophilia that many of the research questions within Digital Futures rested. In all the project's subject areas (transport, community, planning etc.) two broad arguments are apparent - one that sees e-commerce as mainly destructive, and another that sees e-commerce as mainly positive. A core challenge for the project was to steer a path between these two positions. There was clear value in provoking and challenging the government and leading businesses, by exposing them to elements of a "neo-luddite" critique, but there was also a need to do this in a way that allowed them to develop constructive and practical responses. The starting point for the project was the hypothesis that e-commerce, like any new technological development, contains within it the potential for good and bad social and environmental outcomes. The research goal was to identify frameworks of policy and practice capable of minimising the negatives and maximising the positives.

2.3 E-commerce and the growth of the 'new economy'

Although the internet as we currently know it was created as far back as 1983, when several computer networks around the world were linked together for the first time, widespread interest in its application to business and the economy only began to grow in the mid-1990s. The launch of the Netscape Navigator web browser in 1994, and Netscape's subsequent battle with Microsoft for market share, is usually cited as the point at which the business and financial communities woke up to its commercial potential (Naughton, 1999; Thompson, 2000).

By 1999, this interest had reached fever pitch: dozens of dot-com companies were being launched every day; CEOs were describing the internet as the most important economic force since the Industrial Revolution; and the OECD in its report '*The Economic and Social Impact of Electronic Commerce*' predicted that the global market for e-commerce would be worth $1 trillion by 2005 (Castells, 2001; Lewis, 2001; OECD, 1998). All the talk was of a 'new economy', in which knowledge-intensive technologies would create the potential for almost limitless growth and prosperity. An enormous number of investors, business leaders and journalists were swept along by the rising tide of what Steve Woolgar has termed "cyberbole", despite warnings from more sober critics that the frenzied speculation had more in common with the South Sea Bubble or the tulip mania that gripped 17th century Amsterdam (Woolgar, 2001).

Unsurprisingly, politicians started to get enthusiastic about the digital economy. In the UK, the Government's 1998 Competitiveness White Paper placed the internet and e-commerce at the heart of its vision of a knowledge-driven economy, and set the ambitious goal of making the UK "the best environment in the world for e-commerce by 2002" (DTI, 1998). This was further reinforced by the publication in September 1999 of a report from the Cabinet Office Performance and Innovation Unit, which outlined sixty recommendations designed to stimulate e-commerce (PIU, 1999).

Enthusiasm for the 'new economy' became one of the hallmarks of the first term of New Labour. As Thomas Frank describes in his recent book "One Market Under God", ideas from US business thinkers such as Nicholas Negroponte, Tom Peters and Kevin Kelly were imported wholesale and "spun into the finest gold of New Labour industrial policy" (Frank, 2001). Tony Blair, Gordon Brown and Peter Mandelson gave speech after speech extolling the virtues of the brave new digital world. One of their main intellectual influences was Charles Leadbeater, adviser to the Prime Minister's office and author of the Competitiveness White Paper.

In the emerging politics of the e-economy, Leadbeater's 1999 book "Living on Thin Air" became New Labour's manifesto. In it, Leadbeater argues knowledge is the most creative force in the modern economy, spawning new products, services and industries. Under earlier forms of capitalism, the critical assets were raw materials, land, labour and machinery. In the new economy, the raw materials are know-how, creativity, ingenuity and imagination. The combination of knowledge with new information and communication technologies created the opportunities for almost limitless growth (Leadbeater, 1999).

Although Leadbeater was careful not to restrict his arguments solely to the realm of the internet and digital technologies, New Labour ministers and advisers quickly seized upon e-commerce as an exciting opportunity to test out the ideas surrounding the knowledge economy. E-commerce was placed at the heart of New Labour's economic and industrial policy. Patricia Hewitt was appointed the world's first e-Minister within the DTI, and an e-Envoy was created within the Cabinet Office, to co-ordinate e-policy across Whitehall.

What exactly do we mean by e-commerce? At the time of setting up the Digital Futures project, one of the problems we faced was the lack of a standard, internationally-agreed definition of e-commerce. (This has subsequently been

remedied following agreements within the OECD). To add to the confusion, e-commerce was just one of a number of loose terms (such as e-economy, new economy and knowledge economy) which were being used by commentators and journalists to describe the impact and application of digital technologies on the economy.

In the absence of an agreed international definition, it was agreed that within the project, we would use the definition of e-commerce proposed by the Cabinet Office in its report *'e-commerce@its.best.uk'*:

> 'Electronic commerce is the exchange of information across electronic networks, at any stage in the supply chain, whether within an organisation, between businesses, between businesses and consumers, or between the public and private sectors, whether paid or unpaid.' (PIU, 1999)

We interpreted this to include both *business-to-consumer (B2C)* transactions, and *business-to-business* (B2B) transactions at any stage in a supply chain. Although invisible to most of us, business-to-business e-commerce was always predicted to dwarf business-to-consumer in both scale and value. This remains the case now that the e-commerce marketplace is more mature. Consumer e-commerce is just the tip of the iceberg. (Hawkins, 1998). Within Digital Futures, we agreed it would be important to reflect this in our methodology, by focusing a great deal of our attention on B2B. Over the course of the project, there was also an emerging academic and practitioner debate about the potential for government-to-consumer (G2C) and government-to-business (G2B) electronic services (sometimes also termed 'public' – 'P2C' or 'G2C'). For practical reasons of time and research focus, this area was only touched on in the analysis, but it was acknowledged as part of the project's conclusions that this would benefit from further detailed study.

2.4 Sustainable development

The concept of sustainable development is also of growing importance to policy-makers, but is not without its own complexities, as this section will summarise. Since 1987, when it was first defined in the Brundtland Report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs", sustainable development had gradually evolved into the overarching goal of international environment and development policy (WCED, 1987).

Five years after Brundtland, at the high-profile Rio Earth Summit, the concept entered the mainstream policy agenda, when 153 governments endorsed a "sustainable development action plan", known as Agenda 21, and agreed a package of measures to tackle problems such as climate change and loss of biodiversity. By the mid-1990s, sustainable development had firmly established its place in policy discourse, not only for governments and NGOs, but also for large corporations, which increasingly sought to establish their sustainability credentials (Elkington, 1997). The recent Johannesburg World Summit on Sustainable Development (in August 2002) was the latest attempt to forge an international policy response to global environmental and social challenges.

There was (and still is) debate as to what sustainable development actually means, both within academic and policy circles. Some see it as a primarily environmental concept; others see its value as being the equal weight it accords to environmental, social and economic factors. Yet by the mid-90s, a consensus began to emerge that sustainable development could be a useful organising principle for policy and practice across different sectors. A recent report from the Real World Coalition summarises the perceived strengths of the concept:

> "Sustainable development can provide a vision of the future we all want: a fair and decent society; a rich and diverse environment; and a prosperous economy. It can also provide a robust framework for debate and policy design, helping to identify outcomes and targets to which a wide range of innovations and initiatives can contribute" (Christie & Warburton, 2001).

At the Rio Summit, each of the government signatories to Agenda 21 pledged to develop their own national strategy for sustainable development. The UK was one of the first off the mark, publishing an initial strategy in 1994, under the auspices of the then Environment Secretary, John Gummer (Department of the Environment, 1994). The Government agreed to review the strategy within five years, and one of John Prescott's first acts, when he took over as Secretary of State for the Environment, Transport and the Regions (DETR) in May 1997, was to commit the government to developing an updated strategy.

After an intensive period of consultation, in May 1999, the new strategy was launched (DETR, 1999). Within it was a new four-part definition of sustainable development:

- social progress which recognises the needs of everyone;
- effective protection of the environment;
- prudent use of natural resources; and
- maintenance of high and stable levels of economic growth and employment."

This was intended to build on the Brundtland definition by providing a clearer sense that sustainable development is as much about the economy and society as it is about the environment. At a practical level, given that the project's partners included three Government departments, and that the strategy had only recently been adopted, it made sense for the *Digital Futures* project to adopt this definition of sustainable development in framing its own work. However, whilst adopting the Government's definition for these practical reasons, I was also acutely aware of the problematic and contested nature of that definition. Indeed, the limitations of the Government's definition can usefully be used to highlight wider aspects of the ongoing debate over sustainable development. Below, I attempt a summary of this debate, by linking a discussion of the Government's definition to wider currents of academic thinking.

To start with the positive, the Government's formulation has one great strength: it recognises that sustainable development is a process with economic and social, as well as environmental dimensions. This is a step forward, especially when compared to the UK Government's earlier (1994) definition, and goes some way to placing flesh on the bones of the original Brundtland definition.

However, there are other important principles underlying the concept of sustainable development which the Government's definition does not do justice to. Some important contributions to this debate have come from environmental economists, such as Herman Daly and Paul Ekins, and environmental theorists such as Amory Lovins and Paul Hawken, who have argued that sustainability can be understood in terms of the economic concepts of *capital* and *income* (see for example, Daly & Townsend, 1993; Ekins & Max-Neef, 1992; Ekins, 2000; Hawkins & Lovins, 1999).

As several of these thinkers argue, sustainability depends upon maintaining, and where possible increasing, stocks of certain capital assets. There are five main types of capital:

- **Natural capital** (also referred to as environmental or ecological capital) is any stock or flow of energy and matter that yields valuable goods and services. It falls

into several categories: *resources*, some of which are renewable (timber, grain, fish and water), whilst others are not (fossil fuels); *sinks* which absorb, neutralise or recycle wastes; and *processes*, such as climate regulation. Natural capital is the basis not only of production but of life itself.

- **Human capital** consists of health, knowledge, skills and motivation, all of which are required for productive work. Enhancing human capital (for instance, through investment in education and training) is central to a flourishing economy. Poverty is both morally indefensible, and socially inefficient in that it prevents millions of people from fulfilling their potential and becoming engaged in the creation of wealth.

- **Social capital** is the value added to any activity or economic process by human relationships and co-operation. Social capital takes the form of structures or institutions which enable individuals to maintain and develop their human capital in partnership with others, and includes families, communities, businesses, trade unions, schools, and voluntary organisations.

- **Manufactured capital** comprises material goods - tools, machines, buildings, and other forms of infrastructure - which contribute to the production process, but do not become embodied in its output.

- **Financial capital** plays an important role in our economy, by reflecting the productive power of the other types of capital, and enabling them to be owned and traded. However, unlike the other types, it has no intrinsic value; whether in shares, bonds or banknotes, its value is purely representative of natural, human, social or manufactured capital.

Future wealth creation depends therefore on maintaining an adequate stock of each kind of capital. Sustainability is achieved if the stock of capital is kept intact or increased over time. If we deplete or consume more than we build up or invest, then our opportunities to consume in future will inevitably be reduced.

At the heart of the current environmental crisis is the way in which our levels of consumption and production are unsustainably depleting natural capital, to the extent that the ability of the earth to support the projected levels of human population in the next century at any level, let alone at the standard of living we in

the industrialised world enjoy, is seriously brought into question. Environmental sustainability can only be achieved if the impacts on the Earth's ecosystems are kept within those limits that allow their healthy functioning to be preserved (WRI, 2003).

The existence of different types of capital raises the question of whether they can be substituted for each other, without endangering quality of life in the future. Here, a distinction must be made between weak and strong sustainability (Ekins 2000; Pearce, 2000).

According to the principle of **weak sustainability,** substitution is not a problem, as long as the overall size of the capital stock is maintained. From this perspective, it does not matter if a forest is razed to the ground, provided the proceeds from the timber are invested in a factory which can generate an equivalent income. However, if we extend this argument to some other aspects of natural capital, the limits to substitution become clear. This was well highlighted in a recent study by Robert Costanza of the University of Maryland, which attempted to place an economic value on the world's ecosystem services, such as water supply, climate regulation, soil formation, waste treatment, food production and recreation. Costanza's study came up with a figure of approximately $33 trillion per year; almost twice the world's annual gross national product of $18 trillion (Costanza et al., 1997): [6]

By contrast, **strong sustainability** recognises the irreplaceable life-support functions performed by natural capital, and the considerable risks associated with its depletion. It follows that certain natural capital stocks must be held constant, irrespective of the availability of other forms of capital.

But sustainability is about much more than just protecting the environment. Natural capital is only one of the five types of capital which must be maintained if sustainability is to be achieved. The social dimension is equally vital, and this requires available resources to be distributed fairly, both now and between ourselves and future generations.

This is where the concept of **sustainable development** comes in. Sustainable development is the process by which, over time, we succeed in managing all the different capital flows in our economies on a genuinely sustainable basis. It is a

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[6] Robert Costanza et al. 1997 *The value of the world's ecosystem services and natural capital.* Nature 387, 253-260

dynamic process; a social as well as an environmental project, which enables all people to improve their quality of life, whilst at the same time protecting and enhancing the Earth's life support systems. This is what sets sustainable development apart from earlier approaches to environmental, economic and social issues.

The Government's definition expresses a determination to achieve sustainable development through a combination of 'effective protection of the environment', 'prudent use of natural resources' *and* 'high levels of economic growth'. At first glance, this sounds convincing, but it quickly becomes clear that this definition is smoothing over some fundamental – and often very difficult – trade-offs that will have to take place, if sustainable development is to be at all meaningful.

In the interests of intellectual honesty, it should be recognised that no industrial society has yet achieved this combination. Whenever there have been difficult choices to be made, economic growth has tended to win hands down over the environment (Ekins, 2000; Daly & Townsend, 1993).

Whether or not environmental protection stands in *inevitable* tension with economic growth is the subject of a lively debate between environmental economists. Some (such as Herman Daly) argue that the two are ultimately incompatible, such that the goal of sustainability should a "steady-state" (i.e. zero growth) economy. Others (such as Paul Ekins) suggest that there are certain limited conditions in which growth and sustainability can be compatible.

Whichever position is correct, it is clear that there will be occasions when environmental protection demands that society foregoes certain types of economic development. The fundamental problem with the Government's definition is its failure to recognise this. Without some kind of statement of principle that there are times when environmental protection must take priority over economic growth, and vigorous promotion of the principle when it needs to be put into effect, the underlying thrust of the economic system towards economic growth will tend inevitably to overwhelm environmental protection whenever the two are in conflict.

A related problem with the Government's definition is its reliance on a narrow GDP-based notion of economic growth. It is now well understood, and has been much emphasised in the sustainable development debate, that GDP, as a measure of the flow of marketed goods and services through the economy, is not a true measure of

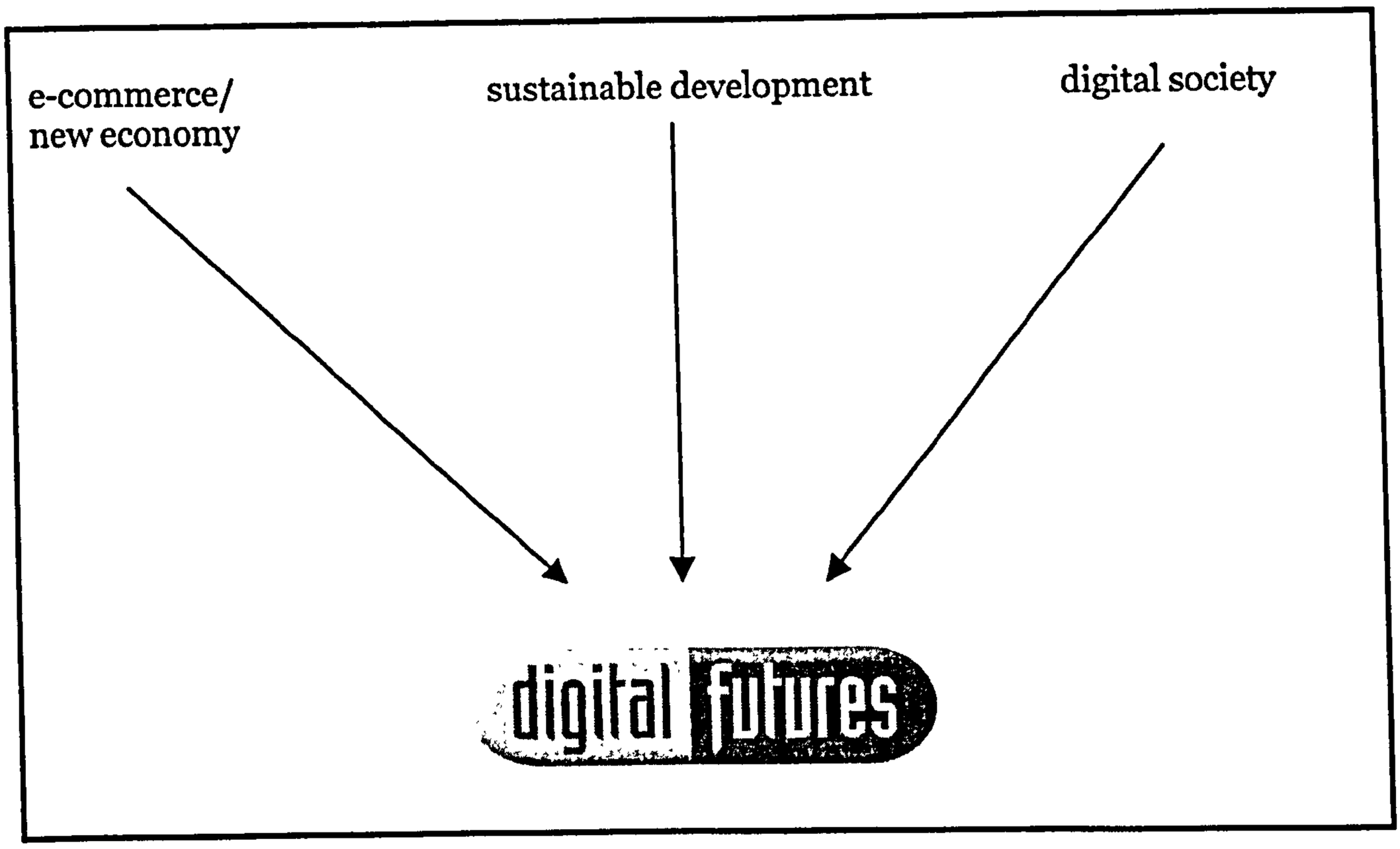
people's standard of living (because it omits non-monetary production), let alone quality of life and human welfare (which are concerned with far more than flows of goods and services) (Ekins, 2000; Hawken, Lovins & Lovins, 1999; Ekins & Max-Neef, 1992).

Increasing the flow of marketed goods and services may increase human welfare. But it may not (because of associated side-effects which reduce human welfare). The conventional methodology of calculating GDP prevents any possibility of identifying these different cases. By linking sustainable development to high levels of economic growth (understood as GDP increase), the Government's fourth broad objective of sustainable development makes the mistake of tying this new concept into the very economic framework that was responsible for unsustainable development.

A final problem with the Government's definition is that it ignores questions of power and scale. As Wolfgang Sachs (1999) has pointed out, it is crucial that we ask of sustainable development: sustainable for whom? Is this a paradigm of development designed to protect and maintain the privileges enjoyed by the powerful, affluent consumers of the industrialised world? Or does it genuinely have principles of equity and justice at its core? Also, at what level is sustainable development intended to take place: locally, nationally or globally? The process of unpacking these questions quickly illustrates the limitations of a Government definition which obscures as much as it reveals about the true path to sustainable development.

Nonetheless, despite these flaws in the Government definition of sustainable development, practical considerations led me to use it within the project. Given that the Government (through the DETR, DTI and Cabinet Office) was a major partner (and funder) of the project, it was neither possible nor desirable to start the project with a critique of their definition. Instead, I sought to design the project in such a way that some of these unresolved tensions would rise to the surface during the course of the analysis. The results (see Chapter 5) include my efforts to do this, particularly through points 7 and 8. Also, my evaluation of the project (see Chapter 7) includes some further thoughts on the extent to which the project consortium limited the radicalism of its conclusions.

Figure 3: Key concepts influencing the Digital Futures project



2.5 Weaving the strands: creating an interdisciplinary project

Each of these strands flowed into the Digital Futures project, and influenced its aims, objectives and methodology. The project was interdisciplinary from its inception, and explicitly set out to bring together traditionally distinct realms of theory and practice.

In 1999, when I began work on the project, there was very little published material available exploring the relationship between e-commerce, the new economy and sustainable development. Companies such as BT and projects such as the European Commission-sponsored Alliance for a Sustainable Information Society undertook some initial analysis of the relationship between the digital society and sustainable development (ASIS, 1999; BT, 1997). Yet most of this was quite broad and general and did not address the specific issues raised by e-commerce. This was partly because e-commerce was such a new phenomenon that there had been little opportunity for such analysis to take place. But there was also a palpable sense when I was putting the project together that an exciting opportunity was being missed to align various agendas in a new and creative way.

This idea is captured well in the opening paragraph of the original Digital Futures project proposal:

> "Two of the most powerful drivers of change in contemporary society are the explosion of digital technologies, and the shift towards sustainable development. Both require us to rethink the nature of goods and services. Both have the capacity to transform companies, markets and entire economies. Yet surprisingly few attempts have been made to assess whether the digital and sustainability revolutions will complement or conflict with one another." (Wilsdon, 1999)

The proposal went on to argue that:

> "Despite the opportunities for synergy between emerging policy on the knowledge economy, e-commerce, and sustainable development, there is currently little evidence of the joined-up thinking that is the supposed hallmark of Government policy-making. If we are to apply digital technologies so as to maximise social and environmental goals, there is an urgent need for dialogue between policy-makers and the companies who will be driving the e-commerce revolution." (Wilsdon, 1999)

Charles Leadbeater, in his contribution to the project, captured this same sense of opportunity:

> 'The Holy Grail may have appeared on the horizon. It comes in many guises: the post-industrial society, the information society, the knowledge economy, or simply the New Economy. All have at their core the same appealing message: we are moving into a new era, in which information, communication, entertainment, know-how, creativity and imagination will be the most valuable resources. This shift in the character of the economy offers society a new way to combine economic growth with sustainable development"
> (Leadbeater, 2000)

2.6 Joseph Romm and the emergence of a policy community

This chapter has provided an overview of the literature and key concepts that informed the Digital Futures project. However, it would not be complete without

reference to one particular report that emerged during the project's life, and had a significant impact on its scope and direction.

In December 1999 – around two months after Digital Futures was fully underway – the Washington-based Centre for Energy and Climate Solutions published a report entitled '*The Internet Economy and Global Warming: A scenario for the impact of e-commerce on energy and the environment*'.

Written by Joseph Romm, a leading US energy and climate change expert, the report represented the first serious attempt to analyse the environmental impacts of e-commerce. In it, Romm suggests that e-commerce will create year-on-year reductions of up to 2 per cent in the energy intensity of the US economy. He is bullish about the potential for what he calls 'e-materialization': reducing energy and material inputs through the use of ICTs. "The Internet economy", he argues "can turn buildings into websites and replace warehouses with supply chain software. It can turn paper and CDs into electrons and replace trucks with fibre optic cable. That means significant energy savings." (Romm, 1999)

What became known as the "Romm report" sparked quite a debate in policy circles. Technophile environmentalists seized upon it as the best evidence yet of the potential benefit of ICTs, while the neo-Luddites bemoaned the fact that Romm had neglected to factor in the inevitable rebound effects, which meant that any efficiency gains from ICTs would be swallowed up by continual increases in the *overall* volume of consumption. Even *The Economist* entered the debate, featuring the Romm report as its cover story in August 2000, under the sceptical headline "What the internet cannot do." (*The Economist*, 2000)

As the first published study in this particular field, the Romm report had a huge impact on the Digital Futures project. It came out just as we were embarking on the main phase of our research, and so greatly influenced our thinking. Within the project consortium, there were differing views on whether Romm's analysis was correct, but each of the research teams ended up in some sort of dialogue with Romm's ideas.

This dialogue became gradually more reflexive over the course of the project, as our own research findings began to confirm or challenge various aspects of Romm's thesis. Towards the end of the project, we also engaged with Romm directly, when we

invited him as a keynote speaker to the final *Digital Futures* conference in London. In this way, our work also influenced Romm's thinking – providing him with a constructive critique that he has drawn on in some of his subsequent work.

However, Romm had never attempted an analysis as broad as that within Digital Futures. His focus was purely on the energy and climate change impacts of e-commerce; ours encompassed not only energy, but also wider environmental impacts such as transport and planning, along with a host of other social factors such as community, social inclusion and business ethics. Thus, despite Romm's report being the first on e-commerce and the *environment*, ours was the first on e-commerce and *sustainable development*.

3. Project methodology

This chapter describes the seven main elements of the project methodology:

- The overall adoption of a systems approach;
- The use of soft systems methodology in shaping the various stages of the project;
- The creation of a cross-sector partnership of organisations to participate in the project;
- The use of scenarios as a central and unifying element of the research process;
- The blend of research techniques employed within each of the eight themes;
- Questions of ethics, ideology and power relations;
- My role as a work-based learner.

The table below sets out the key milestones in the project, and relates these back to the various steps in the soft systems methodology process, which is discussed in detail below.

Figure 4: The project process

DATE	ACTIVITY / KEY MILESTONE	SSM STEP
PHASE 1: development of proposal and scoping of research		
Oct 99 – Feb 2000	**Project development and scoping phase.** Recruitment of project consortium.	*1. Identify problem* ⇓
21/1/00	**1st Steering Group meeting.** Attended by all partners. Aim: to agree on scope and methodology; plan scenarios workshop.	⇓
1/2/00	**Official project launch** at Fabian Society/SERA Environmental Modernisation conference, accompanied by press launch.	⇓
PHASE 2: theme research		
29/2/00	**Scenarios workshop.** Full day session attended by project partners and key stakeholders. Production of draft scenarios by SPRU.	*2. Represent problem situation* ⇓

March – July 2000	**Research** under the eight themes gets underway, and initial papers are produced.	3. Identify key issues and relevant systems 4. Develop root definitions and conceptual models ⇓
4/5/00	**2nd Steering Group meeting** to discuss scenarios and review progress across all themes.	⇓
14/7/00	**Deadline for 1st draft theme papers**	⇓
27/7/00	**3rd Steering Group meeting** to review drafts and plan theme seminars.	⇓
PHASE THREE: seminars, consultation, editing and production of final reports		
11/9/00	**"Mind over matter" pamphlet launch**	
16/9/00 – 13/10/00	**Theme seminars** – a series of eight working sessions with key stakeholders to review theme papers.	5. Compare model with real-world situation ⇓
13/10/00 – 9/11/00	**Peer review, editing and consultation with stakeholders** within each theme.	⇓
10/11/00	Deadline for final drafts of theme papers	⇓
16/11/00	**4th Steering Group meeting** to agree structure of summary report, recommendations and plan for launch.	6. Identify practical and desirable changes ⇓
17/11/00 – 17/12/00	Intensive period of drafting and editing of summary report and book.	⇓
12/12/00	Invites and publicity out for the launch event	⇓
18/12/00	Deadline for first draft of summary report	⇓
11/1/02	**5th Steering Group Meeting** to sign off on final draft of summary report	⇓
13/12/00 – 20/2/01	Final editing, design and printing of summary report and book.	
1/3/2001	**LAUNCH CONFERENCE** and accompanying press strategy	*7. Make improvements* ⇓
1/3/01 – 1/8/01	**Dissemination of findings** through articles, speeches and events, and development of follow-up projects.	⇓

3.1 A systems approach

From the early stages of the project, it was clear that it would be difficult to reach definitive conclusions about the interplay between e-commerce, society and the environment. In part, this was because e-commerce was so new that its medium to long-term impact was (and still is) unclear. But it also reflected a deeper reality about complex systems. The myriad of potential interconnections between e-commerce, society and the environment – and the possibility of rebound factors – made it impossible to predict the future of this debate with certainty.

This recognition of complexity influenced the way in which the project's methodology was framed. I decided to adopt a **systems approach**, both in establishing the research questions and devising the project process.

Systems thinking, in the form of a general theory, emerged in the 1950s. It has since led to the development of a wide range of theoretical positions and models for practice, which it is not practical to review in detail here.[7] Instead, I shall mention three aspects of systems thinking which encouraged me to use it as the basis of my methodology:

a. *Systems thinking is able to cope with complex problems*

In using a systems approach, it is helpful to differentiate between two broad classes of problem: 'difficulties' and 'messes' (Chapman, 2002). A 'difficulty' is characterised by broad agreement on the nature of the problem and by some understanding of what it would look like, and the time and resources required for its resolution. In contrast, 'messes' are characterised by no clear agreement about exactly what the problem is and by uncertainty as to how improvements might be made. Repairing a car that has broken down, or deciding the next move in a game of chess are difficulties: as problems they are bounded, and someone will know when they have found the solution. But devising policies to reduce crime, or determining ways in which e-commerce can promote sustainability, are messes: there is rarely agreement about where the problem lies and there is a high level of uncertainty about outcomes.

Systems thinking provides a framework that is capable of coping with messes. It does not try to 'solve' the mess in the way that a difficulty can be readily solved.

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[7] For a useful summary, see Axelrod, R. & Cohen, M. (1999) and Capra, F. (1996).

Rather, a systems approach provides a framework within which most or all the participants can agree an agenda for improvement or a process for moving forward. This is precisely what I sought to achieve with the Digital Futures project: not to 'solve' the difficulties of e-commerce and sustainability, but to develop a framework which key players would accept as a useful way of thinking about the messy, complex and unpredictable interactions between e-commerce, society and the environment.

b. Systems thinking offers a more dynamic framework for policy making

One of the project objectives was to develop policies which could accelerate the convergence between the digital economy and sustainability. A systems approach is ideally suited to this task. Conventional approaches to policy making attempt to break a problem down into its component parts and tackle them in a rational, linear manner. The mechanistic logic at work is reflected in the language used – policy levers, instruments etc – and there is an assumption that interventions can be made at a certain point in order to produce a planned and controlled outcome.

The reality in most areas of policymaking is a lot more complex and messy. Interventions can have unpredictable and counter-intuitive consequences. In attempting to foster greater convergence between e-commerce and sustainability, a linear, rational approach to policy making is inadequate. As Axelrod and Cohen argue,

> "What makes prediction especially difficult in these settings is that the forces shaping the future do not add up in a simple system-wide manner. Instead, their effects include non-linear interactions among the components of the systems. The conjunction of a few small events can produce a big effect if their effects multiply rather than add."[8]

Feedback, non-linearity and complexity all undermine the traditional, linear model of policy making. These same factors support the notion that a more holistic systems approach is likely to succeed, and it was this approach that the project sought to develop.

c. A systems approach reflects the latest thinking within government

Adopting a systems approach within the project also fitted well with a growing interest in systems thinking within the UK government. In a recent paper, Geoff Mulgan, Director of the Strategy Unit within the Cabinet Office, identifies seven factors that increase the relevance of systems thinking to public policy (Mulgan, 2001):

1. the ubiquity of information flows, especially within government itself;
2. the pressure on social policy to be more holistic;
3. the growing importance of environmental factors, especially climate change;
4. the connectedness of systems, which brings new vulnerabilities;
5. globalisation and the way in which this integrates previously discrete systems;
6. the need to be able to cope with ambiguity and non-linearity;
7. planning and rational strategy, which can often led to unintended consequences.

Mulgan concludes that "Out of all these factors has come a common understanding that we live in a world of complexity, of non-linear phenomena, chaotic processes, a world not easily captured by common sense." He acknowledges that "so far remarkably little use has been made of systems thinking or of the more recent work on complexity" and that in part this is "to do with the huge sunk investment in other disciplines, particularly economics." If Mulgan and others are correct and the changing policy environment does nor require a more holistic approach, then the continued use of the linear, rational, mechanical approach to policy will fail ever more seriously, because its assumptions fail to reflect the way the modern world operates.

Throughout the project, I worked closely with representatives of three government departments, and it was helpful to be able to locate the project within a systems approach, which chimed with methodologies that were gaining currency within government's own practices.

3.2 Soft systems methodology

For these reasons, systems thinking provided a useful theoretical framework for the project. Yet it also informed and shaped the different stages of the research process through its specific application in the form of **soft systems methodology (SSM).**

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[8] Axelrod, R. & Cohen, M.D. (1999)

Many of the earliest attempts to apply systems thinking to management and policy drew on either engineering systems or natural systems for defining concepts and methods. The biological tradition gave rise to the general systems theory of von Bertalanffy, and the engineering tradition emerged through cybernetics and informed the work of Beer and others.[9] However, these approaches assumed that human activity systems could be identified and described as clearly as engineered or natural systems; as assumption that has proved problematic ever since.

It was the failure of these early attempts that led Peter Checkland to develop what has become known as soft systems methodology. SSM is a structured way to establish a **learning system** for investigating messy problems, and thus provides an ideal approach for investigating the messy and complex debates around e-commerce and sustainable development. Peter Checkland describes it as "an organized way of tackling messy situations in the real world" (Checkland & Scholes, 1990:1). A more detailed definition is given by von Bulow:

> "SSM is a methodology that aims to bring about improvement in areas of social concern by activating in the people involved in the situation a learning cycle which is ideally never ending. The learning takes place through the iterative process of using systems concepts to reflect upon and debate perceptions of the real world, taking action in the real world, and again reflecting on the happening using systems concepts....It is taken as given that no objective and complete account of a problem situation can be provided." (von Bulow, 1989)

Over the past thirty years, SSM has proved to be a very productive perspective for dealing with messy problems because it recognises and works with the ambiguity inherent in a situation. It starts from a recognition that when someone refers to a human system, such as the legal system, they are not pointing to anything as clearly defined as a computer system or the nervous system of a frog.

The general sequence of an SSM enquiry is illustrated below. This represents the original form of SSM proposed by Checkland, which has since been refined and extended by practitioners in particular contexts. However, for the purposes of my

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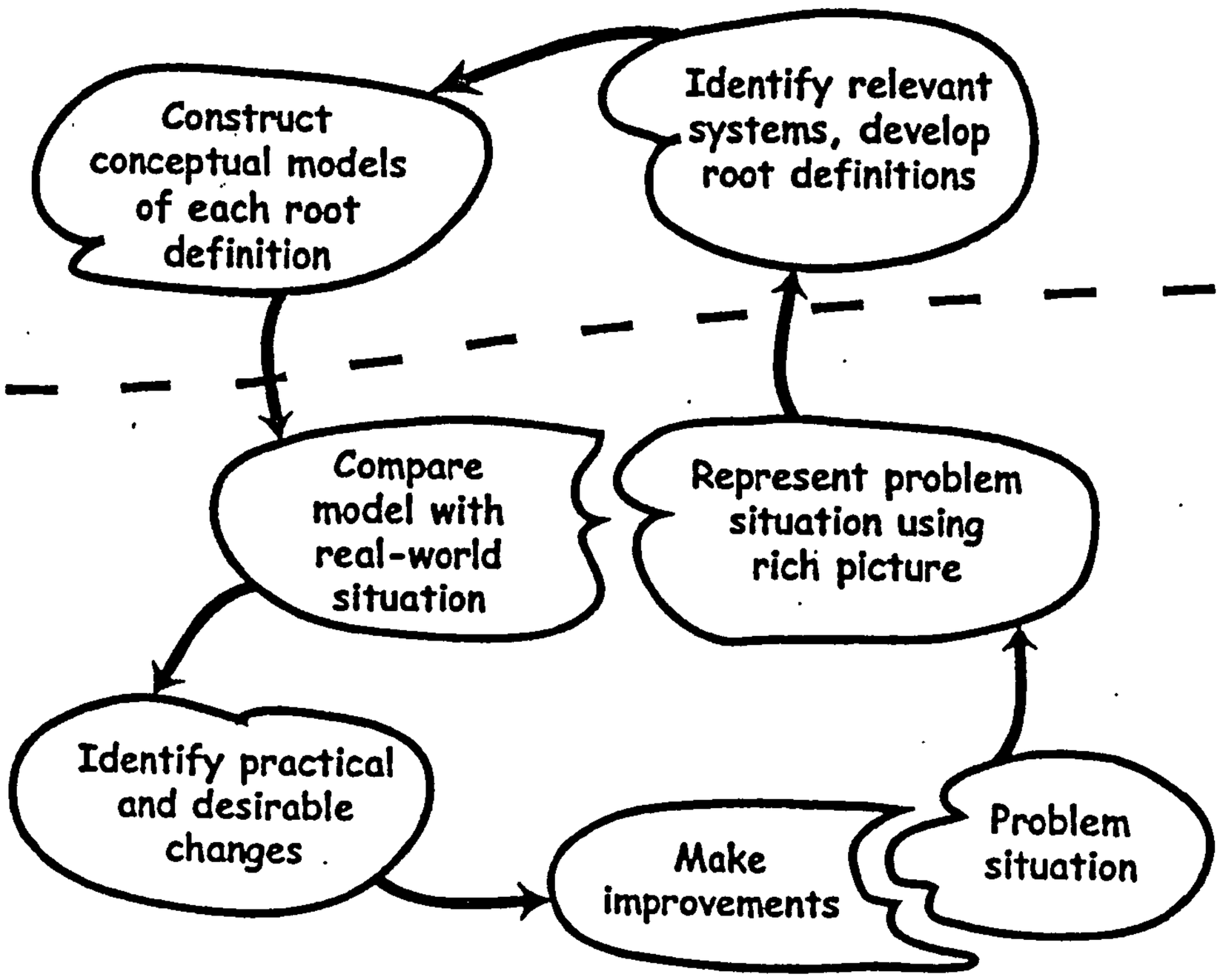
9 See for example von Beralanffy, L.(1968) and Beer, S. (1979)

project, the original (and simpler) version of the methodology proved more than adequate.

Figure 5: The 7-step process of SSM



Step 1

How do these different stages of SSM fit together? Firstly, a problem is identified. The problem can be anything that causes concern; all that is required "is a feeling that this situation should be managed in order to bring about improvement" (Checkland & Scholes, 1990:28). In my project, the identified problem was the interplay between e-commerce, society and the environment, and the mix of positive and negative effects that might arise from this interaction.

Step 2

Once the problem is identified, the participants in the SSM process represent their perspective on the problem by developing what Checkland calls "**rich pictures**". There is no fixed way of producing these rich pictures, although fluent users of SSM "will be observed throughout the work drawing pictures and diagrams as well as taking notes and writing prose" (Checkland & Scholes, 1990:45). Within the project, the technique used for developing rich pictures was an intensive one-day **scenario**

workshop involving all the project partners. (A detailed description of this scenario-building process is given below in section 3.4).

Step 3

From the rich pictures and the associated exploration of the problem, a number of key themes or issues are identified. In the project, these themes corresponded to the eight strands of the research process being led by each of the think tanks. The themes were selected to illustrate different dimensions of the complex system i.e. e-commerce and sustainable development. They were not exhaustive in their coverage of all dimensions of that system, but were sufficiently rich and varied to illuminate challenges and opportunities across the system as a whole. Explanations and **root definitions** of the problem are developed from each thematic perspective.

Step 4

The themes are then expanded through a process of research and investigation with key stakeholders and a **conceptual model** is developed within each theme. In the project, this corresponded to the main period of think tank research between February and September 2000.

Step 5

The next stage of SSM involves testing the conceptual models and research hypotheses in a **real-world** context. Within my project, this was achieved through a series of interviews and workshops with senior managers and policy makers, drawn mostly from the project partners. The workshops took place in the autumn of 2000.

Step 6

Out of this process of consultation, a set of **practical and desirable changes** are identified. In the project, these took the form of the recommendations and conclusions of each of the eight research themes.

Step 7

Finally, the process generates an **agenda for improvement**, designed to mitigate, improve or resolve the problem. Within the project, this agenda for improvement took the form of the summary report – *Digital Futures: an agenda for a sustainable digital economy* – which was launched at a high-profile conference on 1 March 2001.

3.3 Cross-sector partnership

The previous section illustrates how I took the idealised sequence of SSM and used it actively in framing the various stages of the project. My experience of using SSM in this way suggests that its main strength lies in its ability to bring to the surface different perceptions of the problem and structure these in a way that all involved find fruitful. The process fosters a high level of openness and is very effective at team-building and joint problem-solving; qualities that were crucial with such a large and sectorally diverse project consortium.

Working alongside this methodology was the consortium approach. The size and breadth of the project consortium was an important factor in the project. There were a number of reasons why the project was focussed around such a large consortium:

a. A richer perspective

The most important methodological reason for establishing a consortium that included government, NGOs, think tanks and a diverse range of businesses was a desire to draw a rich mix of perspectives into the research process. If we were going to develop a comprehensive understanding of the complex systems surrounding e-commerce and sustainability, and then recommend ways in which government and business could change things for the better, it seemed crucial to have all the key players around the same table, participating in the discussion. This is true to the spirit of systems thinking and SSM, which emphasise the need to include all stakeholders in the research process. There is no doubt that involving a large number of organisations dramatically enhanced the quality and scope of the project.

b. The value of partnership

One of my starting points in framing the project was a recognition of the intrinsic value of partnership in tackling complex sustainability issues. Since the Rio Earth Summit in 1992, partnerships between government, business and NGOs have become increasingly widespread. Zadek (2001) refers to the "partnership boom" which occurred during the 1990s, reflecting the fact that

"the world has become too complex and interdependent, and resources too scarce, for any one institution to effectively respond to today's business or wider challenges and opportunities. Partnerships are a means of getting things done that individual organisations would be unable to achieve alone." This was certainly the case with the *Digital Futures* project. If Forum for the Future had set out on its own to produce a report on e-commerce and sustainability, it would have generated a gentle ripple of interest in the policy community. But Forum for the Future joining forces with seven other think tanks, three government departments and fourteen companies gave the project greater clout and raised the level of interest in its outputs. Indeed, it was the novelty of the partnership that drew the project to the attention of policymakers in the Prime Minister's office, who included a reference to it in Tony Blair's first environmental speech in October 2000 (see above, p.7).

c. *Dissemination and implementation*

One of the project's objectives was "to recommend ways in which government and business could accelerate the convergence between the digital economy and sustainability". Rather than simply making a set of recommendations that could strengthen convergence, my hope was that the project would leave to concrete changes in government and corporate policy and practice. This seemed far more likely to happen if we had both government and business actively involved from the start. Similarly, having such a large consortium was likely to make dissemination of the project's results a lot easier, as each partner organisation had its own networks of stakeholders who could be told about its findings in a variety of ways.

d. *Funding*

The final reason for drawing in a wide circle of partners was a more practical one. By including three government departments and fourteen companies – all of whom provided sponsorship - I significantly increased the overall project budget. This meant that the eight think-tanks were able to carry out a detailed and properly funded piece of research, and it also provided Forum for the Future with sufficient funding to resource the management and coordination of the project.

3.4 Scenario planning: a key component of the research process

Within the overall methodological framework of SSM, the eight research partners employed a blend of methodological techniques to enrich the research process. As mentioned above, the development of a set of common **scenarios**, which could be used across all the eight research themes, was a very important element of the methodology, which corresponded to the development of "rich pictures" within the SSM framework.

a. What is scenario planning?

Given the difficulties of predicting the shape and form that e-commerce will take ten or twenty years in the future, it was decided to approach the task of picturing the future in an exploratory way using scenarios. Scenarios are powerful tools for addressing the future. They do not attempt to predict what will happen, but rather offer a number of plausible visions of how the future might look. By fostering creativity and encouraging us to look beyond narrow mindsets, scenarios can improve the quality of long-range decision making. Scenarios are basically stories about the future, which reduce large numbers of variables to two or three different options, and thereby enhance the ability of individuals and organisations to respond to change. They can explore future possibilities at the global, national, sectoral or organisational level. There are many different methodologies for developing scenarios, but in general, the simpler the method, the more effective the scenarios will be. Scenario planning is most useful when it is conducted as a group exercise, since it enables a strategic dialogue to be maintained between a range of conflicting perspectives. Peter Schwarz, one of the pioneers of scenario planning through his work with Shell in the 1970s, explains that:

> "Scenarios are stories about the way the world might turn out tomorrow, stories that can help us recognise society and adapt to changing aspects of our current environment. Scenario planning is about making choices today with an understanding of how they might turn out." (Schwarz, 1998)

b. A brief history of scenario planning

Scenarios were first developed as a formal tool for decision making by the U.S. Air Force during World War II. In the 1960s, Herman Kahn, who had been involved in this Air Force work, refined scenarios as a tool for business decision making. Kahn went on to set up the Hudson Institute, which pioneered a range of scenario planning methodologies for government, scientists and business. In the 1970s, the next stage of scenario planning was

led by the management theorists Michel Godet and Pierre Wack. It was Wack who introduced Shell International to scenarios, at a time when the company was becoming dissatisfied with traditional forecasting. As a result of the 1973 oil crisis, Shell realised that many of the conditions affecting its business are unpredictable, so it decided to switch from standard methods of forecasting and prediction to the use of scenarios. To this day, Shell remains one of the most prominent advocates of scenario planning within the corporate sector (Schoemaker, 1995; Schwarz, 1998).

By the 1980s, scenario planning had become increasingly sophisticated, and had started to incorporate techniques such as Delphi forecasting[10] and Cross-Impact Matrices.[11] As a result, it gained a reputation for being difficult and expensive to use. Nonetheless, many companies adopted the technique in some form, and a 1983 survey of major US corporations found that 68% were using scenarios (Diffenbach, 1983). The trend towards scenario planning developed as a result of three factors: advances in computer technology and the capacity for computer simulation; the emergence of game theory, which provided a rich structure for studying social interaction; and the Cold War military needs of the US, which gave rise to the use of war games and simulated planning exercises.

The popularity of scenarios has waned since the high point of the early 80s. Some, like Shell, have stayed loyal to the technique, but many other companies have adopted alternative methods of long-range planning. In the past decade, there has been a move away from complex methodologies, towards a realisation that simple scenarios work best. It is generally acknowledged that scenarios are learning aids, rather than tools for forecasting. They are a useful means of promoting organisational learning, challenging assumptions, and thereby improving the quality of decision making. The more straightforward the methodology, the easier it is to achieve these goals (Mercer, 1995).

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[10] The Delphi technique, named after the ancient Greek oracle, was developed by the RAND Corporation in the 1950s as a method of gathering information about the future. It involves asking experts in various fields to estimate individually the probability that certain events will occur in the future, with the aim of determining a consensus probability. Its contemporary equivalent in the field of market research is the polling of 'opinion leaders' about their views on political developments etc.

[11] Cross Impact Matrices are a complex means of determining the probability of certain outcomes, by feeding vast amounts of data into a computer and letting it work out what is most likely to happen. They are much loved by statisticians and econometrists, but have become less popular in recent years.

c. *How did we use scenarios within the project?*

Early on in the project, it was recognised that all the partners would require some form of shared framework for thinking about the future of e-commerce and sustainability, if we were to avoid the eight research themes becoming disconnected from one another. We wanted to avoid each research partner having to go through the same process of future-scanning before getting into the substance of their thematic analysis.

The development of a common set of scenarios was seen as the most effective way of achieving this. It was also recognised that this approach fitted well with an SSM approach. One of the research partners – SPRU – was tasked with developing a scenario methodology that could form the basis of a one-day **scenario workshop**, which was attended by all project partners on 29 February 2000.

The approach that the SPRU team took was based upon a scenarios framework they had developed previously for the Natural Resources and Environment Panel of the Foresight Programme; a framework which has since been used by a variety of other public sector and academic bodies (Berkhout et al., 1998). The SPRU scenarios framework describes four possible future worlds:

- ***World Markets*** – a world defined by an emphasis on private consumption and a highly developed and integrated world trading system.
- ***Global Sustainability*** – a world in which social and ecological values are considered in economic decisions, and in which strong collective action through global institutions tackles environmental problems
- ***Provincial Enterprise*** – a world of consumerist and short-term values couples with policy-making systems which assert national and regional concerns and priorities.
- ***Local Stewardship*** – a world where strong national and regional governance allows social and ecological values to play a strong role in the development of markets and behaviour.

On 29 February 2000, a scenarios workshop was held as an opportunity for the *Digital Futures* partners to think creatively about the sustainability challenges

and opportunities that e-commerce would create. The agenda for the day described the aims of the workshop as follows:

> "By the end of the day, we hope to have reached a shared understanding about these issues, which will give us a solid foundation for the rest of the research process.... Around 60 people will be attending the workshop, drawn from a wide variety of companies, government departments, NGOs and think tanks. We hope that you will use the opportunity to: actively contribute your knowledge and expertise; participate in imaginatively constructing the future; learn from others; be creative, and hopefully have some fun!" (Wilsdon, 2000)

More details about the scenarios workshop can be found in Appendix 2. Taking the ideas it generated, the team from SPRU then developed a set of four scenarios for e-commerce and sustainable development, which acted as a common reference point for the work carried out under the other research themes over the course of the project. These scenarios comprised a set of storylines, an inventory of sustainability themes and impacts, and a set of key indicators, such as energy use, CO_2 emissions, employment, social exclusion, and land use.

3.5 Research within the eight themes

The scenarios, as well as the overall SSM framework, provided a common starting point for each of the eight research partners. The themes were selected to illustrate different dimensions of the complex system of e-commerce and sustainable development. They were not exhaustive in their coverage of all dimensions of that system, but were sufficiently varied to illuminate challenges and opportunities across the system as a whole.

Across the eight themes, each of the research partners was free to employ its own blend of research techniques between February and September 2000, in order to gather the necessary information to prepare initial drafts of the theme papers. The approach taken at this stage varied, and it is not practical to outline in detail the steps taken by all eight organisations. However, a mix of the following techniques were employed:

- *Desk-based research*, which drew on a range of UK and international sources;

- *Interviews* with policy makers and senior managers in the government and business partners, in order to gain insights and practical lessons for the research;
- *Case studies* of how some of the partner organisations were addressing the challenges and opportunities of e-commerce and sustainability (for example, BT, South West Regional Development Agency, Amazon.co.uk, and AOL). Most of the material for these case studies was gathered through interviews.

Within my own research theme, which explored the notion of "dot-com ethics" I also undertook a **survey** of the attitudes of technology and dot-com companies to social and environmental issues. A copy of the survey can be found in Appendix 3. It featured fourteen questions, twelve of which were designed to produce quantitative data and two of which were qualitative. From an original sample size of 150 companies, we received survey responses from 103. Just under half of these were completed by the CEO of the company, and the rest by senior managers. Companies were selected to represent a cross-section of the e-commerce marketplace. They ranged from large multinationals to small start-ups, and included a mixture of business-to-consumer (B2C), business-to-business (B2B), internet service providers, software and hardware companies. The main criterion for inclusion was a business model based primarily around the internet. At the time, there were hundreds of companies in this category. A year later, following the dot-com crash, many had gone into liquidation. Thus, while it may be hard to draw any long-term conclusions about the relationship between e-commerce and sustainability from such a survey, it did at least succeed in providing a useful snapshot of the attitudes of such companies to social and environmental responsibility at the height of the dot-com boom.

3.6 Ethics, ideology and power relations

It is important to acknowledge my own ethical and ideological stance in undertaking this project, and also to recognise the different dynamics of power and influence that operated within the project consortium.

Firstly, questions must be asked about the project's contribution to sustainable development. From a radical environmental or social perspective, it is reasonable to ask whether e-commerce could make any contribution whatsoever to sustainable development, given that it is essentially a digital means of perpetuating and accelerating what many see as the inevitably damaging environmental and social

consequences of advanced capitalism. More trenchant critics of business and globalisation would no doubt argue that trying to make e-commerce more sustainable is pointless. If the whole system is flawed, there is little point tinkering around the edges in trying to improve it.[12]

Yet this project started from a different ideological perspective, which was heavily influenced by the organisational stance of Forum for the Future. The Forum is an unusual environmental NGO, in that it doesn't campaign against anything or anyone, but rather seeks to encourage and support organisations that are taking positive steps towards sustainability. It is unashamedly pragmatic; acknowledging that although an enormous amount needs to be done to achieve sustainability, society can only get there through an incremental process of change.

This approach reflects my own beliefs. Although I have always been interested in radical theories of social and political change, at a practical level I believe it is usually better to present new ideas in ways that can generate consensus and encourage a range of actors to become involved in the process of change. I am much more comfortable with Forum for the Future's approach than I am, for example, with Greenpeace's. For many people in the green and anti-globalisation movements, business provides a focus for trenchant opposition. I believe we cannot shy away from tackling the institutions and structures that confront us – however complex, however messy, however compromised those institutions may be. Advocates of sustainable development will always need people at the more radical end of the spectrum, highlighting injustice and campaigning for change, but they also need people on the inside, taking those ideas and making them real within every organisation.

The Digital Futures project is based on such pragmatism. It started with a problem: the fact that e-commerce is radically changing our economy, but we cannot know whether its environmental and social consequences will be positive or negative. It then set out to work with government, business, academics and think tanks to reach a consensus as to what policies would be necessary to maximise the wider benefits of e-commerce. Inevitably, the end result was too radical for some and not radical enough for others. But providing it made a genuine contribution to advancing the sustainability agenda within UK business, I felt it was a valuable exercise, and a true expression of my ethical convictions.

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[12] See for example Monbiot (2000), Gray (1998) and Klein (2000)

Secondly, how did the relationships of trust and power operate within the project consortium? Despite the new enthusiasm for partnership described above, it was still relatively rare for a group of think-tanks and NGOs to work closely with a group of companies and government departments in this way. From the start, it was clear that the partnership would only work if the research partners had a high level of access to the corporate and government partners. It was also necessary for decision makers in those organisations to be open and honest about the barriers and obstacles they encountered in tackling sustainability. In order for a proper relationship of trust to develop, a set of ethical standards were agreed, particularly surrounding issues of commercial confidentiality, and each of the research partners offered to sign confidentiality agreements with the corporate partners if required.

Whilst it was made clear to all participating companies that the overall results of the research would be made publicly available, great care was taken to ensure that any sensitive, company-specific details were presented in such a way so as to ensure the anonymity of the company concerned. All the companies received advance copies of all reports and published papers, and dialogue between the companies, the researchers, and other project stakeholders was encouraged at all times.

It was also made clear that editorial control rested primarily with the eight research partners, and ultimately with Forum for the Future as the project coordinator. All partners – government, business and research – were encouraged to comment on and peer review each other's work, but the final decision as to what was included and excluded rested with the eight theme authors. Similarly, in the final stages of editing and producing the book and summary report, I had overall editorial control.

As independent research organisations, Forum for the Future and the other research partners were sympathetic to the needs and views of the participating companies, but it was important that we retained a degree of critical distance and objectivity about the project's outcomes.

This relationship worked well, and the government and corporate partners remained very supportive of the project process throughout. Most provided useful comments and input, and none sought to alter the core conclusions of the project. The government had indicated from the start that it was not embarking on this project with a pre-set agenda, but was supporting it in a genuine spirit of inquiry. This helped

to avoid any awkward divisions or conflicts within the project consortium; a phenomenon that is quite common within large, cross-sector partnerships.

However, in the latter stages of the project, there was one notable difficulty in this working relationship; an incident which illustrates the ethical dilemmas that can crop up in cross-sector partnerships. During the research for my "dot-com ethics" theme, I came across an excellent example of the environmental impacts of e-commerce relating to Amazon.com's distribution of the book *Harry Potter and the Goblet of Fire.* In the "dot-com ethics" pamphlet, I described the example in the following way:

> "It was like a carefully planned military operation. At strategic locations across America, a fleet of 9000 trucks revved their engines, 100 specially-chartered planes rolled down the runways. Their mission: to deliver *Harry Potter and the Goblet of Fire* to a nation hungry for instant fulfilment.
>
> It sounds crazy, but it did happen. Back in July, Amazon.com teamed up with Federal Express to deliver 250,000 copies of the new Harry Potter book to eager US fans. True to the spirit of 1-click™ shopping, no effort was spared in ensuring that the book hit people's doormats on the morning of publication. A press release issued the next day proudly declared it to be 'one of the largest sales and distribution events in e-commerce history'. In just 24 hours, over 300 tonnes or 188 million pages of Harry Potter magic were transported to homes across America.
>
> We've heard a lot about the wizardry of e-commerce. How it's rewriting the rules of business. How it's collapsing supply chains. How it's changing the relationship between companies and consumers....But at least one aspect of business remains strangely untouched by the revolutionary hand of the internet. Hardly anything has been said about relationship between e-commerce and corporate sustainability. Take Harry Potter. Individually wrapping 250,000 books and express air-freighting them overnight is about the most environmentally unfriendly method of distribution imaginable...
>
> The lack of attention paid by e-commerce companies to sustainability issues runs counter to wider trends in the corporate world. It is widely acknowledged that business now has to meet a much broader range of expectations than in the past: governments are introducing new regulations;

consumers are requiring higher ethical standards; pressure groups are becoming more sophisticated; and communities are demanding a stake in decision-making.... The e-business community's response to these trends has been one of deafening silence. This pamphlet is a call for greater engagement. Its central argument is that alongside the economic opportunities being created by e-commerce, there are a host of social and environmental opportunities that must be seized if the new economy is to become more sustainable than the old." (Wilsdon, 2001)

The information on which this example was based came from an Amazon.com /Federal Express press release, so was entirely in the public domain. But this did not prevent Amazon's UK management objecting to its inclusion in my pamphlet. On receipt of the draft text, they demanded that I withdraw the example, which they felt showed Amazon in a bad light. In my defence, I argued that it was not an attack on Amazon's environmental record, so much as a powerfully compelling example of the way in which e-commerce could have wider environmental effects that are obscured by the supposedly "virtual" and "weightless" nature of e-commerce.

After three or four days of negotiation, we reached deadlock. I was not willing to withdraw the example, as I felt it contributed to my research and to the text of the pamphlet. Amazon were not willing to let me publish, and threatened to pull out of the project altogether if I went ahead. This prospect was made more problematic by the fact that Amazon still owed Forum for the Future half of their sponsorship money (£7,500 out of a total £15,000).

This was by far the thorniest ethical dilemma I faced over the course the project. I had a choice: to publish and uphold the integrity of the research, but at the same time one of the most interesting project partners along with £7,500 of sponsorship; or to bow to the sponsor's demands, tone down the text and keep the money.

I consulted widely with colleagues inside Forum for the Future. In the end, after talking it all through with Jonathon Porritt, the Forum's Director and my immediate line manager, we decided to publish.

A week later, we released the pamphlet to the press and some of the press coverage it generated was critical of Amazon (see for example Appendix 5, articles N, P, Q).

Amazon's management accused us of betraying their trust and undermining their ethical reputation, even threatening to sue us for libel.

Below is an extract from an apology letter I wrote to Christina Smedley, Head of Public Affairs at Amazon on 15 January 2001, which summarises why we felt it was right to go ahead and publish:

15 January 2001
(by email)

Dear Christina,

DOT-COM ETHICS

I'm writing in response to your most recent e-mail (sent at 4.28pm on 12 January), in the hope that we can mend some bridges....

On the issue of the Harry Potter example, you say that you 'would have expected much further fact checking' on my part. My primary source for the example is a Federal Express/Amazon.com press release of 10 July 2000. A copy of this is attached as an appendix to this letter. The example I use is one that you yourselves have publicised. The data I use is your data.

Since that press release was issued, the Harry Potter example has been the subject of widespread comment elsewhere. To give you just two examples: New Scientist magazine mentioned it in the week of 15 November; in the same month, the journal *IEEE Spectrum* also ran a detailed essay about it, written by US academic Scott Matthews. So in using it in my pamphlet, I considered that a) it was 'old news' anyway; and b) the numbers were your numbers, so they were obviously right. I didn't – and still don't – see the example as particularly critical of Amazon. It's a light-hearted, easily-understood illustration of the argument that we cannot assume business done over the net is environmentally friendly in all respects. This is an important aspect of the digital economy which should be discussed...

This brings me on to a wider point about our independence as a charity and think-tank. We set up Digital Futures as a genuine inquiry into the impacts and opportunities of e-commerce – both positive and negative. You joined the project on this basis. The overwhelming thrust of our research is towards the positive opportunities... But the research has also highlighted a few areas of concern, and it is our role as independent researchers to draw attention to these. We are grateful to our corporate partners for their support, both financially and through the sharing of knowledge and expertise, but it has always been clear that we as researchers have independent editorial control of what we publish.

By supporting a project like Digital Futures, you signalled your interest in participating in an active dialogue about e-commerce. I really would urge you not to throw the whole partnership away on the basis of one misunderstanding. We are keen to continue working with you. We want to applaud your successes, and the many positive things you are doing. And occasionally, we will want to point out areas

where we think you could do better. This is our role as a sustainability charity, and it's on this 'constructive engagement' basis that we work with over 70 companies here in the UK.

Throughout Digital Futures, we have tried to encourage genuine engagement between the business and policy-making community in this new and exciting area. Opportunities have included participation in steering groups, one-on-one meetings with myself and the other research partners to discuss your company's own social and environmental performance, and direct participation in primary research, such as the 'dot-com ethics' survey...

So where do we go from here? The project is now six weeks away from completion and you do of course have the option to withdraw completely. You've already made it clear that you don't wish to provide a quote from Jeff Bezos, which is a shame. Your remaining commitments are to speak in one of the workshops on 1 March, and to be listed as one of the partners in the summary report and other launch material. If you do wish to withdraw, we would need to know this week, as the summary report will soon be going to press.

However, my honest advice to you is to remain in the project, as your absence from the launch line-up is bound to draw attention from journalists, and raise questions from the audience on 1 March. This type of attention would not reflect well on either of us.

My hope is that you will accept our apologies for where we have made mistakes, and that we can continue working in partnership to bring Digital Futures to a successful conclusion.

Yours sincerely,

JAMES WILSDON
Senior Policy Adviser

This whole episode was difficult, but I remain convinced we did the right thing. Fortunately, it remained an isolated problem and did not disrupt relations with any of the other partners, most of whom felt that Amazon were over-reacting. And as it transpired, Amazon decided not to withdraw from the project. They were not happy, and remained disengaged from most activities for the final two months of the project. But they did stay on board the steering group, and paid the rest of their sponsorship money.

What lessons can be drawn from this? Firstly, the need to communicate in an open way with project partners at all time. Secondly, if I were doing the project again, I would draft a more explicit memorandum of agreement with the corporate partners to cover such eventualities. But ultimately I feel we were right to assert our independence. Against those who argue that it is impossible to work with business

without being compromised[13], this is the best illustration I can offer of how it is possible to work in a collaborative way whilst maintaining a high level of ethical integrity.

3.7 My role as a work-based learner

In this final section, I want to reflect on the way in which my role as a work-based learner affected my approach to the project, and to the ways in which the methodology was framed. Within the project, I performed a dual role. I was a researcher, leading one of the eight research themes. But I was also the project co-ordinator, responsible for managing and steering the entire project process to a successful conclusion.

This dual role created tensions at various points in the project. At a practical level, it was quite difficult to find enough time to do my own research for the "dot-com ethics" theme when I was also having to juggle all the other project activities, whether liasing with the corporate or government partners, organising seminars and the launch conference, or coordinating the PR and media strategy. When the project started, the size and scale of these different tasks was a rather unknown quantity. I had certainly never managed a process on this scale, so had to pick up a lot of project management skills as I went along.

From September 2000 until the end of the project, I had an additional team member at Forum for the Future to assist with coordination. Paul Miller was recruited as a *Digital Futures* project officer, to support me on both the research and logistical aspects of the project. Paul's contribution to the project management process freed up my time to concentrate on research, writing and editing.

The fact that I was using the project as the basis of my DProf also created its own complexities. Although I informed the project steering group that I was undertaking a work-based doctorate based on the project, to all intents and purposes my involvement in the DProf had to remain an invisible part of the process. The perspectives gained from my study at Middlesex – especially from the methodology module WBS 4825 – were very influential in shaping the methodology of the project, and in leading me to adopt a soft systems approach. At the same time, for the rest of the project participants, the methodology had to be judged on its own merits as the

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[13] See for example Monbiot & Porritt, 2000

best way of approaching the project, irrespective of whether it formed part of my DProf research.

Thus, a division existed between the **explicit** and **implicit** aspects of the DProf research process. The explicit aspects included the project methodology, the different stages of the research process, and my work as a project coordinator and as a member of the research team. The implicit aspects were the additional methodological reflection and professional development that I undertook as work-based learner.

Many of these implicit aspects were not captured in the published outputs of the project (which are included alongside this report as evidence of achievement). Instead, I used a **learning diary** as a way of capturing thoughts, ideas and insights that occurred throughout the project. For example, after a project steering group meeting or a seminar, I would jot down a few notes or learning points. I found the learning diary a valuable way of recording information which was relevant to the DProf process, but which could not be included in the *Digital Futures* pamphlets, book or final report. Many of the notes and entries from my learning diary have been incorporated into chapters 3, 4 and 5 of this report.

4. Account and analysis of project

This chapter provides a detailed commentary on the project process, followed by an assessment of successes, failures and lessons learned at each stage. Each of the phases of the project is mapped out, then discussed and evaluated.

4.1 Phase 1: project development and scoping

Chapter 2 provides a detailed account of the economic and policy context, which created the wider rationale for the *Digital Futures* project. The specific impetus to establish the project came from my work at Forum for the Future.

A central strand of the Forum's mission is to work with partners in business and government to identify positive solutions for sustainable development. Part of my role, as the Forum's senior policy adviser, was to develop innovative projects that would accelerate the uptake of sustainable policies and practices amongst these partners.

In mid-1998, Sun Microsystems, the leading US technology firm, joined the Forum as a corporate partner, and I was assigned the responsibility of managing the partnership. In my initial discussions with Sun, it became clear that one of the key sustainability issues they were grappling with was what the growth in e-commerce would mean for society and the environment. At the time, Sun's main advertising slogan was "We're the dot in dot-com". From their experience in the US, the UK management of Sun knew that e-commerce was about to move from the margins to the mainstream of the economic agenda in the UK. In parallel with its desire to use e-commerce to drive up the market share of its products and services, Sun was also keen to demonstrate "thought leadership" in some of the wider policy questions about the digital society.

In June 1999, I produced an initial scoping paper for Sun on e-commerce and sustainable development. Within this, I proposed establishing a consortium of industry, government and research partners to undertake a comprehensive analysis of the issues. The team at Sun were enthusiastic about the idea and offered initial funding of £15,000 to scope it out in detail.

From September onwards, I began the process of recruiting the project consortium. I went first to the Department for Trade and Industry and met with Dr Colin Hicks, then Director-General of the DTI's environment division. He was supportive of the idea, and felt that it fitted well with the priorities of both the Competitiveness White Paper and the recently-launch UK Sustainable Development Strategy (DTI 1998; DETR, 1999). On the condition that I secured additional business support, he offered a further £60,000 of funding. Shortly afterwards, I had similar meetings at the Department of the Environment and the Cabinet Office, and again managed to secure their involvement along with a further £30,000 of funding.

By this stage (mid-October 1999), a real sense of momentum was starting to build behind the project, and I embarked on the task of recruiting the other research and corporate partners. On the research side, I was faced with a choice: either deliver the entire research programme from within Forum for the Future; or work collaboratively with a range of other research organisations on particular themes. Doing it all through Forum was problematic, as we lacked expertise across all the areas the project aimed to cover, and to deliver the project in the desired timescale would have necessitated recruiting several extra researchers. At a practical level, working with other research partners made a lot of sense. Moreover, a collaborative approach enabled me to draw in a range of existing experts and organisations, whose involvement lent weight and authority to the project as a whole.

The process of recruiting the research partners took about two months. At the start, I was not entirely sure what the ideal mix and quantity of themes and partners would be. There were several dimensions of the e-commerce and sustainability debate that I felt would benefit from detailed analysis - eco-efficiency, transport, community, social inclusion, corporate social responsibility, planning – but the precise mix of themes was developed in an iterative way through conversations with academics and practitioners working in the field.

First, I looked for an organisation that could develop the scenarios. Methodologically, I was certain that we needed a set of scenarios, both to provide the research partners with a shared framework for thinking about the future, and to develop the "rich pictures" that are an important element of the SSM approach. I approached three or four organisations with experience of scenario building, and eventually opted for the Science and Technology Policy Research Unit (SPRU) at Sussex University. SPRU had recently produced an impressive set of environmental scenarios for the UK

government, which I felt could easily be adapted and developed for *Digital Futures* (Berkhout et al., 1998).

Next, I sought to find a way of involving Charles Leadbeater, whose work on the knowledge economy was already very influential. A number of critics of Leadbeater's book *Living on Thin Air* had highlighted its lack of an environmental analysis[14], and the environmental think-tank Green Alliance had issued a standing invitation to Leadbeater to write a piece on greening the knowledge economy. Following discussions with Green Alliance and Leadbeater himself, it was agreed that he would write this as one of the strands of *Digital Futures*. We also decided that we would publish Leadbeater's chapter as a stand-alone pamphlet part-way through the project, in order to generate interest and heighten anticipation for the final report.

Research partners four and five were the think-tanks Demos and New Economics Foundation (NEF). Tom Bentley, Director of Demos, expressed an interest in exploring the relationship between e-commerce, community and social capital. Alex MacGillivray and David Boyle at NEF were keen to look at e-commerce and social inclusion, building on NEF's strong track record in local economic development and urban regeneration.

For the next two strands, I secured joint academic-NGO research teams. Peter Hopkinson from the University of Bradford and Peter James from the UK Centre for Economic and Environmental Development (UK CEED) agreed to look at transport. Planning became the responsibility of the Town and Country Planning Association, together with Professors Andy Gillespie and Simon Marvin from Newcastle and Salford universities. Finally, Ian Christie and Mark Hepworth from Local Futures Group (a small regional development consultancy) were taken on to explore the regional dimension of the digital economy. The final line-up of research partners is shown in Figure 1 (see Chapter 1).

Throughout this period, I was engaged in a parallel set of conversations with potential corporate partners. I distributed the project proposal to around fifty companies in all, drawn from a range of sectors, and followed up with phone calls and emails. The first to sign up were companies with which Forum had some kind of existing relationship: NatWest, BT, Unilever, Kingfisher, The Post Office, Royal & SunAlliance and BP (plus Sun Microsystems, which was the founding partner). I

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[14] See for example, Ekins 1999

continued lobbying others to join, and by January 2000 we were up to a total of twelve, when WH Smith, Ericsson, Nationwide and the South West Regional Development Agency all joined. My biggest concern at this stage was that we had no pure internet companies in the mix, so I redoubled efforts in that sector, and eventually persuaded AOL and Amazon.co.uk to come on board. These last two were a particular coup, as neither had at that stage ever become involved in any environmental or social projects.

To ensure that all partners had a voice in the management and governance of the project, it was agreed that every member of the consortium would appoint a representative to the project steering group. This steering group met five times over the lifetime of the project, and acted as the main forum for strategic decision-making. Appendix 1 contains the minutes of these meetings.

By February 2000, the entire consortium was in place. We decided to give the initiative a formal launch at a Fabian Society/SERA conference on "Environmental Modernisation", which was taking place on 1 February 2000. Patricia Hewitt MP, then DTI Minister for e-Commerce and Competitiveness was scheduled to speak, and after discussions with the DTI, it was agreed that she would announce the launch of *Digital Futures* in her speech.

An accompanying press strategy ensured a reasonable spread of coverage for the launch (see Appendix 4). At this point, Phase 1 ended.

Evaluation of Phase 1

In reflecting on Phase 1, the most significant questions concern the size and shape of the consortium. Was it right to opt for eight research themes? Clearly, the themes selected did not cover all the possible issues that could be explored under the broad umbrella of e-commerce and sustainable development. But they did succeed in providing a reasonable spread across the three bases of economy, society and environment, and so enabled some form of integrated sustainability analysis.

In selecting the research themes and partners, I was anxious to ensure that a rigorous analysis could be achieved within the desired timeframe. The project budget allowed for roughly £20,000 for each theme, so it was always clear that there would not be the capacity for large amounts of primary research. These constraints dictated the

type of methodologies employed within each theme. Although a quantitative survey was included in the "dot-com ethics" theme, most of the research partners relied on a blend of desk-based policy analysis, interviews, case studies and seminars.

Would the project have been better with just four or five themes, each with a larger research budget? In my role as the project co-ordinator, the size of the consortium was not always an advantage. The project derived a lot of its profile and momentum from the fact that so many organisations were involved. Yet the process of managing input from all these partners, and ensuring that they met their research deadlines, was to prove one of the hardest aspects of my role. In the start-up phase, I definitely underestimated the project management burden that would be generated by such a large consortium.

Would I do it differently next time? Possibly, if I were establishing the project again, I would choose a smaller number of research themes, both for greater ease of project management and because as it was quite hard to maintain quality control. But overall, I am glad that the consortium was a large and diverse as it was. It certainly meant that I learned a great deal about managing large and complex projects: the importance of continual communication, the mix of carrots and sticks needed to hit deadlines; the blend of diplomacy and toughness required from the project co-ordinator. The complexity of the consortium meant that I acquired a valuable set of project management skills that I am sure I will draw on for years to come.

4.2 Phase 2: theme research

The bulk of the research within each theme took place between March and July 2000. At the first steering group meeting in January, a clear set of research briefs were agreed, and these were then improved and adapted in the light of the scenarios workshop in February.

Within the broad parameters laid down by the steering group, each research partner was free to employ the blend of methodological techniques that best suited their aims. Some, such as Green Alliance and Demos, relied almost entirely on desk-based research and interviews. Others, such as New Economics Foundation and Local Futures Group, visited local internet projects and wrote up case studies. Most of the research partners were reliant to some extent on access to information and individuals inside the corporate and government partners.

This process of knowledge transfer was aided by a system of "research clusters" that I introduced to foster collaboration between the project partners. Owing to limited time and resources, it was clear from an early stage that the corporate partners would be unable to participate in a detailed way across all eight themes. Instead, I decided to establish a clustering system, whereby each corporate partner would work closely with two of the eight research partners. In the closing session of the scenarios workshop in February, we ran an "ideas marketplace", in which the corporate partners were able to sign up to their preferred themes, until an even spread of partners was achieved across the board. The government partners were more extensively involved across all of the themes, and allocated relevant officials to support this involvement as required. The table below summarises the make-up of the clusters following the scenarios workshop:

Figure 6: The research clusters

Research partner	*Theme*	*Corporate/ Government partners*
Demos	Surfing alone? E-commerce and social capital	AOL Amazon.co.uk Nationwide Sun Microsystems DTI Cabinet Office
Green Alliance	Greening the Knowledge Economy	BT BP Amoco Sun Microsystems DETR DTI
Forum for the Future	Dot-com ethics: e-business and sustainability	Amazon.co.uk Post Office Unilever NatWest Royal & SunAlliance BP Amoco DETR DTI
Local Futures Group	E-regions: the geography of the digital revolution	SW RDA NatWest BT DETR
New Economics Foundation	Sink or surf? E-commerce and social inclusion	AOL Nationwide Post Office Ericsson Amazon.co.uk
SPRU	Etopia? Scenarios for e-commerce and sustainability	Royal & SunAlliance Post Office Nationwide BT Ericsson DETR

		DTI
TCPA	From bricks to clicks: planning for the digital economy	WH Smith Kingfisher SW RDA Nationwide DETR DTI
UK CEED/Bradford Uni	E-commerce, transport & distribution	Unilever Post Office Kingfisher WH Smith DETR DTI

Within my own research for the "dot-com ethics" theme, I employed a blend of research methods:

- ***Desk-based research*** – In order to provide a context for my analysis of the attitudes of internet and dot-com companies to sustainability and corporate social responsibility (CSR), I drew on existing academic and practitioner literature, drawn from the fields of sustainability, CSR and the digital economy. This helped to frame the questions which I used in subsequent interviews and survey work.

- ***In-depth interviews*** – I conducted a series of nineteen in-depth interviews with a selection of dot-com entrepreneurs, policy makers and academics. A full list of interviewees is shown in the table below. These interviews were open-ended, and were designed to complement the survey by providing a richer, more qualitative account of the issues. The discussions focused on the opportunities and barriers to greater social and environmental responsibility amongst technology and dot-com firms.

Figure 7: List of interviewees for the dot-com ethics research theme

NAME	*ORGANISATION*
Tim Jackson	Founder, QXL.com
Georgia Malden	Auctions manager, lastminute.com
Jo Johnston	Henderson Investors
Terence Illott	Head of Business Division, Department for the Environment, Transport and the Regions
Katrina Giles	Community Affairs Manager, AOL UK
Karen Thomson	Chief Executive, AOL UK
Chris Tuppen	Head of Sustainable Development, BT
Alan Jelly	Director of Interactive Brand Services, Unilever
Christina Smedley	Head of Public Relations, Amazon.co.uk
Peter Johnston	Head, New Methods of Work, European Commission
Serena Doshi	CEO, Liv4now.com

Shanker Trivedi	UK Vice-President, Sun Microsystems
David Woolnough	ICT Adviser, Department for International Development
Charlotte Grezo	Head of Corporate Responsibility, Vodafone
Kevin Carey	Director, HumanITy
Richard Barrington	Director (Industry), Office of the e-Envoy
John Browning	Co-founder, First Tuesday
Richard Wray	Editor, Business 2.0

- As mentioned in Chapter 3, I also carried out a quantitative survey of senior managers within 150 technology and dot-com firms, and received responses from 103. A copy of the survey can be found in Appendix 3.

Whilst carrying out my own research, I was also acting as the overall coordinator for the research that was taking place under the other themes. This involved a regular series of one-on-one meetings with each of the research partners, and occasional meetings involving all eight, at which we would exchange ideas and discuss research methods. I also reviewed drafts, and offered extensive comments and feedback on progress at various stages.

Initial drafts of all the eight theme papers were produced by mid-July and circulated for discussion amongst the entire project steering group at a meeting on 27 July. This meeting marked the end of Phase 2.

Evaluation of Phase 2

The second phase of the project was successful, albeit within certain constraints. Chief amongst these was time. Each of the research partners had little more than five months in which to carry out the bulk of their research and writing, and this did create a certain amount of pressure within the research process. More time would have enabled the research partners to explore their themes in greater depth, and might have ultimately resulted in a stronger set of theme papers. Yet this had to be set against the wider benefits of producing the final report within the agreed timescale. Given the pace at which the digital economy was developing and the need to inject a stronger focus on sustainability at the earliest possible stage in that economic trajectory, I remain convinced that the overall advantages of completing the project within a year outweighed the disadvantages of having to fast-track the research.

The use of research cluster also worked well, providing an effective mechanism by which the corporate and government partners could direct their inputs. Working

closely with two of the eight themes ensured that all the partners did not commit to more than they were able to deliver within the timetable. Only one of the companies – Kingfisher - failed to engage at all during this phase, and this was due to changes in management which were beyond the project's control. Unfortunately, there was no way in which Kingfisher could be forced to engage. We simply had to proceed with the research without them.

Finally, it was during this phase that my dual role as researcher and project coordinator was most difficult. At various points, I struggled to free up sufficient time to carry out my research whilst also overseeing the logistics of the project process. There was no choice other than to work harder, which meant that this period was extremely tiring for me. It was at this point that Forum for the Future agreed to appoint a project officer to support me on the practical side of the project management.

4.3 Phase 3: seminars, editing and production of final reports

The end of Phase 2 coincided with the start of the summer holiday period, so there was a natural lull in activity for a few weeks. In September, the pace picked up once again, with a series of theme seminars and consultations.

First, we published one of the theme papers. The steering group had agreed to release one or two interim pamphlets over the course of the project, in order to raise awareness and heighten anticipation of the final results. Given his high profile position in the debates surrounding the new economy, we decided to publish Charles Leadbeater's chapter first. On 11 September, Leadbeater's chapter was published under the title "Mind over Matter: greening the new economy" (see evidence of achievement). The pamphlet was launched at a seminar for policymakers and business leaders, which took place at the Imagination Gallery in Soho. Charles Leadbeater spoke, along with Evan Davis, then Economics Editor of Newsnight and Paul Ekins, Professor of Environmental Economics at Keele University and one of the Directors of Forum for the Future. The launch of the pamphlet also generated a reasonable amount of media interest, including a debate in the Guardian (see Appendix 4: L).

This launch event took the place of a seminar for Green Alliance's theme, but between 16 September and 13 October, the remaining seven theme seminars took place. These

were hosted by a number of the corporate partners. Each seminar had an invited audience of around 30-40 experts and stakeholders, with an active interest in a particular theme. The format of each seminar was the same: the lead authors presented their conclusions, two experts offered a response (drawn from business, academia or an NGO) and there was then a lengthy period for questions and discussion.

In every case, the research partners found the seminars a valuable element of the process, which challenged and helped to clarify their conclusions. During September and October, copies of the draft theme papers were also circulated to a group of expert peer reviewers, who provided further input and useful criticism. A final source of advice was the corporate and government partners, who held separate discussions of the drafts within their research clusters.

The research partners then took all these comments and proposed revisions, and worked them into their final drafts, which were produced for a deadline of 10 November. The theme papers were again circulated to the entire steering group, and were formally agreed at a meeting on 16 November.

From here, the project moved into the editing phase. The project partners were less actively involved, and I embarked on an intensive period of drafting the final book and summary report. The other significant area of activity was the preparations for the final launch conference, although Paul Miller, who was by now working alongside me as the project officer, took primary responsibility for most of the launch logistics.

The editing of the book was relatively straightforward, although it involved close liaison with Earthscan, the publishers, on questions of style, format and design. As soon as the theme papers were finalised, I also commissioned a series of short responses from leading experts in each area. These feature in the book alongside the theme chapters, and are designed to highlight the fact that the debate over e-commerce and sustainability is not closed, but remains ongoing. As stated above, it was always clear that the project would not provide definitive answers, but would illuminate the key questions. The inclusion of the responses reinforced the iterative, reflexive nature of the research process. The table below lists the respondents:

Figure 8: Digital Futures theme respondents

Theme	***Respondent***
Mind over matter: greening the new economy	Evan Davis, BBC
E-topia: scenarios for e-commerce and sustainability	Amory Lovins, Founder, Rocky Mountain Institute and author *Natural Capitalism*
Dot-com ethics: e-business and sustainability	John Browning, co-founder, First Tuesday
Surfing alone? E-commerce and social capital	Madeleine Bunting, The Guardian
Sink or Surf? Social inclusion in the digital age	Kevin Carey, Director, HumanITy
Towards the sustainable e-region	Prof. Jim Norton, head of e-business, Institute of Directors
Virtual traffic: e-commerce, transport and distribution	Stephen Joseph, Director, Transport 2000
Bricks versus clicks: planning for the digital economy	Sir Peter Hall, Professor of Planning, University College London

The theme chapters were edited and typeset just before Christmas. In January 2001, I started writing the summary report. This distilled the research process into a 50-page document, which could be circulated to decision-makers. To simplify the project's findings and make them more accessible, I drew out ten headline principles – which we nicknamed the "ten dot-commandments" – and organised the material around these. The summary report also included a clear set of recommendations for government and business.

Also in January, we published a second pamphlet: this time, the "dot-com ethics" theme. This was simply launched to the press, rather than through an event. It succeeded in generating a good spread of media coverage, including articles in the Financial Times and Daily Telegraph (Appendix 4: N, P). The technology and e-business press was particularly interested in the dot-com ethics survey results, with the result that I was invited to contribute articles to a variety of publications, including a feature-length extract from the pamphlet in the magazine *Business 2.0*.

The book and summary report were published at the final *Digital Futures* conference on 1 March 2001. This was a large event at the British Library, with over 200 delegates and a range of high-profile speakers including:

- Patricia Hewitt MP, Minister for e-Commerce
- Michael Meacher MP, Minister for the Environment
- Martha Lane Fox, Co-founder, Lastminute.com
- Brian Eno, musician and record producer
- Jonathon Porritt, Programme Director, Forum for the Future
- Karen Thomson, Chief Executive, AOL UK

Workshop sessions were also held on each of the eight research themes, at which the research partners presented their findings.

The conference was a great success: it attracted a high-level audience drawn from across the sectors, and the speakers provided a good mix of thoughtful and provocative insights. It also attracted a fresh wave of media interest, and a variety of articles were written about the event and final reports in general and specialist publications.

At 6pm, once the formal proceedings of the conference were at an end, the speakers and project partners headed to Home House for the post-conference party. The formal activities of the project were complete, and the only remaining task was to toast its success and thank all those who had made it possible.

Evaluation of Phase 3

Phase 3 was the busiest stage of the project but also the most effective. It was in this period that the project became visible to outside audiences, initially through the theme seminars, and later through the publications and launch conference.

The seminars were judged by all involved to have worked well as a way of gathering critical input on the theme papers. Inevitably, some seminars were better attended than others, or had a better quality of discussion. But the quality and richness of each of the papers improved as a result of being discussed in that way.

The editing process went smoothly, and did not create any real problems. The only issue of slight concern was how to edit a significant volume of material in just a few weeks, whilst also drafting the summary report. But in the end, I found the editing process one of the easier – and most enjoyable – parts of the project.

For me, the biggest highlight of the project was the final conference. It was fantastic to see the hard work of many months coming to fruition at such an exciting event. Partly because of the interesting speakers, and partly because it was a sell-out event, the conference had a real energy and dynamism, which rubbed off on all those who attended. I was particularly pleased that the audience contained such a mix of sectors and participants, which fitted well with the overall approach of the project.

Promoting the project in the media also taught me a lot about running a press and PR campaign. In September 2000, I appointed Fishburn Hedges, a PR company, to assist with this process, and they were very helpful in ensuring that information about the project was circulated to journalists, and that I had the necessary media training to speak about it convincingly. This was another part of the project which I enjoyed, and which has stood me in good stead in my subsequent work at Forum for the Future and Demos.

5. Results and conclusions

This chapter outlines the results and conclusions of the project. These take a variety of forms:

- The scenarios
- Dot-com ethics survey results
- The summary report
- Press coverage
- Seminars and conferences

Each of these is discussed in detail below. The account in this chapter should be viewed alongside the evidence of achievement.

5.1 The scenarios

What will the e-economy look like in 2010 or 2020? As discussed in chapter 3, one of the difficulties we faced in the project was mapping the range of possible futures. Our solution was to develop a set of scenarios for the evolution of e-commerce and its relationship to sustainability. This process was led by the research team from SPRU, but the entire project consortium also became involved through the workshop in February 2000.

These four scenarios – which were named *CyberSpace, Digital Islands, CyberSociety and Networked Communities* - provided an overall context for the other research themes research, ensuring a consistency of approach across the project.

The scenarios are not intended to predict what will happen; rather, they highlight current choices, given the range of possibilities that the future holds. The most important lesson they offer is that if the right choices can be made at this early stage in the digital economy, it will be possible to maximise its sustainability potential and avoid some of the pitfalls.

Summaries of the scenarios are detailed below (more details and a selection of key indicators under each scenario can be found in chapter 2 of the Digital Futures book).

- ***CyberSpace***

The dot-coms have taken over. CyberSpace is a world dominated by multinational corporations and consumerist values. It is a hyper-mobile, transport-intensive future, where technology is used to fuel high levels of economic growth, with little regard for any negative environmental or social consequences. Regulatory controls at both the national and global level have weakened. National governments are relatively powerless, their remit limited to implementing the rules of international trade. The US dollar is the global online currency, and both the pound and the euro have been abolished. A globally convergent network, based primarily on mobile devices, leads to an explosion in e-business, which accounts for 25% of the UK's GDP by 2010. But alongside this, there is a growing digital divide and limited regulation of access or content. Environmental indicators are also negative. Greenhouse gas (GHG) emissions increase and 11% of the UK road network is at 100% stress by 2010.

- ***CyberSociety***

In CyberSociety, the new economy is increasingly shaped by a 'one world' ethos. Partnerships flourish, as different sectors work to harness digital technologies for environmental and social, as well as economic, goals. Universal internet access is achieved through open networks. Most people use broadband fixed networks but mobile internet access is also popular. High-tech devices are cheaper, and most are now leased to users then returned for recycling. Stable economic growth is maintained. Innovation continues at high rates and is shaped by sustainability objectives. There is selective migration to e-commerce, rising to 20% of UK GDP by 2010. Government has truly embraced the internet, and all public services are available online. The digital divide narrows, and significant investment is made in spreading the benefits of the internet to developing countries. Virtualisation of products and services, high investment in public transport and improved delivery methods lead to a significant reduction in GHG emissions. ·

- ***Digital Islands***

The Union Jack is flying high. This world is shaped at the national level with UK firms winning out over large global players. Consumerism still prevails, but the pace of globalization has slowed. There is moderate but unstable economic growth. Technological convergence is limited, and online 'walled gardens' are the norm: closed networks controlled at a national level. The lack of common standards hampers the growth of e-commerce, and it accounts for no more than

15% of UK GDP by 2010. Although 90% of the population has internet access, this is mostly through digital TV packages, which don't offer full access to the global internet. Wealthier users can buy access to open networks. This is a car-dependent future, with little investment in public transport. Greenhouse gas emissions rise, and 13% of UK roads are at 100% stress by 2010. Unemployment increases to 9% of the economically active population.

- ***Network Communities***

This is a world of communitarian values, where the power of global institutions is checked through stronger democracy and accountability at a local level. Following a massive backlash against globalisation, there is far greater emphasis on the self-reliance of local and regional communities in shaping technology and markets. Markets are more fragmented and international trade declines. Economic growth falls to low but stable levels. Technological convergence is limited, and e-commerce accounts for only 5% of UK GDP by 2010. The internet is viewed as an important tool in strengthening communities. New forms of local electronic exchange and e-currencies are popular, and the use of the internet for information and public services also increases. By 2010, GHG emissions fall to 35% below 1990 levels. Car sharing and home deliveries lead to a reduction in traffic congestion. Levels of equity also improve, also tensions arise over reconciling social and environmental objectives.

5.2 Dot-com ethics survey results

Chapter 3 describes the quantitative survey that formed an important element of my research under the "dot-com ethics" theme. Some of the key findings are detailed below:

- 65 per cent said that social and environmental issues are important or very important to their company (28 per cent said they were slightly important, 7 per cent unimportant).

- 92 per cent said that environmental and social issues are important or very important to them personally.

- 53 per cent thought these issues would be more important three years from now.

- 79 per cent agreed that the positive effects of e-commerce on society would outweigh the negative (21 per cent neither agreed nor disagreed).

- 58 per cent agreed that e-commerce will have a positive effect on the environment (29 per cent neither agreed nor disagreed, and 13 per cent disagreed).

- 62 per cent agreed that e-commerce will enable companies to be more responsive to consumers' ethical and environmental concerns (17 per cent neither agreed nor disagreed, 21 per cent disagreed).

- 57 per cent agreed that companies with a good environmental and social reputation are likely to benefit from improved financial performance (30 per cent neither agreed nor disagreed, 13 per cent disagreed).

These results appear to suggest that e-business leaders are broadly supportive of the sustainability agenda, even if they do not articulate their concerns in precisely these terms. In some ways, this is unsurprising: the majority of the companies we surveyed are run by highly-educated, creative people aged 35 or under, who are likely to have a reasonable level of environmental and social literacy. The e-generation has, in the words of Don Tapscott, 'grown up digital' (Tapscott, 1998). Yet it has also grown up green, with a high level of awareness of global issues, and a more radical, unconventional approach to doing business.

However, the survey also highlighted a sharp gulf between theory and practice. On asking whether companies have any systems or policies in place to address these issues, we found that:

- 79 per cent of companies do nothing to measure or manage their environmental impacts.

- 66 per cent do nothing to measure or manage their social impacts.

- 82 per cent do nothing to measure or manage their transport impacts.

- 83 per cent offer no staff training on environmental or social issues.

This suggests that IT and e-commerce companies still have a lot to learn about the basic principles of environmental and social management. A recent survey by PIRC supports this view, finding that the IT sector performs worst in terms of environmental policies and reporting. (PIRC, 2000))

When the survey asked why companies had no policies and systems in place, three reasons stood out:

- *Lack of perceived impacts (75%)* – The survey shows that many companies do not recognize that they have any significant impacts.

- *Lack of time (58%)*– The e-world operates at breakneck speed, leaving little time to reflect or act upon these issues.

- *Lack of expertise and resources (54%)* - Many e-businesses operate under considerable financial pressure, and cannot devote resources to these issues. Often there is insufficient staff expertise to develop policies and put systems in place.

5.3 The summary report

In the summary report, the project's conclusions are summarised in the form of ten headline principles. An extract from each of these follows:

1. Beyond the hype, there's hope...

E-commerce creates new opportunities for environmental and social sustainability

Predicting the future is a hazardous business. History is littered with prophecies that went awry. Take Charles Duell, the US Patent Commissioner, who in 1899 proposed shutting down the Patent Office on the grounds that 'Everything that can be invented has been invented.' Or Thomas Watson, the former CEO of IBM, who declared in the late 1940s that 'there is a world market for maybe five computers' (Margolis, 2000).

Forecasting trends in information technology is particularly tricky. Who could have anticipated the white-knuckle ride of the e-commerce sector over the course of 2000? The year opened on a wave of dot-com euphoria, as high-tech shares soared to record highs. The merger of AOL and Time Warner in January signalled that the internet

had come of age, as an old economy giant was swallowed by a new economy upstart. E-commerce mania hit a peak in the UK on March 15th, when lastminute.com was floated on the stock market at a value of £730 million. A month later, the market crashed, and the lengthy comedown began. A string of high-profile dot-coms collapsed and many began to wonder what all the fuss had been about.

Yet despite the boom-and-bust of the dot-com startups, the underlying significance of e-commerce remains undiminished. E-tailers like Amazon and Lastminute are the most visible tip of the e-commerce iceberg. Beneath the surface, a more profound transformation is taking place, as traditional sectors embed digital technologies in all aspects of their operations. Now, in the early stages of the e-revolution, is the right time to pose some IAQs (infrequently asked questions) about the potential of e-commerce to bring wider benefits to society. Taking up the sustainability challenge requires creativity, innovation and alliance-building. It requires a different way of thinking. But this is what e-businesses are so good at. We need to channel their dynamism and creativity for the benefit of all: to turn the new economy into a force not just for economic good, but for social and environmental good too.

The lack of engagement by the e-world in corporate social and environmental responsibility is based on some powerful myths, which needs to be debunked:

- The first is the *myth of virtuality*; the idea that because e-commerce operates in the virtual space of the internet, its impact on the physical world is negligible or non-existent. In reality, as our research shows, e-commerce can have a wide range of impacts, and e-businesses face many of the same dilemmas over ethics, supply chains, energy use, transport and waste as their bricks and mortar counterparts. Innovative applications of internet technology could help to solve some of these problems, but only if the e-world acknowledges its impacts, and devotes some of its energies towards managing and reducing them.

- The second is the *myth of immaturity*; the idea that e-commerce is at such an early stage that it is unfair to expect it to meet the same environmental and social standards as the rest of business. This argument might hold water, were it not for the constant claims that e-commerce represents the most seismic shift in business since the Industrial Revolution. Whether or not such hype is justified, e-commerce is now a sufficiently established feature on the business

landscape for governments, NGOs and other stakeholders to start asking questions about its environmental and social performance. With permanence comes power, and with power comes responsibility.

- The third is the *myth of techno-determinism;* the idea that technology has a market-led trajectory of development that is unaffected by wider social and political factors. The truth is that we cannot know what the long-term effects of the internet will be. The mistake is to regard it as something 'out there' that cannot be shaped to fit a political vision. The internet *per se* may do little to advance the cause of sustainable business, but the internet plus enlightened management and effective public policy is another story entirely.

2. The e-economy can access all areas

The digital revolution could spread benefits to all regions of the UK and all sectors of society.

In e-policy, increasing emphasis is being placed on the need to bridge the 'digital divide'. The UK government has set an ambitious target in this area, with its pledge of universal internet access by 2005. Yet it is clear that the digital divide will not be solved through access alone. In some ways, the roll-out of technology is the easiest part of the problem to address. By 2005, most households in the UK will have affordable internet access – whether via PC, mobile phone, or digital TV. A more fundamental challenge is to tackle the underlying divisions that contribute to the digital divide: the skills divide, the regional divide, the social divide.

Our research examined the regional divide and found that the benefits of the digital economy are spread very unevenly. As one entrepreneur explained, 'If venture capitalists can't drive to it, they don't invest in it. Start ups go where investors are.' This is reflected in the geographical make-up of the UK's digital economy:

- Metropolitan dominance. Larger cities dominate the information economy at the regional and national levels – London most obviously, then regional capitals, such as Bristol, Birmingham, Edinburgh and Leeds.
- North–South divide. There is a deep north–south split across the UK: the digital economy fans out from London northwards to Cambridge and Birmingham and westwards and southwards in the M3–M4 arc.

- Local divides. There is considerable local variation in the depth of the digital economy – it is glaringly shallow in vast swathes of the UK, both north and south and within London itself.

Policies like clustering can also work against sustainability. The concentration of the digital economy in already prosperous - and congested - areas means that these areas will become steadily less sustainable – a state of affairs prefigured in Silicon Valley, which is badly polluted as a result of over-development. Socially, too, clustering means that the less affluent suffer from a lack of affordable housing and competition for good schools: a problem that is already acute around the Cambridge and Thames Valley clusters in the UK.

So the new information economy has no intrinsic dynamic towards sustainability. Yet if we can find ways of spreading its benefits around, the e-economy could become a powerful vehicle for regional sustainability, opening up opportunities for marginalised areas and communities, and helping to change the unsustainable geographic split between work and home. To make this happen, Regional Development Agencies (RDAs) and local authorities need to strengthen the links between e-commerce, sustainability and regional governance. At the moment, sustainability is seen as an add-on, rather than central to the development of the new economy, and there is a risk that it will be marginalised further by the pressure to deliver economic growth and investment at all cost. Without a more integrated policy framework, the new economy is more likely to reflect, rather than transform, the social, environmental and economic maps of the UK.

Another focus of our research was on what lies beyond the digital divide. If we look ahead to a future situation of near-universal internet access, what impacts will this have on local economies and communities? Our research suggests that the low-income market, which many retailers currently shun, will become increasingly significant. There are millions of people in the UK who lack bank accounts or credit, and so are excluded from shopping online. E-commerce could be used to bring these people into the digital economy, but only if we can invent locally-based e-markets and new forms of electronic currency – some based on time rather than money – that are more effective in linking local needs with local resources.

Although they may be relatively wealthy in terms of time, skills and other resources, excluded people tend to lack enough money to set up mainstream businesses. E-

commerce lends itself to converting almost anything of value into electronic forms that can be exchanged over the web. This principle could be extended to enable people to barter goods, services or time online – reinventing social currencies such as LETS (Local Exchange and Trading Systems) for the digital age.

3. Community is alive & clicking

Online relationships, supported by e-commerce, can add a valuable extra dimension to real world interaction.

Some commentators have expressed fears that the internet and e-commerce will erode social relationships and undermine local communities. We believe that the trend is in the opposite direction: towards the creation of on-line relationships as a supplement to, not a substitute for, existing social networks. Historically, commerce and social networks have a long tradition of mutual dependency, from gentlemen's clubs to Tupperware parties. Our research shows that e-commerce is no exception. All sorts of social networks are being created by the internet, and it is primarily e-commerce which is funding the technology, infrastructure and software that will enable these networks to flourish. For example, many people are gaining relatively low-cost internet access through digital TV, largely because TV companies have signed lucrative deals with retailers to sell their goods and services through the same channels.

In the early years of the internet, there was a lot of excitement about the potential for 'virtual communities', which existed purely online. Such communities do exist, but far more significant and widespread is the use of the internet to strengthen existing social networks. Even if the initial contact with an individual or organisation is electronic, it often turns into a face to face relationship. There are many examples of this trend: internet banks in the US have recently started opening branches; the Compuserve police discussion forum now holds an annual barbecue; and the Scottish community on AOL's Local Life channel have regular social get-togethers. Some say the internet will make us placeless. Our research points in the opposite direction. As MIT professor Bill Mitchell puts it, 'the power of place will still prevail.... Sometimes we will use networks to avoid going places. But sometimes, still, we will go places to network' (Mitchell, 2000).

E-commerce could also be used to plug some of the 'leaks' in local economies, by keeping money flowing locally. This has been identified as a key issue in the

Government's National Strategy for Neighbourhood Renewal – with the idea being that local cash generates local jobs and more local spending (SEU, 2000). Already, there are positive signs that small businesses are waking up to the potential of the internet. Government figures show that two thirds of SMEs and 55 per cent of micro-businesses are now online.[15] Only a small proportion are actually trading through the internet, but of those that are, many are finding that e-commerce can help them to reach new markets and new customers. Ten local shops have closed every day over the last decade. E-commerce could help to reverse this trend, if new forms of local electronic market can be developed, which provide SMEs and local shops with a foothold in the e-economy.

This idea is slowly taking off: AceNET in Ohio has100 speciality food shops and farms selling their wares online; the US-wide Doitbest.com network now involves 4,400 independent hardware stores; and in the small town of Vara in Sweden, Ericsson has been supporting the development of a local online market. But local e-markets could be developed a lot further. One idea is for the creation of Guaranteed Electronic Markets (GEMs), which would consist of a vast network of local exchange, bringing many informal skills and assets into the money economy, with the guarantee of insurance cover for buyers and sellers (Rowan, 1999)

Such ideas will not succeed without some form of government support. Left unchecked, market forces could mean that e-commerce becomes another nail in the coffin of the local economy, by sucking yet more money and resources away from local businesses towards large online firms. Yet with advice, support and the right policy framework, local e-commerce could become a potent source of innovation and creativity in the new economy, and could spearhead a renaissance of distinctive local high streets.

4. 'e' is for environment

E-commerce could help to cut energy and resource use, and improve environmental productivity

E-commerce is all about more efficient ways of doing business, and this could go hand-in-hand with improvements in energy and resource productivity. One influential report, by the Washington-based Centre for Energy and Climate Solutions, suggests that the internet will create year-on-year reductions of up to 2% in the

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[15] www.ukonline.gov.uk/StatMap

energy intensity of the US economy. Joseph Romm, the report's author, is bullish about the potential for what he calls 'e-materialisation'. He points out that despite high levels of economic growth in the US between 1997 and 1999, energy consumption hardly increased at all, suggesting that the digital economy could at last make it possible to decouple economic growth from environmental impacts (Romm, 1999).

Our research uncovers plenty of environmental opportunities. Firstly, there is scope for *virtualisation* – the spread of intangible products like entertainment and software in the form of computer files. Although this still requires equipment and energy, it cuts out the environmental costs of manufacture and transport. Virtualisation is happening already: banking and accounting take place online; MP3 music files are distributed in digital form; and the Britannica.com website has replaced the need for millions of leather-bound encyclopaedias.

Environmental benefits could also flow from B2B e-commerce. Re-engineering supply chains through B2B exchanges, and centralising procurement, can lead to less warehousing, less transportation and less wastage overall. There could be gains, too, from new business models enabled by internet technology. Auction sites like eBay, which allow the consumer-to-consumer trading of second-hand goods, can prolong the useful life of products and reduce waste. It is fair to surmise that of the $3bn of stuff that has been traded on eBay since it was launched, a reasonable percentage would have ended up in landfill. In the longer term, futurologists such as Jeremy Rifkin suggest we may shift to an e-economy based more on access than ownership, as the short-term leasing of many goods and services becomes possible online (Rifkin, 2000).

Finally, e-commerce could support green consumerism. Traditionally, the barriers to this have been the difficulty of accessing products and the limited availability of reliable information. E-commerce is ideally suited to overcoming these obstacles, and it can only be a matter of time before a large retailer launches a green or ethical shopping site. At the moment, this market has been left to a handful of small players, which lack the scale to reach a wide consumer audience. And there is also the potential for green search engines, which trawl the web to find products that meet high social or environmental standards.

5. HTML = Heavy traffic made lighter?

With the right policy framework, e-business could create more efficient logistics and distribution systems.

Few people would disagree that our transport system is under increasing stress. According to DETR figures, 6 per cent of major roads in England are at 100 per cent stress, and the average traffic speed in central London is the same now as it was at the end of the 19th century. The shift over the last decade to just-in-time delivery and the growth in transport modes such as heavy goods vehicles (HGVs) have exacerbated the problem. Now e-commerce is changing things again. But will its overall effects be positive or negative?

If we look at the direct impacts, there is a fair amount to be optimistic about. E-commerce seems likely to make distribution more efficient and improve the utilisation of vehicle capacity. According to one recent study, home shopping will reduce car-based shopping travel by 5 per cent by 2005, and 10 per cent by 2010 (NERA, 2000). In the B2B market, further efficiencies will flow from the restructuring of supply chains and the emergence of new B2B exchanges.

Yet there is also the potential for negative effects. E-commerce tends to make greater use of air freight in order to shorten delivery times, and of light goods vehicles (LGVs) to deliver products to consumers' homes. Unless we are careful, the rise of e-commerce could lead to busier skies and residential streets jammed with half empty white vans. And in the B2B market, e-commerce makes it easier to source products from a larger number and wider geographic range of suppliers. The evidence available suggests that this phenomenon is already occurring. For example, one Digital Futures partner found that moving to e-procurement led to a tenfold increase in its supplier base.

The indirect effects of e-commerce on transport are more difficult to predict. The worst case scenario is that we end up with grocery delivery vans jamming up residential neighbourhoods, increasing congestion and pollution, while consumers, freed up from the time they would have spent in the supermarket, drive off in their cars to do yet more shopping. More consumer research is needed if we are to better understand these second-order effects.

Some of the effects of e-business are already anticipated in the Government's sustainable distribution strategy, and the forecasts that underlie it. Yet there are other developments that could undermine current policy assumptions. For the next few years, any growth in home shopping will be based on the existing infrastructure of supermarkets (for order picking) and, to a lesser extent, distribution channels (parcels carriers and collection points). However, there is a critical level – probably between 5–10 per cent of total retail sales – beyond which there are likely to be significant changes. These will include the closure of some supermarkets, and the creation of new distribution channels, possibly including purpose-built drop-off and collection networks. New distribution systems are likely to rely on car-based collection, and could therefore undermine the Government's longer-term objective of reducing car dependence.

Overall, our research shows that the debate is finely balanced. E-commerce could help to make transport and distribution more environmentally sound, but it also has the potential to increase the burden on our already stretched transport infrastructure. Now is the time to take precautionary action to ensure that the digital economy contributes to wider policies for sustainable transport.

6. Trust me, I'm a dot-com

E-commerce is changing the relationship between companies and stakeholders, and could usher in a new era of corporate transparency and accountability

Our survey of technology and internet companies suggests many e-businesses still have a lot to learn about the basic policies and systems necessary to deliver social and environmental improvements. Closing the gap between ideals and action is a priority for any e-business seeking to establish a reputation for good corporate citizenship. Below are a few practical steps that any company – even a small start-up – can take to make their operations more sustainable.

- Carry out a comprehensive assessment of the environmental and social impacts and opportunities created by your operations.
- Develop an environmental and social policy with clear, achievable targets for improvement.
- Assign responsibility for delivering these targets, at both board and operational level.
- Report your progress on your website. Make it a selling point.
- Talk to, and learn from, other companies, NGOs and government.

For dot-coms, there is a strong business rationale for investing time and money in improving environmental and social performance. As well as opening up new markets, it can help to build more meaningful bonds of trust and loyalty with consumers. Currently, debates about trust on the internet are focused on privacy and the security of transactions. As e-commerce becomes more sophisticated, consumers are likely to want assurance on a wide range of issues – including the social and environmental credentials of products and services – and companies will have to capitalise on their reputation to offer that assurance.

7. But right now, matter matters more (not less)

Potential environmental gains will not be realised without a concerted effort from government and business to align e-commerce with wider sustainability objectives.

At a time when so much is changing as a result of e-commerce, we must avoid slipping into a sense of complacency about the inevitability of positive outcomes. The environmental benefits from virtualisation, dematerialisation and increased efficiency will not flow automatically – consumer preferences and business practices take a long time to change. The investment in capital, time and creativity needed to bring about these changes is considerable. We need to make sure that people have the information, and incentives, to help them to shift systematically to more sustainable patterns of production and consumption.

Above all, we must not underestimate the rebound effect, whereby the extra environmental 'space' created by new technology is swallowed up by a desire to consume ever more exotic products and services. Business can always find more efficient ways to deliver products and services, but if this just means that we buy more, then any environmental gains are cancelled out. It is also important not to underestimate the impacts of the technology itself. As our homes and offices become filled with 'intelligent' appliances, wired up and communicating with one another 24 hours a day, energy consumption could rocket. Already, the growth of 'server farms' – warehouses of super-computers which form the backbone of the internet – are placing a strain on electricity supply in places such as Silicon Valley and London.

There is a sense of déjà vu to this whole debate. In the 1970s, when '*Limits to Growth*' was published, critics responded to its gloomy predictions by insisting that technological innovation would outpace environmental problems (Club of Rome,

1972). Thirty years on, a cursory glance at any key environmental indicator shows that this optimism was misplaced. Although new technology has enabled a dramatic increase in resource productivity, extra consumption is outweighing these gains.

A recent report from the World Resources Institute highlights this problem in stark terms. Based on analysis of five advanced industrial economies (the US, Germany, Japan, Austria and the Netherlands), it shows that pollution and waste have continued to rise exponentially, despite the much-vaunted shift towards knowledge-based economies. As the report, points out: 'The resource efficiency gains brought about by the rise of e-commerce and the shift from heavy industries towards knowledge and service-based industries have been more than offset by the tremendous scale of economic growth and consumer choices' (WRI, 2000).

For this reason, some environmentalists dismiss claims for e-commerce as a successor to the 'paperless office' in a long line of techno-optimist myths. The lesson from the last thirty years is that technology is no panacea. Now – at this critical juncture in the development of the new economy – is precisely the time when we need to devote more effort to ensuring that technology and innovation are channelled towards sustainability. The scale of the challenge should not be underestimated.

8. Smart technology needs smart institutions

Technology is developing at breakneck speed. Institutionally we are struggling to keep up. Sustainable e-business will depend not just on technological innovation, but also on social and political innovation.

Technology often catches us by surprise. The e-commerce explosion is no exception. Government and NGOs sometimes give the impression of being caught off guard, without adequate tools or policies to make the most of the internet. Business has reacted more quickly to the digital revolution, but its innovation has been narrowly directed, towards faster computers, smaller gadgets or broader bandwidth. If we are to unlock the environmental and social potential of e-commerce, we need to move the focus of innovation away from pure technology towards broader patterns of innovation, through which e-commerce contributes to sustainable systems of energy use, transport, production and consumption.

Without social and political innovation, we will fail to make the changes necessary for sustainability. An example is the development of the car. Over the past thirty years,

engines have become many times more fuel-efficient but the overall environmental impact of cars has still increased. While the technology has improved, we have not managed to develop new models of ownership like car pooling in order to reap the benefits for sustainability.

Ambitious targets for the online delivery of public services have driven e-government high up the agenda of central and local government. But discussions of e-government tend to take place in isolation from debates about sustainable development, and often focus on technical service delivery – such as paying council tax online - while ignoring some of the more fundamental ways in which new technologies can empower citizens and improve quality of life at a local level, for example by reducing traffic congestion and revitalising local economies.

Civic organisations, from political parties and pressure groups through to schools, churches and residents groups, are failing to take full advantage of internet technologies. There are useful lessons that can be applied from the e-commerce world about how to use the web more effectively for fundraising, marketing and volunteering. On the margins of the civic sector, a new breed of organisation is emerging – one which fully embraces the internet and uses it to work in ways that would be impossible through other media. These are smart institutions, which combine technological innovation with other forms of innovation.

We also need innovative social and environmental entrepreneurs from within the e-generation. In the US, groups such as Silicon Valley Community Foundation have sprung up to direct entrepreneurs' time and newly-acquired wealth into social and community initiatives. In the UK, fewer people had a chance to make their millions before the downturn in the market, but a handful have started to invest in social projects, such as Tim Jackson, the founder of QXL, who recently established a charitable trust. Kate Oakley, a leading writer on the new economy, suggests that e-entrepreneurs will eventually make a contribution to the social fabric of our towns and cities equivalent to that of the great 19th century industrialists. Just as the Victorians built museums, libraries and universities, so these 'new Victorians' will seek to 'channel their wealth into good works of all sorts, from soup kitchens to school programmes, AIDS hospices to playgrounds' (Oakley, 2000).

Nonetheless, the bulk of this activity still takes place in the realm of philanthropy, and it is less common to find e-businesses that deliver social and environmental

benefits through their core activities. There are exceptions – mostly small start-ups – some pioneering examples of which are listed below:

- www.greenstar.org – supports communities in the developing world through a network of internet-enabled community centres, which offer a combination of web access, education, tele-medicine, renewable energy and micro-finance.

- www.viatru.com – promotes fair trade and enables artisans and producers in the developing world to access global markets through e-commerce.

- www.ethical-junction.org – a B2C portal for organic and fair trade products, with its own virtual 'ethical high street'.

- www.greenorder.com – a B2B site enabling public and private sector organizations to purchase environmentally-friendly products, ranging from building materials to office supplies.

- smartchange.org – a social marketplace which enables people to donate volunteer time and money to charities online.

- www.flametree.co.uk – supports companies and employees seeking a better 'work-life balance', with web-based advice and consultancy on sustainable work patterns.

- www.goodcorporation.com – encourages companies to meet a set of social and ethical standards set out in the on-line GoodCorporation Charter

9. We need to join the dots

Partnership will be key to the creation of a sustainable digital economy. Dot-coms, dot-govs and dot-orgs will need to work together more often and in new ways.

Dot-coms are no strangers to partnership. Web success depends on forging alliances – with suppliers, technology firms and content providers. But as e-business begins to tackle sustainability, these networks must expand to include meaningful partnerships with government and NGOs. We need, literally, to join the dots. Dot-coms, dot-orgs and dot-govs need to share ideas and work together to embed sustainability in every area of the new economy.

The barriers to these alliances are not as great as one might imagine. Dot-coms and dot-orgs have a surprising amount in common. Both seek to challenge the established conventions of the old economy, and are prepared to take risks and push for change. E-commerce blurs the old boundaries: it brings the high street into our homes, and brings government out of its Whitehall corridors. The web is a neutral meeting point for new partnerships and new alliances.

It is not just a matter of asking business to adapt. NGOs are good at pressuring companies, but they also need to build trust, identify common ground and support companies to get things right at the design stage. And government needs to work hard to counter its image as a barrier to be leapt over, an obstacle to innovation. It needs to seek out good practice and use its influence to encourage it elsewhere. It should not shy away from intervention, but should intervene creatively, to foster innovation, not stifle it.

Both NGOs and government can learn from the fluid alliances and models of co-operation that sustain the dot-com world. In a sense, the Digital Futures project is an experiment in these new ways of working: drawing different sectors together to explore the challenges and opportunities of e-commerce in a collaborative way. Such models will need to be replicated throughout the new economy.

10. It's about time

A year in cyberspace is said to be four months. As the internet accelerates the pace of life, we need to change our attitude to time and long term responsibility.

Time. None of us seems to have enough of it. And the internet makes things move even faster. Back in 1965, Gordon Moore, co-founder of Intel, noted that over the previous six years, the number of transistors that fitted on a microchip had doubled every eighteen months. He predicted this trend would continue and history has proved him right. Moore's Law means that by 2015 there will have been a 137 billion-fold increase in the power of chips in just fifty years.

As computers have accelerated, so have we. Despite the promise that technology would usher in an age of leisure, many of us have entered the digital age working longer hours under greater stress than ever before. And e-commerce is playing its

part in the inexorable rise of this 24/7, always-on society. Dot-com culture is hooked on speed. Instant fulfilment is the norm, and everything operates in 'internet time'.

The destabilising pace of change in the new economy can erode our capacity for reflective thought. Sociologist Richard Sennett warns of the 'corrosion of character' in the modern workplace; the slow atrophy of our sense of purpose, loyalty and commitment, which can only thrive over the long-term. He asks: 'How do we decide what is of lasting value in a society which is impatient, which focuses on the immediate moment? How can long-term goals be pursued in an economy devoted to the short-term?'(Sennett, 1998).

Another downside of moving so quickly is that the e-world may fail to spot new threats and exploit new opportunities. Already, prominent voices within the industry such as Bill Joy, Chief Scientist at Sun Microsystems, are warning of the dangers posed by the convergence of IT with other emerging technologies. In a powerful essay published last year in *Wired*, Joy argues that 'The 21st-century technologies – genetics, nanotechnology and robotics – are so powerful that they can spawn whole new classes of accidents and abuses.' As a result, he admits to feeling 'a deepened sense of personal responsibility – not for the work I have already done, but for the work that I might yet do, at the confluence of the sciences' (Joy, 2000).

Speed is not the unqualified good that some would have us believe. Slowness can also be a virtue. The e-world sometimes needs to think in longer time horizons, which encompass not just the next business decision, but also the social and environmental impacts that those decisions will have. An important conclusion of our research is that thinking strategically about e-business and sustainability requires us to cope with several different time cycles. Cycles of investment and innovation on the internet which are measured in weeks and months. Cycles of investment in the physical infrastructure of energy systems, roads and towns which are measured in decades. And cycles of change in the natural environment, many of which are measured in centuries or millennia.The way we view time is key to creating a sustainable digital economy. It doesn't mean abandoning the hectic pace of e-life, but it does require us to switch lanes occasionally. Things look different from the slow lane. There is time to pause, reflect, and consider the long term issues that really matter.

5.4 Seminars and conferences

Another important result of the project was the conference on 1 March 2001, which is described above. This was significant, not only as an opportunity to launch the project findings, but as the first conference on the theme of e-commerce and sustainability in the UK. It succeeded in drawing a diverse audience from government, business, academic, the media and the voluntary sector to discuss and debate these issues.

Yet this was not the only conference or seminar at which the findings of the project were debated. As part of the project dissemination process – both in the run-up to and after 1 March 2001 – I gave presentations at several other events.

The interest generated by the project led to a number of invitations to speak, both in the UK and internationally. These presentations are listed in full in Appendix 6. Some of the more interesting include:

- In March 2000, I gave evidence to the House of Lords Committee on the European Union, as part of their inquiry into e-commerce.

- In July 2000, I spoke at a seminar at the city firm Henderson Investors. This was an event aimed at the ethical investment community, designed to explore the links between e-commerce and socially responsible investment.

- In October 2000, Jonathon Porritt and I made a presentation on the project to several members of the Policy Unit at No.10 Downing Street

- In October 2000, I gave a keynote speech in New York at a New York Academy of Science symposium on e-commerce and the environment.

- In May 2001, I spoke at an Organisation for Economic Co-operation and Development forum on "Sustainable Development in the New Economy" in Paris.

- In June 2001, I gave a presentation to the annual meeting of the European Information Technology Organisation (EITO) in Istanbul, Turkey.

- In October 2001, I gave a keynote presentation to a conference on sustainable business at the IMD Business School in Lausanne, Switzerland.

Participating in such events enabled the project results to reach a far wider audience, and spread the debate about e-commerce and sustainability into a number of different policy, academic and practitioner communities.

5.5 Articles and media coverage

The final element of the project's results is the media coverage that it generated. Again, this was an important means by which the results were disseminated into new communities of policy and practice. For example, the extensive coverage that the project received in technology magazines and papers such as Computer Weekly, Business 2.0 and New Media Age, meant that ideas about sustainability were reaching new audiences who may not have been exposed to these debates before. In addition, I also sought to produce longer articles based on the project for a range of more specialist and academic publications. A full list of articles and press coverage can be found in Appendix 5. I also publicised the project through broadcast media, for example BBC Business Breakfast, where I debated its findings with John Browning, founder of First Tuesday.

6. Recommendations

The summary report makes a series of recommendations for government and business in taking forward the e-commerce and sustainability agenda. This chapter lists those recommendations in full.

6.1 Sustainable e-policy

Sustainable e-commerce should be made an explicit goal of Government e-policy and a core responsibility of the e-Minister and e-Envoy. Progress would then be monitored and reported in the e-Envoy's annual report. E-business could also increase research and development investment in social and environmental applications of information technology. And government could allocate a share of its new economy windfalls (for example, from the auctioning of spectrum licenses) to a social venture fund for projects which use new internet technologies to promote social cohesion and improve quality of life.

6.2 Create sustainable e-regions

The Regional Development Agencies (RDAs) should develop a template for sustainable e-regions, which integrate policy on sustainability and the new economy. E-regions would use digital technologies to boost virtual commuting, cut traffic congestion, promote dematerialisation, overcome local digital divides, and promote social cohesion. As part of their responsibility for promoting local and regional enterprise, the RDAs could also take a lead role in incubating local e-markets, and experimenting with new electronic business models.

6.3 Sustainability reporting

E-business should become a trailblazing sector for environmental and social reporting, by pioneering new online techniques. Using the latest e-technologies, progressive dot-coms could leapfrog the old economy world of dull, two-dimensional reports, and set new standards for real-time, multimedia reporting and stakeholder dialogue. It would also be useful if sustainability reporting frameworks like the Global Reporting Initiative could provide guidelines on how the impacts and opportunities of e-business should be measured.

6.4 Confidence boosters

Online assurance schemes for safe and reliable e-commerce, such as Clicksure and TrustUK, should be extended to cover environmental and social issues. This would

provide consumers with confidence that the products and services they purchase online meet basic ethical standards. One of the great strengths of the internet is that it makes it easier to pass this type of information up and down supply chains. Eventually, it should become possible to click through from an e-tailer's website to review the quality, environment or social standards which the company holds. Another click should take you to the website of the auditing agency, and even allow you to exchange e-mails with the individual auditor.

6.5 Develop Post Offices as the nodes of the new economy

The recent Cabinet Office report *The Counter Revolution*, outlines some of the opportunities emerging for the Post Office in the digital economy. Transforming post offices into the hubs and nodes of the new economy could bring the benefits of internet access, e-commerce, and e-government to everyone, whilst also strengthening the Post Office network in remote and rural areas.

6.6 Set targets for improving resource productivity

The DTI's 1998 Competitiveness White Paper pledged 'to make the UK the best environment in the world for e-commerce'. As part of its commitment to improving resource productivity, the DTI could now set an additional target: 'to make UK e-commerce the best in the world for the environment.' This would send a strong signal to the e-business community about the importance of environmental innovation. Progress could be monitored through an annual life-cycle analysis of an 'e-shopping basket'. This would measure the energy and resources required to produce, sell, use and dispose of a standard selection of goods and services, and compare the relative impacts of online and conventional commerce.

6.7 Create green search engines

A recent report calls for the establishment of a web-site to help consumers find out more about the environmental effects of products and services (ACCPE, 2000). This is an excellent idea, which could be expanded to include the development of the world's first 'ecobot' – a green search engine capable of locating products on the basis of environmental or ethical performance. There are already lots of search engines that scour the web on the basis of price. An eco-bot would enable consumers to search under green and ethical criteria, for example to find the most energy efficient fridge, or the most ethical pension.

6.8 Retailers should co-operate to generate environmental benefits

As e-commerce takes off, it is easy to envisage a scenario in which residential areas are visited first by a Tesco van, then by Sainsbury's, Waitrose and a host of others. E-business makes it much easier for companies to share facilities at all stages in the supply chain, and a concerted effort to co-operate in the development of regional storage and distribution facilities would make sound financial, as well as environmental, sense. It could reduce the demand for warehouse space and cut unnecessary van movements. Companies should investigate the opportunities in this area, as part of their broader commitment to good environmental management.

6.9 Investigate further the transport effects of e-commerce

In order to provide early warning of adverse trends, the Department for the Environment should collect more detailed data on the volume and characteristics of air freight and goods traffic. We would also recommend research into the transport behaviour of car-owning home shoppers and the impact of B2B marketplaces. When sufficient data is available, government should prepare planning guidance for local authorities on the transport and land-use implications of e-commerce.

6.10 Incentives matter more, not less

The environmental opportunities of the new economy do not make existing environmental policies redundant. Far from it - to make the most of these opportunities we need to accelerate existing policy trends: more green taxation; stronger measures to promote sustainable transport; and increased responsibilities on manufacturers and retailers for products throughout their life-cycle. These policies will provide the incentives that are crucial to changing business and consumer behaviour.

6.11 Increase consumer awareness

Ordinary consumers are very uncertain about the environmental effects of e-commerce. Government should make an effort to increase levels of consumer awareness about the environmental impacts and opportunities of e-commerce, e-work and other digital technologies. One option would be to address these issues through existing campaigns such as Going for Green and 'Are you doing your bit?'.

6.12 A network for social and environmental e-entrepreneurs

We propose a network to support social and environmental innovation in the new economy. This would bring together organisations and individuals who share a

commitment to using digital technologies to improve quality of life. Modelled on existing e-networks such as First Tuesday and The Chemistry, it would help entrepreneurs to forge connections and swap information with like-minded people in business, government and NGOs.

6.13 Venture capital for sustainability

Government and NGOs need to engage the venture capital industry in an active dialogue on social and environmental entrepreneurship, and incentivize it to support sustainable ventures.

6.14 A dot-com Declaration of Co-Dependence

Progressive entrepreneurs and e-business leaders could sign up to a 'Declaration of Co-dependence': a statement of commitment to the connectedness between profit, people and planet that underpins sustainability. This would need to be backed up by effective policies and systems, but could act as a powerful catalyst for practical action across the e-business sector.

6.15 Encourage dot-civics

There is exciting potential for civic and community organisations to adapt the tools and software of e-commerce to create a new wave of 'dot-civics' – online initiatives which promote volunteering, political participation or social responsibility. To succeed, such ventures will need to span the boundaries between the public, private and social sectors.

6.16 Develop a 50 year vision for a sustainable economy

One of the greatest obstacles we face in creating a more sustainable digital economy is the short-termism that is so ingrained in our culture. To tackle this problem, Government should develop a fifty-year framework for a sustainable economy, in close co-operation with business and NGOs. This would send a powerful signal that social and environmental innovation hold the key to the long-term prosperity of UK plc, and to ensuring an enhanced quality of life for all.

6.17 Hold a "Summit of the Long Now"

Now and then, we need a bolt of inspiration to stop us in our tracks. The Long Now Foundation (www.longnow.org) is an attempt to do this. Initiated by a group of technology pioneers, including Kevin Kelly, co-founder of Wired magazine and the musician Brian Eno, the Foundation is building a clock which will keep time for

10,000 years. It will tick once a year, bong once a century and once every millennium, the equivalent of a cuckoo will come out. Such attention-grabbing reminders of the long-term implications of our actions are essential. As Danny Hillis, the clock's designer, explains: 'It'll be worth building the clock if I can inspire 10 per cent of the engineers in Silicon Valley to spend 10 per cent of their time thinking about problems whose solution is more than 10 years out into the future.'

Occasionally, even the most dynamic of e-business leaders needs to make space to pause and reflect on issues of long-term responsibility. We propose that the Long Now Foundation joins forces with a network of like-minded organisations to host an annual 'Summit of the Long Now': a space in which e-business leaders can reconnect with what sustainability means for their companies and for them as individuals.

7. Eighteen months later: a reflection on project impacts

This final chapter offers some reflections on the longer-term effects of the *Digital Futures* project, as its results have been disseminated over the past eighteen months. It also summarises the lessons I drew from the project, and the ways in which the project contributed to my subsequent professional and personal development.

7.1 Impacts on debates about e-commerce and sustainable development

In the months since the *Digital Futures* book and report were published, its findings have made a visible contribution to shaping the next stage of debates about the sustainability of the digital economy. The book itself has sold just over 4,000 copies, and was reprinted in paperback by Earthscan in May 2002. The summary report, which was available to download freely from the internet, has been downloaded around 18,500 times. From this, it is fair to conclude that a significant number of people have read the outputs, and that they have influenced ongoing research.

In terms of the UK Government's agenda, a handful of subsequent reports have made reference to the Digital Futures study, including a recent paper from the Cabinet Office, written as part of the government's energy review (PIU, 2001). Further afield, the project has also informed a related project set up by the German government, and has also influenced research now being undertaken by the Wuppertal Institute (Germany), Tellus Institute (USA) and Worldwide Fund for Nature (Switzerland). Other related work, influenced by the project, has been undertaken by organisations such as the Confederation of British Industry (which held in 2002 a one-day seminar on e-business and sustainability); and Business in the Community (which has set up its "comm.unity" campaign to promote social responsibility amongst IT and e-business companies.

As mentioned earlier, it was always clear that the project would raise as many questions as it provided answers. During the closing stages of the project, I began the process of securing European Commission funding for a more ambitious pan-European follow-up, which would be capable of extending the research in various areas. Known as the "Digital Europe" project, this initiative was established in partnership with two European think-tanks - the Wuppertal Institute (Germany) and Foundazione Eni Enrico Mattei (Italy). Forum for the Future led the consortium, and I took a lead in producing the proposal. The headline aim of the project was to

explore in greater depth the contribution that e-business and e-work could play in creating a sustainable information society across Europe.

After several months of form-filling and meetings in Brussels, the Commission agreed to fund the project to the tune of 660,000 euro. I also secured additional support of around 200,000 euro from a consortium of corporate partners. The project plan included a number of detailed case studies of the impacts of e-business on different sectors: financial services, music, pulp & paper, food retailing, auto-manufacture, books, PCs and second-hand goods. In each of these sectors, the project aims to measure social and environmental impacts, and recommend the blend of policy, innovation, business leadership and market incentives that will be necessary to enhance the sustainability of e-business.

The Digital Europe project got underway in July 2001, and is due to be completed in September 2003. I was closely involved in the setting up of the project, and the initial stages of research, but on my appointment to Demos, I then handed over the management of the project to Vidhya Alakeson at Forum for the Future. Although I have not been working directly on the project since leaving Forum, I have been pleased to remain involved in an advisory capacity. The project has succeeded in developing further the analysis of *Digital Futures*, and in grounding it in more empirical research, particularly through the involvement of the Wuppertal Institute, which is a leading European centre for life-cycle and mass-balance analysis. A series of case studies and other working papers are now available at www.digital-eu.org

7.2 Impacts on the project partners

Several of the *Digital Futures* partners took forward the recommendations of the project in a practical way, or used them as the basis for further research. Examples include:

- **Local Futures Group** became the UK partner in a new EU project - PRISMA - examining the role of public services in an Information Society. It has also been applying the learning from *Digital Futures* in a new programme of research with local authorities on Local Internet Futures, which will explore the local implications of e-commerce and e-government for economic development and communities.

- **UK CEED** has established SustainIT, a centre for sustainable communications. Working with key partners such as BT and the East of England Development Agency, SustainIT has embarked on a programme of applied research and provide guidance on the transport and other environmental and social impacts of teleworking and e-logistics. It is also working with local authorities to integrate their ICT, Agenda 21 and community strategies, and with developing countries to assess how the internet will affect their sustainable development.

- **Green Alliance** took forward its work on resource productivity in the new economy, through a series of events and publications focusing on 'the bright green economy'. Together with the DTI, it has been working to develop a consensus on how resource productivity in the UK can be measured. It has also set up a range of projects to explore policy frameworks for the new economy, including issues such as taxation and incentive structures, patterns of ownership, and creating a green consumer ethic.

- **AOL UK** used their involvement in the project as the basis for an expansion of their corporate social responsibility activities. As a direct consequence of the project, the company established a new social responsibility unit, to develop more projects and partnerships on these issues. As Karen Thomson, Chief Executive of AOL, describes it: "Our part in *Digital Futures*...has enabled AOL UK to stay at the sharp end of the internet industry debate. The expertise and genuine understanding we have built up is influencing our decision-making in all kinds of ways" (Forum for the Future, 2001).

- Two months after the end of the project, **Amazon.co.uk** set up a practical initiative with another project partner – **The Post Office** – to look at ways of reducing packaging.

- A partnership between **Demos, Forum for the Future** and the **DTI** was created to run a support network – known as "Vitamin-e" - for social and environmental technology entrepreneurs. This network has met every two months for the past two years, and aims to translate the theory about sustainability in the new economy into some highly practical projects. The network assists new ventures in gaining access to the advice and support necessary to turn their ideas into practical reality.

7.3 Impacts on my research, professional and personal development

Finally, the project has had major impacts on my own work as a researcher and practitioner. These impacts can be divided into the following areas:

7.3.1 Research interests

In October 2001, I moved from Forum for the Future to join Demos as Head of Strategy. My research responsibilities at Demos range quite widely, but debates about technology and society have continued to form the core of my research agenda within the organisation. These debates have informed a number of follow-up projects:

- *The Politics of Bandwidth: network innovation and regulation in broadband Britain* (Wilsdon & Stedman Jones, November 2002). This report explores the changing nature of innovation in the digital society, and looks particularly at the role of electronic networks as enablers of innovation. It includes a detailed analysis of BT's "local loop", and calls for BT to be broken up, on the basis that its monopoly of local network assets threaten to limit network innovation. It also analyses the potential of wireless networks (known as "WiFi") to enable new forms of community networking. The report was published in November last year, and was widely covered by the Guardian, Financial Times, BBC and the technology press. It was launched at a seminar with Stephen Timms MP, the recently-appointed Minister for e-Commerce at the DTI.

- *London Calling – the impact of 3G technologies on the capital*
  As the mobile phone industry gears up for the introduction of 'third-generation' technology, we already know a lot about the advances these phones will bring, such as the greater use of video and location-based services. At the same time, it is inevitable that 3G technologies will be woven into our lives in ways which we can't fully predict and we face difficulties forecasting how these new mobile devices will revolutionise our lifestyles, the way we do business, the infrastructure of our cities, our relationship with each other and with government. This Demos project, which I set up in January 2003 in partnership with Orange and Vodafone, aims to investigate and demonstrate the potential benefits of 3G technologies for business, regional and local government in London. The final report will be published in September 2003.

- *Virtual Vice: the use and abuse of the internet*

This report, which I co-authored with Paul Miller (who has now joined me at Demos) explores the misuse of the internet, and argues that effective solutions to spam, hacking and copyright infringement will rely on harnessing the creative, distributed nature of the internet itself. The report was written for BT and is now hosted on BT's website at www.bt.com/betterworld

- *Progressive Governance Summit*

In July 2003, the Progressive Governance Summit took place in London, hosted by Tony Blair, and attended by several other world leaders, including President Lula of Brazil, President Mbeki of South Africa, and Chancellor Schroeder of Germany. The Progressive Governance process was launched by President Clinton in 1998 to develop new ideas for centre-left politics. This is the fourth summit, but the first time it has been held in the UK. Unlike previous summits, there was more of an attempt this year to develop policy content, and Professor Tony Giddens co-ordinated a process to develop new thinking across seven core themes. I was invited to co-author the conference paper for one of these themes - on "technology, risk and the environment" – together with Rebecca Willis of Green Alliance. The paper formed the basis of a workshop session at the conference (chaired by Lord Sainsbury, and attended by ministers from Sweden, Germany and South Africa), and it will shortly be published as part of a collection (Giddens, 2003).

In each of these projects, I have drawn on and developed the specialist knowledge and frameworks of analysis that I developed through *Digital Futures*. I have been able to sharpen and hone my understanding of the relationship between new technologies and society, and of the type of policy responses that are necessary to maximise the social and environmental potential of those technologies. Having completed *Digital Futures* and a number of subsequent projects on related themes, I now feel qualified to write and speak as something of an "expert" on these issues, whilst still accepting that I have much to learn and improve in my academic and practitioner analysis.

7.3.2 Project management skills

Digital Futures remains the largest and most complex project I have ever been involved in, in terms of budget and number of partners. As described above, managing it required at times a very steep learning curve! There were many points in

the process when I was conscious of my own limitations and lack of experience as a project manager. However, reflecting on it almost two years later, I am very aware of the vast amount that the project taught me about how to lead and coordinate such processes, from concept stage through to completion. There are many aspects of the project management task (writing proposals, managing a research team, fundraising and editing) that I had not undertaken before, but which I now do routinely as part of my job at Demos.

Digital Futures was essentially a "fast-track", on-the-job training programme in how to develop and manage projects, and I know that my capacity to perform this role was dramatically increased over the lifetime of the project. The project also improved my organisational ability and time management skills.

7.3.3 Understanding of policy processes and systems thinking

Digital Futures greatly enriched my understanding of how public policy is made, and the role that research can play in forming an evidence base for policymakers and politicians in developing their strategies. It was instructive to work closely throughout the project with officials from different Government departments, and I learnt a great deal about how Whitehall officials operate. This learning was particularly acute towards the end of the project, when I saw how officials in the DETR and DTI took the outcomes of the project and communicated them to the relevant Ministers, and in turn how those Ministers interpreted the findings – and their wider significance – in their presentations at the final project conference. Having two Ministers to speak about the project at the conference was a definite highlight of the process, but overall I felt that the engagement with civil servants taught me more about the realities of how Government operates. I have put this learning to good use in my work at Demos, where many of our projects involve close liaison with key officials across Government departments.

Systems thinking was a central element of the project methodology, and whilst at Demos, I have also developed further the insights into systems thinking that I gained through *Digital Futures*. In the past eighteen months, Demos has initiated a number of projects with systems ideas at their core, including a report on systems thinking and public policy (Chapman, 2002) and a major study of systems thinking and regulation (Skidmore et al, forthcoming, 2003). I have been involved in several of these, and have found the grounding in systems methodologies which I gained through the Mprof/Dprof course extremely useful. If I were doing the project again

today, I feel I would have a richer understanding of how systems thinking could be applied more comprehensively throughout the project, and would have been able more effectively to incorporate it at every stage. As it is, I think a fair criticism of the project is that systems ideas were very central at the methodology and scoping stage, but ended up somewhat marginalised in the published results. This was largely a result of my research inexperience, and of trying to synthesise the outputs of several researchers into a single report. But I have learnt from this process, and next time would invest more effort in ensuring greater methodological robustness at every stage.

7.3.4 Experience of cross-sector partnership

The project taught me a lot about the challenges of working with a large consortium of partners drawn from across government, business, academia and the NGO sector. *Digital Futures* exemplifies the model of cross-sector partnership that has now become prevalent in many areas of the sustainable business/corporate social responsibility debate (Bendell & Murphy, 1998). However, the sheer size and diversity of the consortium is still relatively unusual, and it therefore offered a good learning opportunity, which illustrates both the pros and cons of such partnerships. The project not only allowed me to engage with a "critical community"; to a large extent, it relied on me recruiting and forming such a community – over 25 very different organisations, brought together by an interest in these issues.

The advantages of this partnership model were, firstly, that it ensured the project was taken seriously by decision makers, as it was hard to dismiss a project with widespread backing from government and business. Secondly, it enabled a diversity of perspectives to be captured and incorporated through the research process, and this strengthened and enriched the outputs. Thirdly, it provided a ready audience for the outputs of the project, in the form of policymakers and business practitioners who could learn from, and ideally adopt, some of its recommendations. In some cases, this process was highly visible e.g. AOL's creation of a social responsibility unit after the project. In others it was more diffuse e.g. the incorporation of the project findings into other currents of government policy and strategy. However, the pre-existence of a project consortium at the time of publication greatly increased the likelihood of some practical follow-up and action as a result of the project.

The main downside of the partnership model is that it inevitably led to a toning down of some of the more radical arguments that I or other researchers would perhaps

have liked to have included about the potential tensions between digital technologies and sustainable development. In particular, I would have liked to have included a stronger message about the dangers of a "business as usual" model, which relies on new technologies to contribute to GDP-led economic growth at a much faster rate than can be offset by any accompanying gains in environmental efficiency or social cohesion. This argument did feature in the final report (in the section on "Matter matters more not less"), but it is fair to say that the inclusion of Government departments and companies in the consortium meant that this point was not made as strongly as it could have been. This toning down did not occur as a result of any direct attempts at "censorship" or distortion of the results (with the notable exception of my spat with Amazon!) , but was more of an implicit shift in emphasis to accommodate what I knew were the interests of the partners.

That said, I am still reasonably happy with the overall tone of the final report, which I feel strikes a good balance between the different interests involved, and does not pull its punches too much in confronting the tougher elements of the ICT/sustainability equation. But what I have learned from the process is that funding always comes with a price attached. On balance, I feel this was a price worth paying, but I now realise that I if had wanted to undertake more fully independent (and potentially more radical) research, I would have benefited from seeking non-corporate funding (e.g. ESRC). I have taken this lesson on board, and have recently submitted a bid to the ESRC for a new project exploring the social and environmental impacts of nanotechnology. If this is successful, it may involve companies as subjects of the research, but will not rely on them for funding.

7.3.5 Public speaking and media training

Prior to starting the project, I had done a little bit of public speaking at university and in my job, but was still very inexperienced. I had also had little experience of dealing with the media (other than in my role as Jonathon Porritt's researcher, when I sometimes set up interviews for him). By the end of the project, this had changed entirely. I ended up speaking at over thirty different conferences, seminars and events, including giving evidence to the House of Lords, and making a keynote address at a major OECD conference in Paris. I also learned to write or contribute to articles in a variety newspapers and magazines (including The Guardian, FT and Business 2.0). At the time, this was in turn both terrifying and exhilarating. I greatly enjoyed the opportunities that the project provided to speak to a variety of audiences,

but there was also more than one occasion when I felt completely out of my depth, and wished that the floor could swallow me up!

Looking back, I feel that the exposure the project gave me to public speaking and media work was invaluable, and will stand me in good stead for years to come. I also received two days of formal media training from Fishburn Hedges (the public relations company involved in the closing stages of the project), which was very useful in teaching me how to do press, radio and TV interviews. By the end of the project, I achieved a marked improvement in my ability to communicate to a variety of audiences, using different media.

7.3.6 Writing and editing skills

Last but by no means least, the project greatly improved my writing and editing skills. I have always enjoyed writing, but *Digital Futures* was by far the largest writing and editing task I have ever undertaken. I found it very challenging, but also immensely satisfying, especially when I held in my hands the various outputs at the end of project. Editing the eight chapters and responses in the book was also hard work, but I learned a lot from working closely with the authors and the publisher (Earthscan). I have used these skills subsequently in work at Demos, where I have edited four pamphlets in the past year.

I know that I will continue to draw on the ideas and experiences of the *Digital Futures* project for many years to come. It remains the largest and most ambitious project I have been involved in, and as this section has summarised, it taught me many valuable lessons about project management that I continue to draw on almost daily in my work at Demos. Above all, the project posed a set of questions about the future sustainability of our economy which are unlikely to be fully resolved for many years to come. During that time, I hope that my work, both through *Digital Futures* and subsequent projects, can play a small part in helping to identify some answers.

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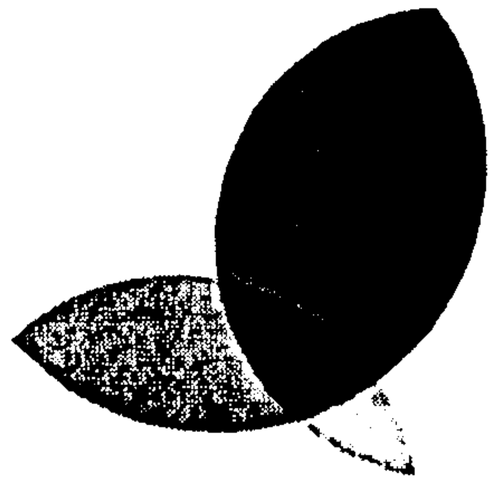
Appendix 1 – Minutes of project steering group meetings



Forum for the Future

DIGITAL FUTURES STEERING GROUP

Friday 21 January, 2-5pm

Minutes

Attendees:
Douglas Robinson, DTI (Chair)
April Veasey, DTI
John Adams, Sustainable Development Unit, DETR
Anwar Choudhury, CITU, Cabinet Office
David Boyle, New Economics Foundation
Alex MacGillivray, New Economics Foundation
Terry Beal, SWERDA
Colin Bluck, Smart South West
Mark Hepworth, Local Futures Group
Ben Jupp, Demos
Mike Hughes, BT
Peter James, UK CEED
Dr. Peter Hopkinson, University of Bradford
Charles Tucker, Post Office
Alan George, Unilever
Tariq Ahmed, NatWest Corporate Banking Services
Hark Gill, NatWest Corporate Banking Services
Jon Tutcher, Sun Microsystems
Nick Green, TCPA
Gary Boswell, Nationwide
Susie Baverstock, BP Amoco
Peter Madden, Green Alliance
Frans Berkhout, SPRU
Malcolm Eames, SPRU
James Wilsdon, Forum for the Future
George Martin, Forum for the Future
Matthew Horn, Demos

Apologies:
Alan Knight (Kingfisher)
Ian Christie (Local Futures Group)

1. Introductions

A list of key contacts was circulated. Any changes should be sent to JW.

2. Contracts and budgets

Nine corporate partners are now in place, with three other possibles remaining (Iceland, Granada and lastminute.com). We decided to continue pursuing all three of these, even if this pushes the tally of partners above ten. A media company, food retailer and internet start-up would enhance the breadth and credibility of the consortium, as well as creating some extra flexibility in the research budget.

DTI has produced a draft offer letter for Forum covering the £90K Government contribution. This will be accompanied by a document setting out the basis for collaboration. Once this is finalised, all the research partners will be required to sign it. Forum will then draw up an additional contract with each research partner to cover the rest of the project budget.

April Veasey will be the DTI's project officer for Digital Futures. Any queries about contracts should be directed to April or to James. ***Action: AV/JW to finalise contracts and circulate to all partners***

3. Project launch and timetable

DTI plans to launch the project in the run-up to the Fabian Society/SERA 'Environmental modernisation' conference on on 1st February. This may be through an interview with Patricia Hewitt, or simply a press release. Forum will organise some additional press activity for the launch. Corporate partners are welcome to undertake their own press work, providing this is tightly co-ordinated with DTI/DETR and Forum. ***Action: DTI/Forum to finalise press release asap***

The timetable for the rest of the project is shown below:

DATE	ACTIVITY / KEY MILESTONE	ONGOING WORK
Dec 1999	Finalise proposal / recruit remaining corporate partners	**Scoping phase** ⇓
21/1/00	**1st Steering Group meeting.** Attended by all partners. Aim: to agree on scope and methodology; plan scenarios workshop.	**Phase 2 research** ⇓
29/2/00 10am-4pm	**Scenarios workshop.** Full day session to be attended by all partners and other key stakeholders. Facilitated by NEF/SPRU.	⇓
17/4/00	Completion by SPRU of 1st draft scenarios for use by all research themes.	⇓
4/5/00 10am-12pm	**2nd Steering Group meeting.** Aim: to discuss scenarios and review progress across all themes.	⇓

14/7/00	**Deadline for 1st draft of theme papers**	
20/7/00	**3rd Steering Group meeting.** Aim: to review drafts and plan process for Phase 3.	
4/9/00 – 13/10/00	**Theme seminars** – working sessions with key stakeholders to review theme papers.	**Review, editing and consultation with stakeholders** ⇓
10/11/00	**Deadline for final draft of theme papers**	⇓
17/11/00	**4th Steering Group meeting.** Aim: to agree contents of summary report and plan for launch event in Jan 2001.	⇓
12/12/00	**Deadline for first draft of summary report** Invites out to launch event	⇓
13/12/00 – 20/1/01	Final proofing, editing, design and printing	
1/2/2001	**LAUNCH CONFERENCE**	

Action: please could everyone put the dates of future meetings in their diaries

There was some debate as to whether we should publish our interim findings before the end of the project. Clearly, we will want to make initial drafts available for comment and peer review, but there are potential problems in announcing our findings before we have had an opportunity to analyse the trade-offs between the different themes. Against this, we need to be aware of the speed with which this debate is moving, and the danger that we will miss the boat in policy terms if we wait until early 2001.

We agreed to set up a communications sub-group to consider the various options and report back. Members of this sub-group will include: Alex MacGillivray, Tariq Ahmad, Mark Hepworth, Peter Madden, Douglas Robinson, Jon Tutcher and James Wilsdon. If anyone else would like to be involved in these discussions, please contact JW. ***Action: sub-group to develop a communications/PR strategy for the next steering group meeting in May.***

4. Scenarios workshop

The agenda for the scenarios workshop was approved. Everyone was asked to suggest names of potential invitees, both from within their organisations and from other stakeholder bodies. ***Action: all***

5. Defining project scope

We examined various definitions of e-commerce and decided the best option would be to adopt the broad definition proposed by the Cabinet Office in *e-commerce@its.best.uk*:

> 'Electronic commerce is the exchange of information across electronic networks, at any stage in the supply chain, whether within an organisation, between businesses, between businesses and consumers, or between the public and private sectors, whether paid or unpaid.'

It is important that we acknowledge the complexity of defining e-commerce, and accompany the PIU definition with a detailed explanation of which issues we will include and exclude. Malcolm Eames and James Wilsdon offered to produce a draft project scope for use at the scenarios workshop. ***Action: ME/JW***

6. Collaboration between partners

Clusters of 2-3 corporate partners will get closely involved in each of the research themes. The makeup of these clusters will be finalised at the scenarios workshop, but initial soundings can be taken before then. In order to maximise the potential for shared learning, corporate and government partners need to identify key personnel and areas of expertise. JW will circulate a short questionnaire to elicit this information. ***Action: JW***

The importance of involving SMEs was emphasised. Corporate partners were asked to identify others in their supply chain who we could involve in the research .

We discussed the need for a project website which partners could use to exchange information. Mike Hughes suggested that BT might be able to help with this. Another option would be to explore whether we can link to Foresight's on-line Knowledge Pool. ***Action: JW to pursue this with BT & Foresight***

The research partners agreed to put together a bibliography of key sources and a list of key contacts. JW will circulate a first draft of this. ***Action: JW***

Forum also offered to provide a monthly e-commerce cuttings service to all those who would find it useful ***Action: please inform JW if you want cuttings***

It was suggested that we organise some informal meetings to allow partners to share ideas. NEF offered to host one of these. As a first step, we agreed to hold a reception after the scenarios workshop on 29 February. Susie Baverstock and Jon Tutcher also offered to check the availability of company venues. ***Action: DTI/JW to arrange.***

7. Links to Foresight and other Government initiatives

We are in the process of registering as an Associate Programme of Foresight. Other parts of government we need to link with include: the office of the e-Envoy; the DfEE's new taskforce on IT, learning and social exclusion; and DETR's planning/land use/transport/business teams. John Adams offered to act as a "portal" for links with DETR.

Anwar Choudhury mentioned several relevant actvities within the Cabinet Office: the ongoing *Modernising Government* agenda; the government's corporate IT strategy; and a new PIU project looking at how to align government and business e-commerce.

We agreed it would be good to organise a workshop for key government contacts once the first draft of the papers are complete.

The research partners requested a 'map' of central and regional government policy and contacts relevant to the project. ***Action: DTI/DETR/Forum to produce this***

8. US report on e-commerce and global warming

Douglas Robinson asked for views on the quality and credibility of Joseph Romm's recent report on 'The Internet Economy and Global Warming'. The general consensus was that the report represents a welcome first effort to address this issue. However, it is limited to one scenario which relates mostly to the US market. It also ignores the longer-term, secondary impacts of e-commerce on energy use and consumer behaviour.

9. AOB

JW mentioned the forthcoming Alliance for a Sustainable Information Society conference which takes place in Brussels on 21 and 22 February.

Forum for the Future

DIGITAL FUTURES STEERING GROUP

10.30am – 1pm, Thursday 4 May 2000

Minutes

Present:
Katrina Giles, AOL
Christina Smedley, Amazon
Mike Hughes, BT
Ben Jupp, Demos
John Adams, DETR
Douglas Robinson, DTI
Chris O' Connor, Ericsson
Anna Browne, Forum for the Future
Elizabeth Hurst, Forum for the Future
Halima Khan, Forum for the Future
Annette van der Kolk, Forum for the Future
James Wilsdon, Forum for the Future
Rebecca Willis, Green Alliance
Ian Christie, LFG
Greg Foster, LFG
Jo Bird, NatWest
David Boyle, NEF
Charles Tucker, Post Office
Catherine Hayward, Royal & SunAlliance
Malcolm Eames, SPRU
Terry Beal, SW RDA
Nick Green, TCPA
Andrew Gillespie, TCPA
Jonathan Selwyn, UK CEED
Peter James, University of Bradford/UK CEED
Alan George, Unilever
Tim Cradock, WH Smith

Apologies:
Alan Knight, B&Q
Colin Gomm, BP Amoco
Gary Boswell, Nationwide
Alex MacGillivray, NEF
Jon Tutcher, Sun Microsystems

1. PROJECT UPDATE

Since the scenarios workshop on 29 February, progress has been made on various fronts:

- Four new corporate partners have joined the consortium - AOL, Amazon.co.uk, Ericsson and WH Smith - bringing the total to fourteen. We are still awaiting a final answer from British Airways, but will not be approaching any more companies.

- The overall budget now stands at £300K, which is £30K more than anticipated. 50% of this extra money will be ploughed back into research, and the other 50% will be put towards improving the quality of the final report and the launch event.

- SPRU have produced a revised set of scenarios based on discussions at the February workshop. On 17 April, the research partners held a meeting to review these and map out the research process between now and July. The theme clusters were also agreed, and initial meetings between the corporate and research partners have started to take place.

- On 29 March, Jon Tutcher, Alex MacGillivray and James Wilsdon gave evidence on behalf of the project consortium to the House of Lords inquiry into the future of e-commerce. Copies of our written evidence are available from James.

- On 24 May, several members of the consortium will be meeting with Alex Allan, the Cabinet Office e-envoy, to discuss how best to involve him and his team in the project.

2. MORI

We agreed it would be good to commission MORI to do some polling in the autumn, as a way of generating some media-friendly statistics for the final report. This will cost between £6K and £10K, depending on the number of questions. The reseaarch partners will work with MORI over the next two months to develop some appropriate questions, and MORI will be invited to make a presentation at the next Steering Group meeting. We will also explore whether we can survey people through AOL's website. ***Action: JW***

3. PROJECT LEAFLET & WEBSITE

An introductory leaflet has been designed, and will go to print next week. Please give any comments on the draft to James by Wednesday 10 May. ***Action: All***

We also need to know how many copies of the leaflet you would like for distribution to your own stakeholders. ***Action: All***

A basic project website is up and running at www.forumforthefuture.org.uk. A more sophisticated site is currently under construction at www.digitalfutures.org.uk, and will go live at the end of May. This will include a "members-only" area for the project consortium, where the latest drafts of papers will be available for review.

4. WELCOME TO NEW PARTNERS

Each of the new partners gave a short introduction to their reasons for becoming involved in the project:

- Chris O'Connor explained that Ericsson is already looking at these issues in Sweden, and is now keen to explore them in a UK context.

- Katrina Giles said that AOL is particularly interested in community involvement and tackling the digital divide.

- Tim Cradock summarised the ways in which e-commerce is changing WH Smith's business, and welcomed Digital Futures as an opportunity to understand what the long-term implications of this might be.

- Christina Smedley explained that since Amazon has now established a strong presence in the UK, it is actively looking for ways to put something back into the community.

5. REVISED SPRU SCENARIOS

Malcolm Eames presented SPRU's new scenarios, and asked for comments. In general, this latest iteration was seen as a major step forward since the last meeting.

Other comments included:

- the importance of accentuating the differences between the four scenarios
- the danger that *Cyberspace* and *Digital Islands* might collapse into one another
- the research partners need to be very clear about how to use the scenarios in their own themes
- the scenarios must function as a 'conceptual glue' for the rest of the project
- the need to factor in resource costs and regulation as important drivers
- the need to agree which technologies and platforms are likely to dominate

Everyone was invited to send any further comments to Malcolm. ***Action: All***

The next version of the scenarios will be available in early June, so that the other research partners can use them in preparing their first drafts. Between now and then, SPRU will have further discussions with BT, Ericsson and Sun Microsystems about some of the technological assumptions. ***Action: SPRU***

6. RESEARCH CLUSTERS

Each of the research partners gave an update on their progress. **It is important that the corporate partners contribute to their clusters during May and June, so that their ideas and expertise can be reflected in the first drafts.** The research partners need to fix meetings with key people in the corporate partners ASAP. An updated list of research clusters is attached. ***Action: All***

7. THEME SEMINARS

It was agreed that one corporate partner from each cluster should host the theme seminar in September/October. Each cluster should decide the precise format of its seminar. It might be good to invite a senior company representative to open/chair the event. ***Action: All***

8. COMMUNICATIONS STRATEGY & LAUNCH EVENT

8.1 Pre-launch activity

Prior to the launch, there are a variety of ways in which we will publicise the project:

- **Project leaflet and website.** In late-May, we will send out approximately 5,000 copies of the project leaflet to a range of contacts in government, business, media and NGOs. At the same time, the website will go live.

- **Charlie Leadbeater's pamphlet.** This will be launched in September at an evening reception for a high-level audience of c.150 people. Patricia Hewitt has been invited to speak. alongside Charlie Leadbeater. It will be billed as a Green Alliance/Digital Futures event, and Charlie's pamphlet will be positioned as a "taste of what's to come" in the final report. There should be some opportunity to hook articles and other PR around this event.

- **The theme seminars.** In addition to the Green Alliance event, we will be organising seven theme seminars in September and October. The aim of these is to review the draft papers and obtain input from experts and other stakeholders. But they will also be a good opportunity to raise the profile of the project with our target audience.

- **Articles/conferences.** Members of the steering group should look for opportunities to publicise the project at conferences or in articles (e.g. company magazines, Green Futures, Planning, New Economy etc.). We will also be represented at events such as the World Internet Forum in September and the Digital Dividend conference in October.

8.2 Final outputs

We agreed in principle to produce three published outputs at the end of the project:

- **An overview report – "society.com".** This will be a 50-page, high quality, colour report launched at the final conference. Free copies will be sent to key decision-makers, and will be available to download from the project website.

- **A four-page executive summary** of the overview report for distribution to the media, Ministers etc.

- **A book.** Full copies of all the theme papers (along with the summary) will also be published as a book. The sustainability publishers Earthscan (part of Kogan Page) have offered to do this. Ideally, the book will come out at the same time as the summary report. The publishing schedule for this would be quite tight, but it should be possible, providing that the theme papers are edited in December.

8.3 The launch event

This could be run in a number of ways, but the two leading options are:

- **Invitation-only event at DTI Conference Centre** (capacity c.170). This would be a free event aimed at our target audience, press etc.

- **Public conference with at another large London venue** (e.g. QEII, capacity 300). This would be open to a general business, NGO, government audience, although we would have to charge for tickets to cover the costs. A conference company, such as Neil Stewart Associates, could be hired to manage the event.

Potentially, we could pull together an impressive line-up of speakers from within the project consortium e.g. Patricia Hewitt, the e-Envoy, Michael Meacher, one or two company CEOs, Jonathon Porritt, Charlie Leadbeater. There could also be workshops based on the research themes.

John Adams suggested that we might like to organise <u>two</u> events: one for the press and key decision makers, and the other for a wider business, NGO, government audience.

The communications sub-group will examine these options in detail, and a final decision will be made at the July steering group meeting. ***Action: JW/sub-group***

8.4 Press strategy

To accompany the launch, we will implement a media strategy aimed at the broadsheet press, Today programme, business correspondents, environment/social affairs correspondents, and specialist publications. Any help we can get from company PR departments would be very useful.

8.5 Communications sub-group

To carry these issues forward, we have established a sub-group which will report back to the next steering group in July.

Membership of this sub-group includes Alex MacGillivray, Tariq Ahmad, Rebecca Willis, Mark Hepworth, Douglas Robinson, Christina Smedley, Jon Tutcher and James Wilsdon. Any others with an expertise in this area are very welcome to contribute.

9. DATE OF NEXT MEETING

The next meeting takes place from 10.30am to 1pm on Thursday 20 July (venue tbc).
At that meeting, Charlie Leadbeater will be making a presentation on "Greening the Knowledge Economy", and asking for feedback on his pamphlet. Several of the other theme papers should also be available for discussion.

JW
5.5.00

Forum for the Future

Digital Futures Steering Group
10.30am - 1pm, Thursday 27 July

Minutes

Attendees:

Hark Gill, NatWest
James Wilsdon, Forum for the Future
Halima Khan, Forum for the Future
Annette Van Der Kolk, Forum for the Future
Charles Leadbeater
Frans Berkhout, SPRU
Mark Hepworth, Local Futures Group
Gillian Thomas, Green Alliance
Paul Jefferiss, Green Alliance
Becky Willis, Green Alliance
Gary Boswell, Nationwide
Giles Mackey, BP
Colin Gomm, BP
Alan George, Unilever
John Adams, DETR
Sarah Foster, SmartSW
Christina Smedley, Amazon.co.uk
Katrina Giles, AOL
Christina Smedley, Amazon.co.uk
Terry Beal, SWRDA
James Sergeant, Cabinet Office
Ian Wood, BT
Alex MacGillivray, New Economics Foundation
Nick Green, TCPA
Tim Cradock, WH Smith
Charles Tucker, Post Office
Jon Tutcher, Sun Microsystems
Douglas Robinson, DTI
Jonathan Sinclair-Wilson, Earthscan
Peter James, UK CEED
Chris O'Connor, Ericsson
Charlotte Hines, MORI
John Magill, MORI
Leanne Mallinson, WH Smith

Apologies:

Alan Knight, B&Q
Ben Jupp, Demos
Andy Gillespie, TCPA
April Vesey, DTI
Paul Pritchard, Royal and SunAlliance
Mike Hughes, BT

1. PROJECT UPDATE

Since the last meeting on 4 May, progress has been made on various fronts:

- The research partners have met with most of the companies in their clusters. Work is well advanced on the first drafts, and they should all be completed by mid-late August (see below for deadlines).

- 7000 copies of the project leaflet have been distributed, and the website at www.digitalfutures.org.uk went live in mid-June. These have generated a steady flow of inquiries from individuals and organisations interested in participating in the autumn seminars.

- The dates, venues and hosts for all the seminars are now finalised.

- The final conference is fixed for 1 March 2001 at the British Library.

- Several partners attended a very positive meeting with the e-Envoy on 12 June to discuss how we could collaborate more closely with his team at the Cabinet Office.

2. CHARLIE LEADBEATER

CL presented the key themes of his pamphlet *'Mind over Matter: Greening the New Economy'*, which will be launched on 11 September. A full draft will be circulated in mid-August.

This was followed by a discussion of the issues raised. Corporate partners should send CL any good examples of knowledge-driven dematerialisation within their own sector, which could be cited in the pamphlet. ***Action: corporate partners***

3. UPDATES ON RESEARCH THEMES

The other research partners gave an update on their progress, and reported back on meetings held with the corporate partners.

A set of firm deadlines was agreed for the completion of the first drafts.

Demos	11 August
Forum	18 August
G. Alliance	4 August
LFG	18 August
NEF	4 August
SPRU	*already completed*
TCPA	31 August
UK CEED	8 August

Action: research partners

Towards the end of August, the drafts will be circulated for comment. Everyone needs to identify appropriate people internally to review the papers. No-one is expected to comment on every paper, but we should all aim to review the 2 or 3 themes that we have been closely involved in. ***Action: all***

4. MORI POLLING

Charlotte Hines gave a summary of the work MORI will be doing for us in the autumn. There are three main elements to this:

- Sharing existing research on e-commerce, environment and social responsibility issues. In particular, CH offered to send copies of forthcoming MORI reports on ethical consumerism and consumer attitudes to e-commerce. ***Action: CH***

- Research with the general public on their attitudes to the social and environmental impacts of e-commerce. This will be carried out in September.

- Similar research with "captains of industry", so we can compare their attitudes to those of the public. This will be carried out in late October.

- Forum is asking the same attitudinal questions of 100 dot-com companies as part of its research, so we will also be able to compare results with this category.

5. AUTUMN SEMINARS

Dates, venues and hosts for all the seminars are summarised below. Full details are contained in the separate file attachment.

THEME	*HOST*	*DATE*
Green Alliance	Green Alliance	6-8 pm, 11 September
Demos	Sun Microsystems	2.30-5pm, 18 September
NEF	BT	10am-2pm, 19 September
Forum	Amazon.co.uk	10am-1pm, 3 October
LFG	South West RDA	10am-2pm, 5 October
SPRU	Royal & SunAlliance	10am-1pm, 11 October
UK CEED	Post Office	1-4pm, 12 October
TCPA	TCPA/WH Smith	10am-1.30pm, 13 October

These seminars will be high-level sessions aimed at experts and key stakeholders. For practical reasons, it won't be possible for everyone to attend them all. Instead, partners should aim to attend the two or three events where they or their colleagues can add the greatest value to the discussion. The exception to this is the Green Alliance pamphlet launch, to which everyone will be invited.

Please tell James as soon as possible which seminars you would like to attend. ***Action: all***

6. COMMUNICATIONS & LAUNCH STRATEGY

a. Pre-launch activity

Prior to the launch, there are a variety of ways in which we will publicise the project:

- *Project leaflet and website*

- *Mind over Matter: Greening the New Economy, 11 September*
  Charlie Leadbeater's pamphlet will be launched in September at an evening reception for a high-level audience of c.150 people. Other speakers will be Paul Ekins (Forum) and Evan Davis (Newsnight). It will be billed as a Green Alliance/Digital Futures event, and positioned as a "taste of what's to come" in the final report. There should be some opportunity to hook articles and other PR around this event.

- *Dot-com ethics, 16 November*
  To maintain the profile of the project through the autumn, we plan to launch Forum's paper on dot-com ethics at a business seminar in November for c.100 people. Unilever has kindly agreed to host this event. This event falls in the same week as the World Internet Forum in London, so we may be able to link to this in some way.

- *Articles/conferences.*
  Members of the steering group should continue to look for opportunities to publicise the project at conferences or in articles.

b. The final report

We have now agreed to produce three published outputs at the end of the project:

- ***A 4-6 page executive summary*** for Ministers, CEOs and the media

- ***A summary report – 'society.com: an agenda for a sustainable digital economy'.*** This will be a 50-page, high quality, colour report launched at the final conference. Free copies will be sent to key decision-makers, and will be available to download from the project website.

- ***A book 'Digital Futures: e-commerce, society and the environment'.*** Earthscan will publish full copies of all the theme papers (along with the summary) as a book. This will also be launched at the conference on 1 March.

  Jonathan Sinclair-Wilson from Earthscan explained that the publishing schedule will be quite tight, but should be possible, providing that the theme papers are edited in December. Alternative suggestions for the title of the book would be gratefully received.

  JW and J S-W will produce some detailed guidelines for the research partners on the publishing schedule and appropriate length and format of the final papers. ***Action: JW/JS-W***

- There will also be a special Digital Futures issue of Forum's magazine Green Futures, which will be distributed at the conference.

c. The launch conference

The launch conference will take place on Thursday 1 March 2001.

It will be preceded by a breakfast for CEOs (plus selected journalists) at One Aldwych.

A draft agenda for the day is shown below. None of this is set in stone, so please send any comments or suggestions for alternative speakers to JW. ***Action: All***

TIME	SESSION	SPEAKERS
(7.30 – 08.45)	***CEO Breakfast*** *One Aldwych*	*Jonathon Porritt* *Alex Allan* *1/2 CEOs*
09.00 - 09.30	**Registration**	
09.30 - 10.15	**Plenary 1:**	**Society.com: an agenda for a sustainable digital economy**

	Chair:	*Jonathan Porritt*
	Speakers:	Patricia Hewitt, e-Minister James Wilsdon, Forum for the Future
10.15 - 11.30	**Channels:**	
	i) e-topia? Scenarios for e-commerce and sustainability	Frans Berkhout, SPRU Ian Pearson, Chief Futurologist, BT John Browning, First Tuesday John Adams, DETR (chair)
	ii) e-commerce, transport and distribution	Peter James, UK CEED Stephen Joseph, Transport 2000 Stuart Sweetman, Post Office (chair) Lynda Wallace, Director, dropzone1.co.uk
	iii) surfing alone? e-commerce & social capital	Ben Jupp, Demos Katrina Giles, AOL Helen Wilkinson, e-Tribes Kevin Harris, Community Development Foundation Professor John Gray, LSE (chair)
	iv) dot-com ethics	Steve Frazier, MD, Amazon.co.uk Carol Dukes, CEO, Thinknatural.com James Wilsdon, Forum for the Future Kate Rawles, freelance philosopher (chair)
	v) e-Europe: a sustainable information society for all?	Peter Johnston, European Commission Rebecca Willis, Green Alliance (chair) Caroline Lucas MEP Mats-Olav Hedblom, Environmental Director, Ericsson
11.30 - 11.50	**Coffee break**	
11.50 – 13.00	**Plenary 2:**	**Greening the New Economy**
	Chair:	*Eva Pascoe, CEO, zoom.co.uk*
	Speakers:	Michael Meacher, DETR Charles Leadbeater Sir Peter Bonfield, CEO, BT Ian Christie, Local Futures Group
13.00-14.00	**Lunch**	+ *Press Conference*
14.00 - 15.10	**Plenary 3:**	**Beyond the digital divide: e-commerce, community and civic life**
	Chair:	*Shanker Trivedi, Vice President, Sun Microsystems*
	Speakers:	Alex MacGillivray, NEF Alex Allan, e-Envoy Ben Jupp, Demos Madeleine Bunting, The Guardian
15.10-15.30	*Tea break*	
15.30 – 16.45	**Channels 2**	
	i) e-materialisation	Joseph Romm, Centre for Climate Solutions ?, BP (chair) Charles Leadbeater Chris Tuppen, BT

	ii) Sink or surf? E-commerce and social inclusion	David Boyle, NEF Steve Woolgar, Virtual Society (chair) ?, Nationwide Building Society Margaret Moran MP
	iii) From bricks to clicks? Planning for the digital economy	Andy/Simon/Nick, TCPA Richard Handover, CEO, WH Smith Prof. Jim Norton, Institute of Directors (chair) Julie Meyer, First Tuesday
	iv) e-regions: who's lagging, who's leading?	Ian Christie, LFG Mark Hepworth, LFG ?, NatWest (Chair) Jill Barrow, CEO, SW RDA
	v) bridging the global digital divide	Sophia Tickell, Oxfam David Woolnough, DfiD Mike Caldwell, Vodafone
16.45 – 17.30	**Plenary 4:** *Chair:*	**Visions of the digital future** *Kirsty Wark, Newsnight* Bob Geldof, CEO, Deckchair.com Jeff Bezos, CEO, Amazon.com Jonathan Porritt

d. PR strategy

To accompany the launch, our media strategy will target the broadsheet press, Today programme, business correspondents, environment/social affairs correspondents, and specialist publications

We will almost certainly use an external PR company for communications support. This is likely to cost in the region of £10K. Any additional help we can get from company PR departments would be greatly appreciated.

6. DATE OF NEXT MEETING

10.30 – 1pm on Thursday 16 November. Please note this in your diaries.

Unilever has kindly offered to host the meeting at Unilever House, Blackfriars, London EC4P 4BQ.

This meeting will focus on reviewing the final draft papers, which are due for completion in early November. The steering group will be followed by the launch seminar for the Forum's paper on 'Dot-com ethics', which will run from 2-6pm. Speakers at this seminar will include Jonathon Porritt and Alex Allan (tbc). Invitations will be sent out shortly to all partners.

James Wilsdon
28.7.00

Forum for the Future

Digital Futures Steering Group
10.30am - 1pm, Thursday 16 November 2000
Unilever House

Minutes

Attendees:

Jonathon Porritt, Forum for the Future
James Wilsdon, Forum for the Future
Paul Miller, Forum for the Future
Frans Berkhout, SPRU
Becky Willis, Green Alliance
Gary Boswell, Nationwide
Giles Mackey, BP
Alan George, Unilever
Alan Jelly, Unilever
John Adams, DETR
Martin LeJeune, Fishburn Hedges
Rachel Jones, Fishburn Hedges
Anna Hilton, Fishburn Hedges
Alex MacGillivray, NEF
Ben Jupp, NOF/Demos
Tom Bentley, Demos
Nick Green, TCPA
Tim Cradock, WH Smith
Charles Tucker, Post Office
Kim Sykes, Post Office
Jon Tutcher, Sun Microsystems
Douglas Robinson, DTI
April Vesey, DTI
Jonathan Sinclair-Wilson, Earthscan
Peter James, UK CEED
Charlotte Hines, MORI
John Magill, MORI
Ian Christie, Local Futures Group

Apologies:
Peter Madden, DETR
James Sergeant, Cabinet Office
Mike Hughes, BT
Ian Wood, BT
Hark Gill, Royal Bank of Scotland
Katrina Giles, AOL
Tim Cradock, WH Smith
Terry Beal, SW RDA
Colin Bluck, Smart SW

1. PROJECT UPDATE

Since the last meeting on 27 July, a great deal of progress has been made. The project is now entering its final and most critical phase.

- Eight project seminars were held during September and October, involving a total of over 300 participants.
- Charlie Leadbeater's pamphlet *'Mind over Matter: Greening the New Economy'* was published on 11 September and has generated a great deal of interest.
- Digital Futures was highlighted in the Prime Minister's recent environment speech as a leading example of government/business/NGO collaboration.

2. DRAFTING PROCESS FOR SUMMARY REPORT

Now that the theme papers are almost all complete, we are able to start drafting the summary report. This will be structured around ten key principles, or "dot-commandments".

The process for completing the summary report will be as follows:

4 December	**1st draft circulated to all partners**
11 December	**Comments back to JW**
w/c 11 Dec	**Research & govt partners meet to finalise recommendations**
19 Dec	**2nd draft circulated to all partners**
11 January	**Steering Group meeting – final sign-off**

Action: Please note these dates in diaries

3. RESULTS OF OPINION POLLING - MORI

Charlotte Hines gave a summary of the polling MORI has done. There are two main elements to this:

- Research with the general public on their attitudes to the social and environmental impacts of e-commerce. This is now complete.
- Similar research with "captains of industry". Full results of this will be available in December.

We will be using the MORI poll results in the press strategy for the launch.

4. UPDATE ON THE DF BOOK

All work is on schedule to meet the Earthscan deadlines. A number of possible cover designs were circulated and Jonathan Sinclair-Wilson asked that comments on these should be sent to him.

Action: All

5. LAUNCH PR

Martin LeJeune & Rachel Jones from Fishburn Hedges outlined the PR strategy for the launch. Business, technology and environment journalists are currently being targeted, in order to raise awareness of the project before March 2001.

Forum's paper, on "Dot-com ethics: e-business and sustainability" will be published in January to raise the profile of the project as a whole.

Any offers of media/PR support for the launch from the corporate partners would be gratefully received.

Action: Corporate partners

6. LAUNCH CONFERENCE

The agenda for 1 March is now finalised, and we've got a fantastic line-up of speakers, including Patricia Hewitt, Michael Meacher, Shanker Trivedi (Sun), Martha Lane Fox (lastminute.com) and Brian Eno.

Publicity material for the conference will be circulated at the start of December. All members of the steering group will receive free tickets and an invitation to the post-conference party, which will be held at Home House on the evening of 1 March.

7. FUTURE PLANS BEYOND 1 MARCH

We discussed follow-up work for next year. Ideally, we would like to announce some new projects at the conference on 1 March.

Forum has submitted a proposal to the European Commission to run a Digital Europe project looking at the social and environmental impacts of e-business across the EU.

Demos and Forum are also considering establishing a network for social and environmental e-entrepreneurs.

If anyone else has ideas or suggestions for future projects, please get in touch with James.

Action: All

8. DATE OF NEXT MEETING

10.30 – 1pm on Thursday 11 January. Please note this in your diaries.

The Post Office has kindly agreed to host this meeting. Details of location to follow.

This meeting will be the final opportunity to review the summary report before it goes to print at the end of January.

PM/JW
21.11.00

Forum for the Future

Digital Futures Steering Group
10.30am - 1pm, Thursday 11 January 2001
DETR

Minutes

Attendees:

James Wilsdon, Forum for the Future
George Martin, Forum for the Future
Paul Miller, Forum for the Future
Rob Deeming, Forum for the Future
Julia Hertin, SPRU
Becky Willis, Green Alliance
Gary Boswell, Nationwide
John Adams, DETR
Katrina Giles, AOL
Paul Pritchard, Royal & Sun Alliance
Tim Cradock, WH Smith
Charles Tucker, Post Office
Kim Sykes, Post Office
Douglas Robinson, DTI
April Vesey, DTI
Jonathan Sinclair-Wilson, Earthscan
Ian Christie, Local Futures Group
James Sergeant, Cabinet Office
Mike Hughes, BT
Hark Gill, Royal Bank of Scotland

1. PROJECT UPDATE

a. Book – the Digital Futures book has now been edited and is at the proofing stage. It will go to print in the next 2 weeks.

b. Summary Report – After a meeting of the research partners to discuss the first draft in December, a second draft has been prepared. The design process is well underway, and the report will go to press at the end of January.

We need to know how many copies of both the book and summary report each partner organisation wants for internal and external circulation. Reasonable quantities of the summary report will be freely available. The book will need to be paid for, but we can negotiate a bulk discount from Earthscan if we know in advance how many copies we need. Please send details of your requirements to Paul Miller. ***Action: All***

2. LAUNCH CONFERENCE, PRESS & PR

Ticket sales are going well for the 1 March conference, although there are still about 60 places available. If partners would like to make multiple bookings please contact Paul Miller ASAP.

Also, if partners would like any materials to be included in the delegate packs, or displayed on the day, please get in touch with Paul. ***Action: all***

With the help of Fishburn Hedges, we have started to build media interest in the project findings. We anticipate coverage in a range of broadsheet papers, as well as specialist environmental, social, IT and e-commerce magazines and journals.

We are keen to assist corporate partners in obtaining coverage of their involvement in the project, so please let us know if there are any sector-specific magazines you would like us to approach.
Action: corporate partners

3. SUMMARY REPORT

If partners have any further comments on the latest draft of the summary report, these need to be sent to James within the next few days. A final draft will be circulated on 22 January. ***Action: All***

Relevant examples of company initiatives should also be forwarded ASAP for inclusion in the summary report. ***Action: Corporate partners***

James will circulate some suggested wording regarding the relationship of the partners to the research findings within the next few days. ***Action: JW***

4. FUTURE PLANS

Forum for the Future has received confirmation from the European Commission of funding for a follow-up study to carry forward the findings of Digital Futures at a pan-European level. We would be interested in hearing from any partners interested in joining this project.

If other research, government or corporate partners would like to publicise their future plans around this agenda in the summary report, they should send details to Forum ASAP. ***Action: All***

PM/JW
12.1.01

Appendix 2 – Scenarios workshop briefing

Forum for the Future

DIGITAL FUTURES

Scenarios workshop

DTI Conference Centre, 1 Victoria Street, London
10.15am – 5pm, 29 February 2000

1. WORKSHOP AGENDA

10.15	Arrival & coffee	
10.30	Welcome	Douglas Robinson, DTI
10.35	Digital Futures: an overview	James Wilsdon, Forum
10.45	Aims of the day ground rules outline of process	Perry Walker, NEF
11.00	E-commerce and sustainability: key issues	Chris Tuppen, BT
11.20	The scenarios framework the purpose of scenarios SPRU's methodology	Malcolm Eames, SPRU
11.45	Small groups x 4 each group takes one scenario *Q1: How will e-commerce develop under this scenario from now until 2020?* *Q2: What sustainability challenges and opportunities will these developments create?*	4 facilitators
1.00	Lunch + display of group feedback	
1.45	Plenary agree 8-12 key themes divide into new groups	Perry Walker
2.00	Small groups x 4 each group takes 2-3 themes *Q3: How do these key themes or impacts compare under each scenario?* *Q4: What are the policy implications for Government and business?*	4 facilitators
3.15	Break	
3.30	Plenary rapporteurs feedback questions and discussion	Perry Walker
4.00	Ideas Marketplace input from research partners formation of research clusters	Perry Walker/ James Wilsdon
4.50	Conclusions and next steps	James Wilsdon
5.00	*Drinks reception*	

2. PARTICIPANTS

John Adams	Sustainable Development Unit, DETR
Keith Anderson	Northeast Consulting/NerveWire Inc.
Andrew Arnold	Future Unit, DTI
Toby Belsom	Henderson Investors
Tom Bentley	Demos
Colin Bluck	Smart South West
Gary Boswell	Nationwide Building Society
Caspar Bowden	Foundation for Information Policy and Research
David Boyle	New Economics Foundation
Anna Browne	Forum for the Future
Philip Andrews	Countryside Agency
Dr Sally Cairns	ESRC Transport Studies Unit, University College London
Ian Christie	Local Futures Group
Edwin Davis	Nationwide Building Society
Malcolm Eames	Science Policy Research Unit, Sussex University
Stephen Farrell	comm.unity, Business in the Community
Andrew Fiddaman	Prince of Wales Business Leaders Forum
John Fisher	iSociety
Maureen Gardiner	Future Markets Group, Post Office
Tara Garnett	Transport 2000
Hark Gill	NatWest Corporate Banking Services
Prof. Andy Gillespie	Centre for Urban & Regional Development Studies University of Newcastle
Andrew Glen	Sun Microsystems
Colin Gomm	BP Amoco
Laurence Green	Radiocommunication Agency
Nick Green	Town and Country Planning Association
Steve Haigh	BT
Richard Hawkins	Science Policy Research Unit, Sussex University
Louise Hawson	Forum for the Future
Mary Heathcote	Retail & Consumer Services Panel, Foresight
Adrian Henriques	New Economics Foundation
Julia Hertin	Science Policy Research Unit, Sussex University
Bronwyn Hill	DETR
Sheila Honey	Communication and Information Industries, DTI
Alison Hopkinson	National Consumer Council
Prof. Peter James	Bradford University/UK CEED
Julian Johnson	NatWest Corporate Banking Services
Joanna Johnston	Henderson Investors
Dr. Alan Knight	B&Q
Alex MacGillivray	New Economics Foundation
Peter Madden	Green Alliance
Simon Marvin	University of Salford
Gordon Mackerron	Science Policy Research Unit, Sussex University
Mike McQueen	Nationwide Building Society
Claire Milne	Public Utilities Access Forum
Andy Nicholls	NatWest Corporate Banking Services
Paul Pritchard	Royal & SunAlliance
Joe Ravetz	Centre for Urban & Regional Ecology, Manchester University
Douglas Robinson	Environment Directorate, DTI
Vernon Samuels	Filton EcoNet

Dr Peter Saunders	DETR
Jonathan Selwyn	UK CEED
Charles Tucker	Post Office
Chris Tuppen	BT
Jon Tutcher	Sun Microsystems
April Vesey	Environment Directorate, DTI
Meg Viner	Unilever
Perry Walker	New Economics Foundation
David Wilkinson	DTI
Rebecca Willis	Green Alliance
James Wilsdon	Forum for the Future
Ian Wood	BT

3. PROJECT BACKGROUND

"The increasing use of e-commerce could have a profound impact on our ability to be more sustainable, but it is important that we assess the benefits and problems in a systematic and balanced way. My Department, with the DETR, is supporting a year long inquiry into the environmental and social impacts of e-commerce."
Patricia Hewitt, Minister for E-commerce

The overall aim of the *Digital Futures* project is to explore the complex web of issues surrounding e-commerce and sustainability, and establish some useful recommendations for Government and business.

Patricia Hewitt, e-Minister at the DTI, formally launched the project on 1 February. It will run for one year, and will involve a consortium of eight research organisations, twelve corporate partners and three government departments. The list of current partners is shown below. We expect the remaining corporate partners to be finalised shortly.

Research partners	**Corporate partners**	**Government partners**
Demos	BP Amoco	Cabinet Office
Forum for the Future	BT	DETR
Green Alliance	Kingfisher plc	DTI
Local Futures Group	Nationwide Building Society	Foresight
New Economics Foundation	NatWest Group	South West RDA/Smart SW
Science Policy Research Unit	The Post Office	
Town & Country Planning Association	Sun Microsystems	
UK CEED/University of Bradford	Unilever	

Initial research findings will be available at the end of July, and the final report will be published in February 2001. In the autumn, we will be holding a series of stakeholder seminars to review the draft papers and promote wider debate about e-commerce and sustainability.

What do we mean by e-commerce?

There is currently no standard, internationally-agreed definition of e-commerce. But the term usually describes the application of information and communication technology (ICT) to commercial transactions. It includes both *business-to-consumer* transactions, and *business-to-business* transactions at any stage in a supply chain.

Although invisible to most of us, *business-to-business (B2B)* e-commerce dwarfs *business-to-consumer* in both scale and value.[1] Consumer e-commerce is just the tip of a very large iceberg – the most visible aspect of the all-encompassing digital revolution.

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[1] Hawkins. R, "*Creating a Positive Environment for Electronic Commerce in Europe*", INK Working Paper N. 36, SPRU, 1998, P. 7

Within the *Digital Futures* project, we have adopted the broad definition of e-commerce proposed by the Cabinet Office in its 1999 report *'e-commerce@its.best.uk'*:[2]

> 'Electronic commerce is the exchange of information across electronic networks, at any stage in the supply chain, whether within an organisation, between businesses, between businesses and consumers, or between the public and private sectors, whether paid or unpaid.'

What do we mean by sustainable development?

Just as there is no single definition of e-commerce, there is no single definition of sustainable development. However, the Government's sustainable development strategy *'A Better Quality of Life'* explains that it requires us to meet four objectives at the same time:

- social progress which recognises the needs of everyone;
- effective protection of the environment;
- prudent use of natural resources; and
- maintenance of high and stable levels of economic growth and employment."[3]

It is the impact of e-commerce on these four objectives - and the potential trade-offs between them - that we will be addressing under each of our research themes.

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[2] *e-commerce@its.best.uk*, Cabinet Office Performance and Innovation Unit, September 1999

[3] *A better quality of life: A strategy for sustainable development for the United Kingdom*, DETR, 1999: http://www.environment.detr.gov.uk/sustainable/quality/life/index.htm

4. THE SCENARIOS WORKSHOP

"Scenarios are a set of plausible and challenging stories about what might happen...They are not forecasts; that is, they do not predict what will happen by extrapolating from the past, but instead offer...very different stories of how the future might look" Shell International

Why use scenarios?

The future is uncertain, often the focus of dispute, and always the subject of intervention and modification by different actors in society. There is little that can be said with certainty about the way organisations or society will develop over the longer term. This is especially true for developments such as e-commerce, which are driven by rapidly-evolving technologies.

It would be impossible for us to predict the precise shape and form that e-commerce will take in 2010 or 2020. Instead, we will approach the problem of picturing the future in an exploratory way using scenarios.

Scenarios are powerful tools for addressing the future. They do not attempt to predict what will happen, but rather offer a number of plausible visions of how the future might look. By fostering creativity and encouraging us to look beyond our narrow mindsets, scenarios can improve the quality of our long-range decision making.

SPRU's scenarios framework

The particular approach used within this workshop will be based upon a scenarios framework developed by SPRU for the Natural Resources and Environment Panel of the Foresight Programme. This framework has since been used by a variety of public sector and academic bodies.

The scenarios framework developed by SPRU describes four possible future worlds:

- ***World Markets*** – a world defined by an emphasis on private consumption and a highly developed and integrated world trading system.

- ***Global Sustainability*** – a world in which social and ecological values are considered in economic decisions, and in which strong collective action through global institutions tackles environmental problems

- ***Provincial Enterprise*** – a world of consumerist and short-term values couples with policy-making systems which assert national and regional concerns and priorities.

- ***Local Stewardship*** – a world where strong national and regional governance allows social and ecological values to play a strong role in the development of markets and behaviour.

A full description of the scenarios framework is contained in the Environmental Futures Report (see separate PDF file attachment). Please take a few minutes to look over this report before the workshop. Copies will also be available on the day.

The purpose of the workshop

The scenarios workshop is an opportunity for the *Digital Futures* partners to think creatively about the possible futures for e-commerce, and the sustainability challenges and opportunities that e-commerce will create. By the end of the day, we hope to have reached a shared

understanding about these issues, which will give us a solid foundation for the rest of the research process.

Following the workshop, SPRU will develop a detailed set scenarios for e-commerce and sustainable development, which will provide a common reference point for the work carried out under the other research themes. These scenarios will comprise:

- A set of storylines
- An inventory of sustainability themes and impacts
- A set of key indicators e.g. energy use, CO_2 emissions, employment, social exclusion, land use

What can you bring to the day?

Around 60 people will be attending the workshop, drawn from a wide variety of companies, government departments, NGOs and think tanks. We hope that you will use the opportunity to:

- Actively contribute your knowledge and expertise
- Participate in imaginatively constructing the future
- Learn from others
- Be creative, and hopefully...
- Have some fun!

5. WORKSHOP FORMAT

The first part of the workshop will consist of four short presentations:

- James Wilsdon (Forum for the Future) will give an overview of the project
- Perry Walker (New Economics Foundation) will set out the process and ground rules
- Chris Tuppen (BT) will give a business perspective on e-commerce and sustainability
- Malcolm Eames (SPRU) will explain SPRU's scenarios framework

We will then break into four small groups, each of which will develop one scenario. These should be fast-moving and creative sessions. The groups will look first at two questions:

Q1. How will e-commerce develop under this scenario from now until 2020?

In particular we want to ask what the **technology** and what the **market** will look like

- What will be the scale of e-commerce?
- What will be its penetration in various sectors?
- What technologies and platforms will be used e.g. PCs, mobile phones, digital TV?
- What will be the access profile and how much control will users have?
- What will the market structure look like, i.e. degree of competition, etc

Predictions about the growth and scale of e-commerce vary dramatically. In the UK, around 14 million people currently have access to the Internet, and e-commerce revenues are expected to reach £10 billion in 2000. But the Government is keen to see this expand, and has pledged to make the UK "the best environment in the world for e-commerce" by 2002.

Globally, the OECD estimates that e-commerce could be worth as much as $1 trillion by 2005. Undoubtedly, the fastest growth will be in business-to-business e-commerce, which is predicted to total $250 billion in 2000 (Forrester Research). The biggest change in the consumer market over the next five years will result from technology convergence, as mobile phones and digital TV overtake desktop PCs as the main platform for e-commerce.

However, amidst all the hype, it's worth remembering that 40% of people in the developing world are yet to make their first telephone call (UNDP). Even in the UK, e-commerce is still the privilege of a relative minority, and a lot needs to be done to close the "digital divide".

Q2: What sustainability challenges and opportunities will these developments create?

Issues to consider here include:

- **Energy/dematerialisation**

Can e-commerce help to create a low-energy "weightless" economy? How many products and services (e.g. books, records, banking) will benefit from dematerialisation? In some sectors, this is happening already - for example, the ratio of energy consumption per book sold in Waterstones versus Amazon.com is 16:1. But will such benefits be lost in the "rebound effect" of ever greater overall levels of consumption?

- **Transport**

What will e-commerce mean for patterns of transport and distribution? To what extent will home delivery replace the need to travel? Will it encourage more international shipping and air freight as customers are presented with direct access to global markets?

- **Planning**

How will e-commerce shape the future of our towns and cities? Will the shift way from bricks and mortar towards "clicks and mortar" accelerate the decline of the High Street? What will it mean for rural shops and out-of-town stores?

- **Social inclusion**

How do we ensure that everyone has access to the benefits of e-commerce? How will it effect patterns of community and social interaction? What will it mean for the elderly and the disabled?

- **Local economies**

Will e-commerce lead to a further strengthening of the global economy at the expense of the local? How can it be used to strengthen and enhance local economies? How do we ensure that the benefits of e-commerce are enjoyed by SMEs and spread across all regions of the UK?

- **Corporate social responsibility**

What are the implications of e-commerce for corporate social and environmental responsibility? How will e-commerce affect issues such as social accountability, governance, ethical trading, product stewardship and stakeholder dialogue?

- **Consumers, privacy and civil liberties**

What are the implications of e-commerce for privacy, civil liberties and consumer rights? Can the internet empower consumers by providing more information about the sustainability of goods and services, or will it further distance them from the environmental and social consequences of their consumption?

Other issues will inevitably arise during the course of the workshop. In the afternoon, the groups will be reconfigured so that they contain a mix of people from all four scenarios. These new groups will then answer two further questions:

Q3: How do these key themes or impacts compare under each scenario?

Q4: What are the policy implications for Government and business?

In the final session, the eight *Digital Futures* research organisations will be asked to respond to some of the points raised during the day, and explain how they intend to carry these forward in their strands of the project. We will then open an "Ideas Marketplace", to enable the corporate and Government partners to indicate their interest in particular themes.

The eight themes are listed on the next page. By the end of this process, we aim to have established small research clusters around each theme.

Appendix 3 – Dot-com ethics survey

digital futures

Dot-com ethics: e-business and social responsibility

Digital Futures is a Government-backed inquiry into the social and environmental impacts of e-commerce and the digital economy. Co-ordinated by Forum for the Future, the project is a unique partnership between three Government departments, eight think-tanks and fourteen companies, ranging from established giants such as BT, Unilever and the Post Office, through to 'new economy' companies such as Sun Microsystems, AOL and Amazon.co.uk.

With support from Imperial College, we are conducting this survey of e-commerce and IT companies in order to explore their attitudes to social and environmental responsibility. The survey should take less than 10 minutes to complete. All responses will be treated confidentially and will not be directly attributed to you or your company.

Part 1: Personal and company details

Company	**Date survey completed**

Name	**Male / Female**

Age bracket	<20	20-29	30-39	40-49	50-59	60+

Position in company

- ☐ CEO
- ☐ Senior Management
- ☐ Finance
- ☐ Human Resources
- ☐ Public affairs
- ☐ Environment/community affairs
- ☐ Marketing
- ☐ Other (please specify)

Length of time in company

- ☐ Less than 6 months
- ☐ 6 months – 12 months
- ☐ 1-3 years
- ☐ 3-5 years
- ☐ More than 5 years

Size of company

- ☐ Small (<50 employees)
- ☐ Medium (50-500 employees)
- ☐ Large (> 500 employees)

Forum for the Future

Digital Futures is co-ordinated by Forum for the Future
The mission of Forum for the Future is to accelerate the building of a sustainable way of life, taking a positive, solutions-oriented approach.
Registered charity number 1040519.

Part 2: Social and environmental responsibility

Business now has to meet a much broader range of expectations than in the past. The pressures are coming from all directions: government is encouraging business to be more responsible; consumers are requiring higher ethical standards; pressure groups are becoming more articulate and sophisticated; and communities are demanding a stake in decision-making. Issues rising up the agenda include environmental sustainability, corporate governance, ethics and social accountability.

1. How important are social and environmental issues to your company?

- ☐ Extremely important
- ☐ Important
- ☐ Slightly important
- ☐ Unimportant
- ☐ Not sure

2. How important are these issues to you as an individual?

- ☐ Extremely important
- ☐ Important
- ☐ Slightly important
- ☐ Unimportant
- ☐ Not sure

3. Looking to the future, how important do you think these issues will be to your company three years from now?

- ☐ More important
- ☐ Same as now
- ☐ Less important
- ☐ Not sure

4. Thinking more broadly about e-commerce, how strongly do you agree or disagree with the following statements?

	Agreement				
The positive effects of e-commerce on society will outweigh the negative	1	2	3	4	5
With the growth of e-commerce, more people are likely to be socially excluded	1	2	3	4	5
E-commerce will have a positive impact on the environment	1	2	3	4	5
E-commerce will reduce traffic congestion	1	2	3	4	5
E-commerce companies are more likely to care about social and environmental issues than traditional companies	1	2	3	4	5
E-commerce will enable companies to be more responsive to consumers' ethical and environmental concerns	1	2	3	4	5
Companies with a good environmental and social reputation are likely to benefit from improved financial performance	1	2	3	4	5

Agreement Ratings
1: Agree strongly
2: Agree slightly
3: Neither agree nor disagree
4: Disagree slightly
5: Strongly disagree

5. What do you consider the most positive and negative social or environmental consequences of the growth in e-commerce?

Most positive .....

.....

Most negative .....

.....

6. How important are the following issues in the day-to-day running of your business?

	Importance				
Improving profitability	1	2	3	4	5
Quality of products and services	1	2	3	4	5
Employee welfare	1	2	3	4	5
Leadership that looks beyond the short term	1	2	3	4	5
High ethical standards	1	2	3	4	5
Reputation	1	2	3	4	5
Making a positive contribution to society	1	2	3	4	5

Importance Ratings
1: Very important
2: Important
3: Slightly important
4: Unimportant
5: Not sure

7. Do you have systems or policies in place to address the following issues?

Measuring environmental impacts (e.g. energy use, waste)	yes/no
Measuring social impacts (e.g. fair trade, labour conditions, human rights)	yes/no
Screening products or suppliers on the basis of environmental/social performance	yes/no
Measuring transport impacts (e.g. mileage, product delivery, staff travel)	yes/no
Training staff about environmental and social issues	yes/no

8. If you answered 'no' to any of the items under Q.7, what is the reason for this?

- ☐ We don't have any significant environmental or social impacts
- ☐ We don't have enough time to think about these issues
- ☐ We don't have enough money to address these issues
- ☐ We don't have the in-house expertise to address these issues
- ☐ No-one has asked us to put such systems in place
- ☐ We simply don't care about these issues

9. The Government has placed a lot of emphasis on ensuring that everyone has access to the Internet. What do you think is the best way of bridging the 'Digital Divide'?

- ☐ New technologies such as Digital TV will automatically solve the problem
- ☐ Government needs to increase public spending
- ☐ IT and dot-com companies need to invest more in widening access

10. In recent years, there has been a lot of debate about the responsibility of companies to their different stakeholders. How important are the views of the following stakeholder groups to your company's strategy?

	Importance				
Government	1	2	3	4	5
Venture capitalists and investors	1	2	3	4	5
Consumers, clients	1	2	3	4	5
Employees	1	2	3	4	5
Suppliers	1	2	3	4	5
Trade unions	1	2	3	4	5
Local geographical community	1	2	3	4	5
On-line community	1	2	3	4	5
Media and trade press	1	2	3	4	5
Pressure groups and charities	1	2	3	4	5
Other – please identify below	1	2	3	4	5

Importance Ratings
1: Very important
2: Important
3: Slightly important
4: Unimportant
5: Not sure

Part 3: Future involvement

11. Have you ever been asked to consider these issues before?

- ☐ Yes

If yes, by whom.....

- ☐ No

12. Would you be interested in finding out more about these issues?

- ☐ Yes
- ☐ No

13. Would you be interested in becoming more involved in the Digital Futures project e.g. by attending one of our seminars later in the year?

- ☐ Yes
- ☐ No
- ☐ Let me give you the name of another person who might

14. Do you have any other comments about the issues raised in this survey or the Digital Futures project that you would like us to consider?

Comments:

Thank you for taking the time to fill out this survey

Please return the form in the pre-paid envelope to:
James Wilsdon, Forum for the Future
11 Bawdale Road, London SE22 9DL
Email: j.wilsdon@forumforthefuture.org.uk

If you would like to get more involved with the Digital Futures project, we will be holding a series of consultation seminars in the autumn, which you would be very welcome to attend. You can reserve a place by e-mailing me or by registering your interest at www.digitalfutures.org.uk

Appendix 4 – Press releases

Press Release

Forum for the **Future**

EMBARGOED UNTIL 0001 ON TUESDAY 1 FEBRUARY 2000

HOW GREEN IS THE INTERNET?

Government and business launch inquiry into environmental and social benefits of e-commerce

Patricia Hewitt, e-Minister at the DTI, will today launch a year-long inquiry into the environmental and social impacts of the explosion in e-commerce.

Much attention has focused on the economic potential of e-commerce, but this will be the first detailed analysis of its wider impacts on energy use, transport, planning and social exclusion. Speaking at today's Fabian Society/ SERA conference on '*Environmental Modernisation*', Patricia Hewitt will say:

> "The increasing use of e-commerce by business, Government, and the public at large could have a profound impact on our ability to become more sustainable. E-commerce has the potential to reduce the resource intensity of many products and services, but it is important that we assess the benefits and problems in a systematic and balanced way."

The *Digital Futures* inquiry is being backed by a consortium of government departments, companies and think-tanks. Tony Shaw, Chief Executive of NatWest Corporate Banking explained why NatWest is supporting the project. He said:

> "E-commerce is changing the face of business and is set to transform the way all of us live and work. NatWest is committed to ensuring that our corporate customers are prepared for the challenges of this new 'e' World. Moreover, we recognise that we have a wider responsibility to harness the power of the Internet to promote wider social and environmental goals."

cont...

Shanker Trivedi, Vice President for Sun Microsystems™ in the UK and Ireland, another of the companies supporting the project, said:

> "The Internet is rapidly becoming the most important medium for both interactions and transactions between people and organisations. We must ensure that we're aware of the impact of this new dot-com paradigm on individuals and the environment. Sun, as a leader in the Internet, is delighted to be supporting such a forward-looking piece of research."

Digital Futures will run throughout 2000, with a final report due in early 2001. This will set out an 'agenda for a sustainable digital economy', with key recommendations for Government, business, regional development agencies and local authorities.

James Wilsdon, Senior Policy Adviser at Forum for the Future, the think-tank co-ordinating the project, said:

> "The jury is still out on whether the digital economy will evolve into a powerful ally of sustainable development, or a spur to greater social exclusion and environmental destruction. If we're to make the most of these new technologies, there's an urgent need for dialogue between policy-makers and the companies who will be driving the dot-com revolution."

For more information, please contact James Wilsdon on +44 1242 262010 or e-mail j.wilsdon@forumforthefuture.org.uk

NOTES TO EDITORS

1. The Digital Futures project will be launched today by Patricia Hewitt, DTI Minister for Small Firms and E-commerce at the Fabian Society/SERA conference on 'Environmental Modernisation'.

2. The project will involve a consortium of government departments, companies, NGOs and think-tanks:
   - Within government, it is being backed by the DTI, DETR, the Cabinet Office and the South West Regional Development Agency.
   - Corporate partners include BT, BP Amoco, Kingfisher, Nationwide Building Society, NatWest Group, Sun Microsystems, The Post Office and Unilever.
   - Participating think-tanks include Demos, Forum for the Future, Green Alliance, Local Futures Group, New Economics Foundation, the Science Policy Research Unit, the Town and County Planning Association and UK CEED/University of Bradford.

3. The project will look ahead to 2010 to predict the effects of e-commerce in several key areas:

- ***Energy use*** - Will e-commerce create a low-energy 'weightless' economy? Can it help the UK to meet its climate change targets? How many products and services (such as records, banking) will be dematerialised altogether?
- ***Transport*** - What will internet shopping mean for patterns of transport and distribution? To what extent will home delivery replace the need to travel?
- ***Planning*** - How will e-commerce shape the future of our towns and cities? Will the shift away from bricks and mortar towards 'clicks and mortar' accelerate the decline of the High Street?
- ***Social inclusion*** - How do we ensure that everyone enjoys the benefits of the internet? How will e-commerce affect patterns of community and social interaction?

4. The December 1998 Competitiveness White Paper placed e-commerce at the heart of the Government's vision of a knowledge-driven economy, and set the ambitious goal of making the UK 'the best environment in the world for e-commerce by 2002'. This was reinforced by the publication in September 1999 of the Cabinet Office report *e-commerce@its.best.uk*, which outlined sixty recommendations designed to stimulate e-commerce.

   In November 1999, Stephen Byers, Secretary of State for Trade and Industry, committed the DTI to producing a sustainable development strategy, in order to bring 'added impetus and greater coherence to the way we conduct our own business in creating a sustainable economy.' This inquiry will contribute to the development of that strategy, by identifying the social and environmental implications of e-commerce.

5. *Digital Futures* is being co-ordinated by the sustainable development think-tank Forum for the Future. Founded in 1996 by three of the UK's leading environmentalists – Jonathon Porritt, Sara Parkin and Paul Ekins – Forum for the Future has a mission to accelerate the building of a sustainable way of life by taking a positive, solutions-oriented approach.

/ends.

Forum for the Future

Press Release

Embargoed until 00:01 hours, 1 March 2001

GOVERNMENT SHOULD ACT NOW TO UNLOCK THE POTENTIAL OF THE DIGITAL ECONOMY OR RISK DAMAGING CONSEQUENCES

A report released today by think-tank Forum for the Future calls on the Government to seize the social and environmental opportunities created by the internet and e-commerce. With the right blend of policy and incentives, the new economy could become cleaner, greener and more socially inclusive than then old. But without concerted action now, we run the risk of problems in the future – from increased social exclusion, to streets jammed with half-empty delivery vans and a substantial growth in air freight.

The report, which is the culmination of the year-long Digital Futures inquiry into the impacts of e-commerce on society and the environment, calls on Andrew Pinder, the new e-Envoy, to put social and environmental innovation at the heart of government e-policy.

The report sets out 10 'dot-commandments' for a sustainable digital economy and a series of detailed supporting recommendations. Recommendations to **Government** include:

- The Government should invest a share of its new economy windfalls (for example, from the auctioning of spectrum licenses) into a social venture fund for projects which use internet technologies to promote social cohesion and improve quality of life.
- The Government has pledged 'to make the UK the best environment in the world for e-commerce'. As part of its commitment to environmental sustainability, it should set an additional target: 'to make UK e-commerce the best in the world for the environment.'
- Government should provide assistance for the development of the world's first 'ecobot' – a search engine capable of locating products and services on the basis of their environmental or ethical performance.
- Regional Development Agencies should develop a template for 'sustainable e-Regions' to integrate policy on e-commerce, social inclusion and environmental protection.

GOVERNMENT SHOULD ACT NOW TO UNLOCK THE POTENTIAL OF THE DIGITAL ECONOMY OR RISK DAMAGING CONSEQUENCES.../3

Wilsdon added: "Taking up the sustainability challenge requires creativity, innovation and alliance-building. It requires a different way of thinking. But this is what e-businesses are so good at. We need to channel their dynamism and creativity for the benefit of all: to turn the new economy into a force not just for economic good, but for social and environmental good too."

The Digital Futures inquiry was launched by Patricia Hewitt in February 2000. During the course of the year, three government departments, eight think-tanks and fourteen companies, have worked together to better understand the social and environmental opportunities of the new economy. The full research reports have been published as a book – *Digital Futures: living in a dot-com world* (Earthscan, March 2001) and are summarised in *Digital Futures: an agenda for a sustainable digital economy* (Forum for the Future, March 2001).

The book will be launched and full findings announced at a conference on 1 March where speakers will include Patricia Hewitt (e-Minister), Michael Meacher (Minister for the Environment), Brian Eno (musician and artist), Shanker Trivedi (UK Vice President, Sun Microsystems), Martha Lane Fox (lastminute.com) and Jonathan Porritt (Forum for the Future).

- ENDS -

For further information or a copy of the full summary report contact:
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Or access the website at digitalfutures.org.uk

Notes to editors:

Digital Futures involves a consortium of government departments, companies, NGOs and think-tanks:

- Government partners include the DTI, DETR and the Cabinet Office.
- Corporate partners include Amazon.co.uk, AOL UK, BT, BP, Ericsson, Kingfisher, The Post Office, NatWest, Nationwide Building Society, Royal & SunAlliance, Sun Microsystems, Unilever and WH Smith.
- Participating think-tanks include Demos, Forum for the Future, Green Alliance, Local Futures Group, New Economics Foundation, SPRU – Science and Technology Policy Research, Town and Country Planning Association, UK CEED and University of Bradford

GOVERNMENT SHOULD ACT NOW TO UNLOCK THE POTENTIAL OF THE DIGITAL ECONOMY OR RISK DAMAGING CONSEQUENCES.../4

Digital Futures is co-ordinated by the think-tank Forum for the Future. Founded in 1996 by three of the UK's leading environmentalists – Jonathon Porritt, Sara Parkin and Paul Ekins – Forum for the Future works in partnership with government, business and higher education to accelerate the building of a sustainable way of life.

The 10 'dot-commandments' for a sustainable digital economy

1. **Beyond the hype there's hope**
   E-commerce creates new opportunities for environmental and social sustainability.

2. **The e-economy can access all areas**
   The digital revolution could refresh the parts that other revolutions haven't reached, by spreading benefits to all regions of the UK and all sectors of society.

3. **Community is alive & clicking**
   Online relationships, supported by e-commerce, can add a valuable extra dimension to real world interaction.

4. **'e' is for environment**
   E-commerce could help cut energy and resource use, and improve environmental productivity.

5. **HTML – Heavy Traffic Made Lighter?**
   Virtual traffic can replace real traffic. With the right policy framework, e-business could create more efficient logistics and distribution systems.

6. **Trust me, I'm a dot-com**
   E-commerce is changing the relationship between companies and their stakeholders, and could usher in a new era of corporate transparency and accountability

7. **But right now, matter matters more (not less)**
   Potential environmental gains won't be realised without a concerted effort from government and business to align e-commerce with wider sustainability objectives.

8. **Smart technology needs smart institutions**
   Technology is developing at breakneck speed. Institutionally we're struggling to keep up. Sustainable e-business will depend not just on technological innovation, but also on social and political innovation.

9. **We need to join the dots**
   Partnership will be key to the creation of a sustainable digital economy. Dot-coms, dot-govs and dot-orgs need to work together more often and in new ways.

10. **It's about time**
    A year in cyberspace is said to be four months. As the internet accelerates the pace of life, we need to change our attitude to time and long-term responsibility.

Appendix 5 – Selected press coverage

A "E-commerce 'to benefit the environment'", *ENDS Daily*, 31 January 2000

B "Weighing up the pros and cons of e-commerce", *Ends Report* 301, February 2000

C "Amidst the dot-com fever, a cool gaze at the future", *Green Futures*, January – February 2000

D "Who wants to be a millionaire? I dot.com", *News from the New Economy*, February 2000

E "E-commerce: Enquiry into impact launched", *Financial Times*, 1 February 2000

F "DTI launches inquiry into social impact of e-commerce", *Silicon.com*, 2 February 2000

G "DTI backs inquiry into impact of e-commerce", *Environment Business News Briefing*, 10 February 2000

H "Dark side of the web", *The Guardian*, 24 February 2000

I "Caught in the web", *EB News Briefing*, 6 April 2000

J "So where's the ethics.com?", *Green Futures*, May / June 2000

K "Government must act to secure green benefits of 'new economy'", *ENDS Report* 308, September 2000

L "Will the economy of the future be green?" *The Guardian*, 16 September 2000

M "Trust me, I'm a dot-com?"*AccountAbility Quarterly* Issue 16: 2001

N "Dotcoms 'ignoring green issues'", *Daily Telegraph*, 11 January 2001

O "From ships to clicks", *New Statesman*, 22 January 2001

P "Too busy to be green"., *Financial Times*, 30 January 2001

Q "Greening the new economy", *Business 2.0*, February 2001

R "Learning a lesson in ethics", *New Media Age*, 1 February 2001

S "Green Machines", *The Industry Standard*, 8 February 2001

T "Be ethical and sustainable, says dot-com report", *Community Affairs Briefing*, February / March 2001

U "Net worth?" *Business 2.0*, March 2001

V "Green futures", *E.Business*, March 2001

W "E-businesses get help on social responsibility", *Ethical Performance*, March 2001

X "Every cloud has a silicon lining", *News from the New Economy*, March 2001

Y "Dot-coms dodge green issues as study points to uncertain impacts", *ENDS Report* 314, March 2001

Z "Second sight", *The Guardian*, 1 March 2001

A1 "Personal view", *Daily Telegraph*, 1 March 2001

B1 "Make it better or don't make it", *Times Higher Education Supplement*, 2 March 2001

C1 "Treasury windfalls could fund £1bn internet plan", *New Start*, 2 March 2001

D1 "Ebusinesses will be forced to prove they're eco-friendly", *Silicon.com*, 2 March 2001

E1 "Environmentalism: The next challenge for high-tech firms", *Silicon.com*, 2 March 2001

F1 "Get online and learn to be green", *New Statesman*, 5 March 2001

G1 "The dotcom Ten Commandments?" *The Industry Standard Europe*, 8 March 2001

H1 "Survey alerts businesses to environmental responsibility", *Computer Weekly*, 8 March 2001

I1 "Sustainable e-commerce: Digital Futures conference 2001", *Business 2.0*, April 2001

J1 "Marketing morals", *Business 2.0*, April 2001

K1 "Inquiry asks whether e-commerce is a force for good or evil", *Business and the Environment*, April 2001

L1 "Thousand-year chime", *The Guardian*, 16 April 2001

M1 "Shopping on the net could jam the roads", *The Times Higher Education Supplement*, 20 April 2001

N1 "How many 'e's in e-commerce?", *Inside Track*, Spring 2001

O1 "Digital Futures: Living in a dot-com world" (book review) *Community Affairs Briefing* April / May 2001

P1 "Enter the e-lab", *The Environmentalist*, May 2001

Q1 "Die Dot-com Ethik: E-Business und Nachhaltigkeit", *Umwelt Wirtschafts Forum*, September 2001

R1 "Better business?" *Resurgence* no. 208 September / October 2001

E-commerce "to benefit the environment"
ENDS Daily - 31/01/00

More internet shopping will cut energy use and greenhouse gas emissions, according to a Swedish study. Carried out for the Swedish environmental protection agency by the University of Lund, the investigation is one of the first in the world to project likely environmental impacts of e-commerce, and confirms similar predictions made by US researchers.
If Swedish internet grocery shopping expands as projected from its current vestigial level to 10% of the market, overall energy consumed in grocery shopping should be cut by 5-7%, the report says. Meanwhile, emissions of carbon dioxide and nitrogen dioxide would fall by 4% and 9% respectively. The main cause of these trends would be more rational transport patterns, the researchers say.

E-commerce's capacity to deliver environmental benefits depends on population density and market penetration, the study concludes. If internet grocery shopping took a 50% market share then environmental benefits would be higher and extend to areas with lower population densities.
Conversely, at low market penetration the net impact could even be negative in very sparsely populated regions.
Nevertheless, the study's main conclusions seem to confirm US research, including a study published in December by think tank the Center for Energy and Climate Solutions.
This suggested that growing consumer and business-to-business e-commerce would lower demand for commercial building space by 5%, saving 53bn kWh of electricity through lower operations and maintenance needs.

Coupled with reductions in transport and the probable "dematerialisation" of some industries - such as compact disc manufacture - this could lead to a significant downward revision in energy and carbon dioxide emission forecasts, the study predicted.

Back in Europe, the UK government will tomorrow announce funding for a one-year inquiry into environmental and social implications of growing e-commerce, focusing on what it will mean for energy use, transport, planning and social inclusion. Coordinated by environmental NGO Forum for the Future, the project will aim to set out an "agenda for a sustainable digital economy".

Follow-up: Swedish EPA (http://www.environ.se), tel: +46 8 698 1000; Center for Energy and Climate Solutions (http://www.cool-companies.org), tel: +1 703 750 6401, see also the group's E-commerce study (http://www.cool-companies.org/ecom/pr.cfm); Forum for the Future (http://www.forumforthefuture.org.uk), tel: +44 1242 262010.

Weighing up the environmental pros and cons of e-commerce

A year-long investigation into the environmental and social impacts of the explosion of e-commerce was launched in February by DTI Minister Patricia Hewitt. The initiative comes amid growing excitement in the road haulage and retail sectors over the business opportunities presented by internet shopping – and claims in the US that the internet has already led to a decoupling of economic growth and energy consumption.

"E-commerce has the potential to reduce the resource intensity of many products and services, but it is important that we assess the benefits and problems in a systematic and balanced way," Ms Hewitt said in a statement released at the Fabian/SERA conference on "environmental modernisation" (see main article).

The project sponsors include businesses which are heavily engaged in information technology and e-commerce and others which as yet are not. They are BT, Sun Microsystems, BP Amoco, Kingfisher, NatWest, Nationwide, the Post Office and Unilever.

Forum for the Future is the project co-ordinator. It has backing from the DTI, the Department of the Environment, Transport and the Regions and the Cabinet Office.

Participants in the project include Demos, Green Alliance, the New Economics Foundation and the Town and Country Planning Association. The final report, due in early 2001, will set an "agenda for a sustainable digital economy". It will predict the effects of e-commerce on:

- **Energy use:** its impact on greenhouse gas emissions and an analysis of which products might be "dematerialised" altogether.
- **Transport:** the effects of internet shopping on transport and distribution.
- **Planning:** will a shift away from bricks and mortar for retail and other businesses accelerate the decline of the high street?
- **Social inclusion:** e-commerce and the internet are not open to all sectors of society.

Forum for the Future said: "The jury is still out on whether the digital economy will evolve into a powerful ally of sustainable development or a spur to greater social exclusion and environmental destruction."

Some of the transport impacts of e-commerce have been highlighted in a new study for the logistics firm Lex Transfleet and the Freight Transport Association.[1] A survey of motorists found that 32% of people already buy goods using the telephone or the internet, and 50% of current internet users expect to buy more in the future.

However, 38% of motorists said they would oppose shopping from it if led to a rise in the number of vans and trucks delivering goods.

The Lex study says that there is a lack of consensus among freight operators as to the impacts of e-commerce. At the Institute of Grocery Distribution, Bruce Wakelin said: "Maybe you will not have so many shoppers in cars driving to the supermarkets but you will have many more vans picking up goods from the warehouse and delivering to customers' homes."

Marks & Spencer predicted that there would be a shift from fleets of 13-metre trailers to many more smaller vans and trucks. Truck and van journeys in residential areas would increase.

The Lex report notes that the internet will help fleet operators to share information, enabling them to achieve greater efficiency. "Co-operation between retailers to optimise delivery systems will be vital both for the environment and the customer."

"If the logistics issues are not satisfactorily addressed by industry and government," the study warns, "then the survey evidence shows that there could well be a public backlash against home shopping."

Truck makers appear to be anticipating a boom in their business as a result of internet shopping. Iveco Ford recently predicted massive growth in the market for urban delivery vehicles – from £0.5 billion to £6 billion by 2003.

Along with other truck makers, Iveco Ford believes that the internet is creating a new market for smaller vehicles which are easier to load. Ford is currently developing new models aimed at this market which will cut loading times by 40%. They will have features such as low floors and loading ramps.

One unknown in the internet shopping revolution is its demand for out-of-town warehouse style buildings. Some retailers argue that home shopping will reduce pressure to build out-of-town stores. However, set against this will be pressure to build new distribution warehouses.

Tesco, the first major UK grocer to offer internet shopping, says it already has 250,000 customers. It offers the service from more than 100 stores, and plans to increase this to 300.

By contrast, Sainsbury's is not offering the service from existing stores. Instead, it is investing £30 million in warehouses to serve internet shoppers. The company plans to build Europe's largest on-line grocery centre at Park Royal in west London to serve the whole of the M25 area. Some analysts believe that this strategy makes more sense in the long run, because it is rather cumbersome to pick up groceries for internet shoppers at an existing retail store.

However, the transport impacts of hauling groceries to customers across London, for example, could be substantial – and other experts have predicted that distribution problems could stifle internet business. One problem is that, to suit customers in full-time work, deliveries will tend to be concentrated in the early morning and early evening – during hours when traffic is busiest.

Work published in February by the Swedish Environmental Protection Agency has illustrated how internet shopping has the potential to reduce greenhouse gas emissions. The study finds that Swedish households currently consume 3.1 TWh of energy in transporting groceries by car.

If half of all shopping was by internet, the study projects energy savings of 25-35%. But if internet shopping accounted for only 10% of consumer good purchasing, energy consumption would fall by 5-7%.

However, the study makes assumptions that delivery vehicles travel only 50-90 kilometres and handle 25 orders per journey. And it does not appear to consider the possibility that consumers might make additional leisure or shopping journeys if freed from the need to go to supermarkets.

Speaking at the Fabian/SERA conference, BT's Environment and Social Manager, Chris Tuppen, said there was evidence that e-commerce could save warehouse space, consumer and commuter journeys and office space. He also claimed that the paperless office could become a reality – and that his office already was paperless.

Nevertheless, Mr Tuppen acknowledged that efficiency savings can promote consumption, stimulate travel, and generate products with short lives and junk mail. "If the economy becomes much more efficient then there is the potential to consume more because things are cheaper."

A recent report in the US claimed that the internet is already triggering substantial reductions in the energy intensity of the US economy.[2] Its author was Joseph Romm of the Centre for Energy and Climate Solutions (CECS), which offers energy efficiency advice to business.

Despite remarkable economic growth in the US – about 4% per year in 1997 and 1998 – energy consumption has hardly increased at all, the report says. "The overall productivity of the economy appears to have increased substantially, driven by the IT sector."

Energy intensity – measured as energy consumed per dollar of gross domestic product – improved by less than 1% between 1986 and 1996. Then in 1997 and 1998, it improved by 3% each year, "an unprecedented change during a time of low energy prices."

Preliminary analyses have suggested that roughly one-third of the improvement has been structural – due to growth in sectors such as IT which are not particularly energy intensive. The remaining two-thirds appears to have come from gains in energy efficiency in other sectors.

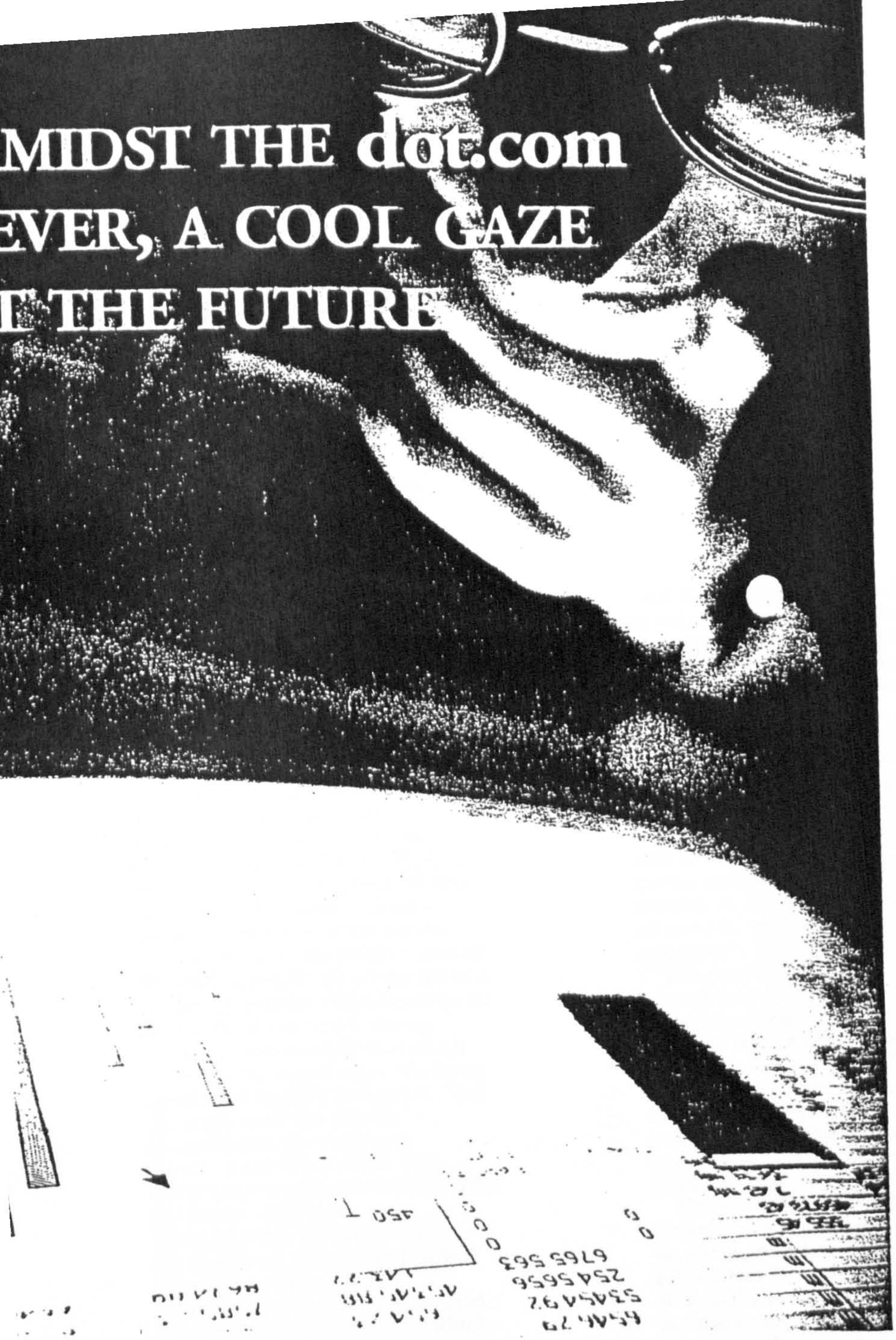
CECS goes on to construct some "rough scenarios" projecting annual improvements in US energy intensity of at least 1.5% up to 2007 – making it far easier to meet the US target under the Kyoto Protocol to cut greenhouse emissions by 7% by 2010/12 on a 1990 baseline.

CECS reckons that reductions in paper consumption triggered by e-commerce could alone shave 0.25% off US industrial energy consumption by 2003, and twice as much by 2008.

One thing the study plays down, however, is the potentially negative environmental impacts of e-commerce – such as more delivery vehicles and the consumption of electricity in IT devices. Summoned before a Congressional panel in February, Joseph Romm faced hostile questioning from politicians who remain opposed to US ratification of the Kyoto Protocol – and one Representative even suggested that placing a cap on CO_2 emissions might make it impossible to supply sufficient electricity to meet the internet's needs.

[1] From Lex Transfleet, Lex House, Torwood Close, Westwood Business Park, Coventry CV4 8HX.

[2] The internet and global warming, Centre for Energy and Climate Solutions, www.cool-companies.org



LAURENCE DUTTON/TONY STONE IMAGES

RESEARCH PARTNERS

- Demos
  E-commerce and social capital
- Green Alliance
  Greening the knowledge economy
- Forum for the Future
  Sustainable e-business
- Local Futures Group
  Economic and social geography of the digital revolution
- New Economics Foundation
  Access, participation and social inclusion
- Science Policy Research Unit
  Scenarios for e-commerce and sustainability
- Town and Country Planning Association
  Planning in the digital economy
- UK CEED/ Bradford University
  Transport and distribution

9 WILL BE REMEMBERED as the year
n dot.com fever swept through
business world. Barely a day went by
out a new start-up being launched,
n established company expanding
cyberspace. Government also caught
oug, with a succession of ministerial
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ut although much attention has
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cial impacts. What will it mean for
communities and levels of social
on? How will it affect transport,
use and the future shape of our
and cities?

ese questions lie at the heart of an exciting new project being launched this month by Forum for the Future. The project – which is called Digital Futures – will involve a consortium of companies, government departments and research organisations, working together to explore the sustainability implications of the predicted explosion in e-commerce.

James Wilsdon, the Forum's senior policy adviser, explains that "our goal is to come up with some useful recommendations to ensure that the new digital marketplace becomes a powerful ally of sustainability, rather than a spur to yet more social exclusion and environmental destruction".

The project's corporate partners include BT, Kingfisher, Nationwide Building Society, NatWest Corporate Banking Services, The Post Office, South West Regional Development Agency and Sun Microsystems. The DTI and DETR are also actively involved, both in funding the project and in the research process.

As the research progresses, the Forum plans to engage with a wider circle of businesses, RDAs, local authorities, NGOs, consumer groups, trade unions and other stakeholders, in order to promote the need for an integrated approach to e-commerce and sustainability.

Hilary Thompson, head of communications at NatWest CBS, welcomed the project as "a great opportunity to carry our commitment to sustainability through to our internet operations. E-commerce is evolving incredibly quickly, and it's vital that the sustainable business agenda keeps pace." Digital Futures will run throughout 2000, with a final report due in early 2001. This will set out an 'agenda for a sustainable digital economy', with key recommendations for government, business, regional development agencies and local authorities.

Forum for the Future, James Wilsdon, j.wilsdon@forumforthefuture.org.uk;

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Who wants to be a millionaire? I dot.com

TWO years ago, they were called nerds. But the not-so chinless wonders who set up dot.coms (internet companies) like qxl (pronounced quick sell) and lastminute.com, are now worth hundreds of millions.

Infuriating. Forget NEF's vision of the new economy, I muttered to my half-frozen infant daughter as I planted a forlorn tree on rain-lashed, mud-splattered, socially-excluded Dartmoor on New Year's Day. I resolved to get me a slice of the other new economy. I was a wannabe dot.com millionaire, waiting for a multi-million pound IPO (initial public offering) after a couple of months fiddling around with a PC in my spare room.

Yes, e-commerce@its.best.uk must be the way to go. It's lean, green and socially inclusive. The UK could lead the world, according to the shadowy government think-tank, the Performance and Innovation Unit (surf their report at www.cabinet-office.gov.uk/innovations). Okay, the market may not be that big yet: predicted to be just 3.5 per cent of all business by the year 2002. Bull semen internet auctions are not a big e-earner yet, cheeky journalist Evan Davies reported on *Newsnight* recently.

Even 'traditional' e-businesses selling books and CDs at discount are struggling to survive. Well, okay, not so lean, but surely green? Downloading music at home has got to be more sustainable than all those trips to the record shop and plastic CD cases. Pundit Charlie Leadbeater gives a dizzying example of how a 'new economy' shirt is put together by a Hong Kong clearing house in his best-seller *Living on Thin Air*. Buttons from one country, thread from another, dyeing in a third, stitching in a fourth, sold in a fifth. Where there's muck, the brass is in outsourcing.

All the evidence shows that we are actually freighting ever-increasing amounts of stuff. Mark Allen, from Totem Systems, says: "If you want to make money from the internet, invest in small delivery vans".

Still, you can't argue with cheap flights and electronic goodies in these hard times. Buyer's clubs challenge cartels and drive down prices, says the Consumers' Association. The trouble is, it's not going to be at all easy to wire up so-called "late adopters".

The poorest third of the population really need the bargains e-commerce makes possible but can't afford and don't know how to get access to the web. It'll take alternative currencies, recycled computers and micro-enterprise on a grand scale, with the full backing of government.

The promise of e-commerce looks a bit patchy. So I decided to postpone becoming a dot.com millionaire for a while, so that NEF could team up with Forum for the Future, Demos and other bright sparks on a major government and business funded research project called Digital Futures.

Over the next year, we will examine the hype and explode some myths. We will also work out how to make e-commerce green, lean and inclusive, as it must be if it is to be part of the real new economy.

Alex MacGillivray

alex.macgillivray@neweconomics.org

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Financial Times
1 February 2000

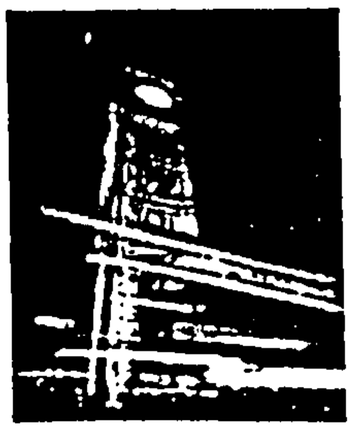
E-COMMERCE

Inquiry into impact launched

E-commerce minister Patricia Hewitt today launches a year-long inquiry into the environmental and social impact of doing business on the internet. Led by a consortium of three government departments, 10 companies and eight think-tanks, "Digital Futures" will examine the impact of e-commerce on energy use, transport, planning and social exclusion and suggest ways in which e-commerce can help sustainable development. Ms Hewitt will argue that the internet has ushered in a new age of environmental transparency for businesses as consumers and green groups trade information about companies' environmental credentials on-line. **Dan Bilefsky**

Wednesday 2nd February 2000 0:30am

DTI launches inquiry into social impact of ecommerce



Patricia Hewitt, ecommerce minister at the Department of Trade and Industry (DTI), has launched a year-long inquiry into the environmental and social impact of ecommerce.

Speaking at the Institute of Directors to the Fabian Society/SERA conference on environmental modernisation, Hewitt said: "Ecommerce has the potential to reduce the resource intensity of many products and services, but it is important that we assess the benefits and problems in a systematic and balanced way."

Hewitt expressed concern that although ecommerce has potentially beneficial influences on business, it is time for government to assess its impact on other areas of society.

The inquiry will look at the impact ecommerce is likely to have on energy use, the environment, planning, transport and social exclusion. It will make predictions on what effect ecommerce will have on these areas over the next ten years.

Called "Digital Futures", the inquiry is backed by three government agencies, eight think tanks and ten companies including BP Amoco, BT , Nationwide Building Society and Sun Microsystems. The project is being overseen by Forum for the Future.

The investigation will include a conference organised by the DTI to canvass the views of British business.

John Oates / Feedback

Silicon.com
1 February 2000

DTI backs inquiry into impact of e-commerce

The DTI last week launched a year long inquiry into the environmental and social impacts of e-commerce and tele-working.

Speaking at a conference at the Institute of Directors in London, Patricia Hewitt, DTI minister for small business and e-commerce, said the relationship between e-commerce and the environment was unclear.

She said that while tele-working would produce less traffic and reduce congestion in the short term, in the longer term it would increase travel as networks expanded.

The e-commerce inquiry, to be called **Digital Futures**, will involve three government departments and eight think tanks. The project will be underwritten by partnership with businesses including **BT, BP Amoco** and **Kingfisher.**

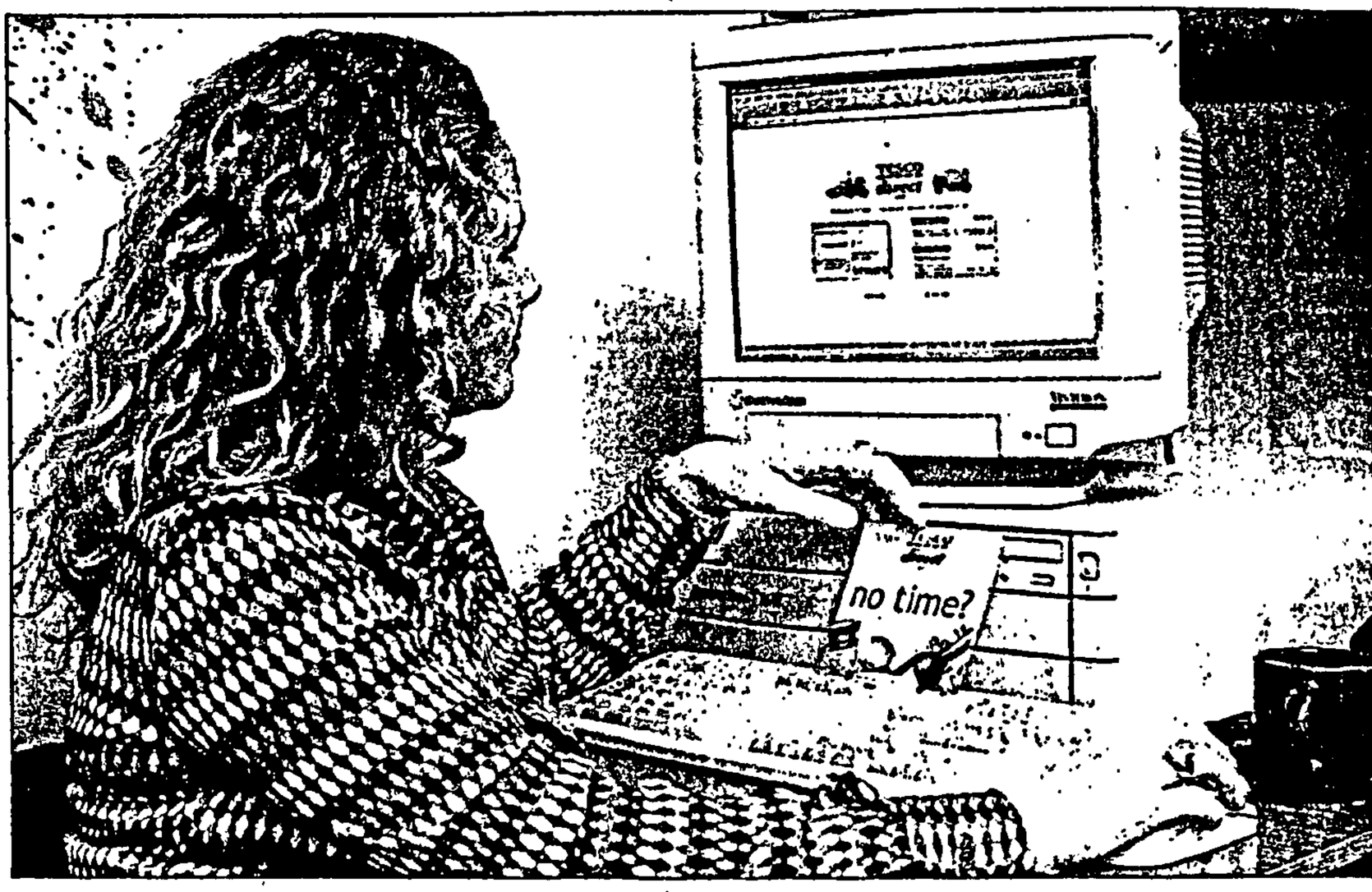
Mrs Hewitt revealed to *EBNC* that the project is to be backed by £¼m over the year. ▶▶

☎ **DTI (0171) 215 5000**

E-commerce

Net shopping could lead to even greater social exclusion, writes **Roger Cowe**

Dark side of the web



Browsing at Tesco — but what happens if you forget a vital ingredient?

The internet comes with a lot of promises. Some of those are environmental: that it will save energy and cut down on waste. Some are social: that it will provide access to information for everyone and access to the biggest markets for the smallest players.

But what if the net lets us down? What if e-shopping adds to total consumption, results in more vehicle journeys, not fewer, and worsens the plight of town centres?

Answers to these questions and more will emerge next year from a research project run by Forum for the Future, the think-tank founded by the environmentalist Jonathon Porritt. The investigation was launched recently by Patricia Hewitt, the e-commerce minister, and is backed by several large companies who hope to gain from the new marketplace, including Sun Microsystems, the Post Office and the consumer products giant, Unilever.

"The internet is rapidly becoming the most important medium for both interactions and transactions between people and organisations," says Shanker Trivedi, vice president for Sun Microsystems in the UK and Ireland. "We must ensure we are aware of the impact of this new dot.com paradigm on individuals and the environment."

His concern is that the internet revolution could backfire. Instead of democracy and sustainability, we could end up with social exclusion and new environmental problems. There are clear — potential — social and environmental benefits, but there could also be a black side to the web revolution. The research project will weigh the balance between the positive and negative aspects. First, the dehumanising potential of many "digital jobs", set against the potential gains for local economies and smaller firms.

There also is the worry that e-shoppers are likely to be the most wealthy, while the poor most desperately need to find bargains. If the e-lite replaces traditional buying with remote shopping, physical shops will be in trouble. They will have less custom to finance their expensive premises. That sounds great if it means an end to hypermarkets on the edge of town which threaten traditional shops. But what if it means closures of high street outlets instead?

Next, consider the physical end of the internet transaction. A small number of products can be delivered down the wire — music and software, and potentially anything currently on the written page (such as this newspaper). This is positive for the environment, resulting in lower consumption of materials from newsprint to packaging, and less physical distribution.

But most shopping cannot be completed this way. It is useful for small items such as books which can be sent through the post, but bulkier goods such as clothes and food require special deliveries. It is easy to imagine a scenario where this results in greater environmental damage, not less — quite apart from the physical dangers from wild van drivers careering up and down our streets.

Shopping remotely, whether through traditional mail order or new media, is more likely to result in dissatisfaction. The colour isn't quite right, the size is wrong. That means more two-way trips. Then there are the items you forget when skipping down Tesco's screen catalogue, which you would spot on the shelves as you struggle past with the trolley. That is another car journey, perhaps.

Even worse, it is possible that families freed from the chore of Saturday morning supermarketing will hop in the car and whiz miles down the motorway to some leisure paradise for the day. Finally, the internationalisation of retailing could produce a boom for air freight, as more and more goods are shipped round the world to satisfy shoppers hungry for a bargain and blind to the environmental effects. The range of such issues thrown up by ecommerce is substantial.

James Wilsdon, senior policy adviser at Forum for the Future, says: "The jury is still out on whether the digital economy will evolve into a powerful ally of sustainable development, or a spur to greater social exclusion and environmental destruction.

"There is an urgent need for dialogue between policy-makers and the companies who will be driving the dot.com revolution."

That dialogue will be achieved by the involvement of eight leading companies. The research will be carried out by a number of think-tanks. Forum for the Future will concentrate on opportunities for eco-efficiency, dematerialisation and the potential shift from products to service-based businesses, while seven other organisations will work on issues such as transport, energy use and carbon dioxide emissions, as well as wider policy issues.

The New Economics Foundation (NEF) will look at ways of improving access to the web and the dangers of worsening social exclusion if that cannot be achieved.

Alex MacGillivray of NEF said the net had the potential to be positive but without wider access it would remain primarily a middle class phenomenon. "The purchasing power of buying clubs is fine, but at the moment that is for middle class people. The people who really ought to get the benefits of lower prices are the people who at the moment are the least likely to get online."

NEF is exploring the potential to open up the net to poorer communities by providing reconditioned computers. Even then there is the question of whether old machines can capitalise on the net's potential. "You don't want people being on ine but not being able to use the best services", according to MacGillivray.

These complexities will be clearer when the researchers finish their task next year, but much will depend on how e-shopping affects consumers' behaviour. It will take several years for that to emerge.

Government must act to secure green benefits of "new economy"

Substantial environmental benefits may result from the development of the "new economy", dominated by the service sector and information technology – but they will be realised only with Government policies to steer development in a sustainable direction, according to a new Green Alliance pamphlet.[1]

Environmentalists anxious to gain the ear of Prime Minister Tony Blair have been developing an "environmental modernisation" agenda which emphasises business-friendly environmental policies (ENDS Report 301, pp 20-23). An important theme is the potential for resource efficiency measures to stimulate economic innovation and efficiency.

One initiative seeking to draw the Government into this debate is the "Digital Futures" programme, launched in February. The one-year project, involving eight think tanks including the Green Alliance, is assessing the social and environmental impacts of e-commerce and the new economy.

The new pamphlet, by Blairite thinker and journalist Charles Leadbeater, is the first fruit of their work. It plays up the potential environmental benefits of the new economy. Driven by innovation, the new economy will bring increased efficiency and the replacement of materials and goods with services and "experiences", he contends.

Mr Leadbeater notes that "virtualisation" – the replacement of material goods with services – can have environmental benefits. Examples include sending emails instead of letters, or buying music in the form an MP3 computer file rather than a CD. Such services avoid manufacturing, storage and delivery costs.

However, the environmental benefits of the new economy are far from clear. Mr Leadbeater admits that a service-based economy may still be underpinned by manufacturing – possibly abroad. And while e-commerce has the potential to reduce car journeys, it will not necessarily reduce consumption and could lead to an explosion of van deliveries.

"As technology has got cheaper we use it more, and so consume more energy and raw materials, and dispose more quickly of products which have shorter lifespans," observes Mr Leadbeater.

Nor are the new technologies environmentally benign. The boom in home and office computers has brought increases in energy use. And plans for "internet hotels" housing hardware needed to cope with growth in e-traffic could boost electricity demand in London by as much as 20%, according to some reports.

Mr Leadbeater says the Government must act now to ensure that the environmental potential of the new economy is realised. Technological innovation is not being matched by change in social and political institutions, he complains.

"Making these products and services more environmentally friendly, in the long run, requires not just technical but social change," he insists. "We need to focus all the tools of policy – taxes, regulations, inward investment, competition policy research and development – to drive environmental innovation."

Part of this will involve shifting the burden of taxation away from people and services and onto energy use and materials consumption, he suggests. But policies to promote the new economy must also be accompanied by demanding environmental standards. Far from being a burden to industry, Mr Leadbeater sees tight environmental standards as a spur to innovation. He wants the Government to set demanding goals, leaving it up to companies how to meet them.

"Environmental regulation could have a new role within a wider process of innovation," he asserts. "Open markets and tough environmental standards, when combined intelligently, may be the best way to spur innovation."

He sets out an action plan for a greener new economy. He thinks that policies should be formulated to support "virtual" products and wants to see the emergence of "a new breed of environmental entrepreneur" who sees the environment as an integral part of product and process design.

"The new economy will develop along more environmentally sustainable lines only if technical, social, organisational and political innovations work in combination," he says. **ENDS**

[1] *Mind over matter: greening the new economy, £10.00, from Green Alliance, 020 7233 7433.*

NEWS IN BRIEF

ACBE launches directors' guide on sustainable development

The Government's Advisory Committee on Business and the Environment (ACBE) has developed a draft questionnaire to help companies assess how well they are taking on board the principles of sustainable development in the way they operate.[1]

The questionnaires ask directors about their strategic approach to sustainable development and what the concept means for their business, as well as posing practical questions about the use of indicators and performance evaluation.

The paper addresses all areas of business from research and development to marketing and investor relations. Depending on directors' responses, the paper offers advice on future action and gives them an idea of how engaged their company is with sustainability issues.

Businesses are invited to comment on the document, and a finalised paper is expected by the end of the year.

[1] *Internalising sustainable development, from ACBE, DETR, Zone 6D9 Ashdown House, Victoria Street, London, 020 7944 6278.*

Increases in environmental spending in Scotland

Additional funding of almost £190 million for environmental programmes over the next three years was announced by the Scottish Executive on 22 September.

The new money follows this summer's comprehensive spending review. Major beneficiaries include:

- £50 million will be provided to local authorities to take forward implementation of Scotland's waste strategy. Details will be announced later.
- Local authorities will receive a further £50 million to pay for improvements in air quality, waste, contaminated land, countryside access and flood and coast protection.
- The Scottish Environment Protection Agency will receive an extra £16.5 million over the three years, increasing its grant-in-aid by almost one-third. SEPA says the money will help it implement the EC landfill and water framework Directives and improve its IT systems.
- Public expenditure support for Scotland's three water authorities, which are facing major programmes of investment in sewerage, sewage treatment and drinking water, is to be increased by £32.3 million – though £15.7 million will come in the final year, 2003/4.
- Scottish Natural Heritage will have an extra £22.7 million in grant-in-aid.
- Scotland's new National Parks will receive £10.6 million to pay for visitor facilities and ranger services.

L

Will the economy of the future be green?

GUARDIAN 16/9/00

Yes

Charles Leadbeater
Writer and consultant

Dear Roger,
There is no better time to explore the environmental potential of the new economy than during a mini-crisis in the old industrial economy. The emergence of the new, knowledge-driven economy, symbolised by the rise of the internet, will make it possible in the next century to combine economic growth, consumer choice and improved well-being, with significantly reduced environmental harms.

The driving force of the new economy is not the internet but innovation: our ability to turn new ideas into businesses, jobs and products. Innovation is the key to economic dynamism and it will also provide the solution to many of our most troubling environmental problems.

Take transport for example. The car of 2010 will be controlled by software and drive-by-wire systems in the vehicle and embedded in intelligent roads. As a result the 2010 car will be lighter and so vastly more fuel-efficient. It will run on gas or electricity. Smart cards will make road pricing an accepted feature of city life. The divide between public and private transport will be breaking down as car leasing and car sharing schemes become commonplace.

We will create efficient, flexible, environmentally sustainable transport systems only by combining technological and commercial innovation, with social and political innovation in the way we pay for transport: innovation that sweeps across the whole transport system. That innovation-driven solution to environmental problems is what the new economy makes possible.

Yours sincerely
Charles Leadbeater,
Author, Mind Over Matter: Greening the new economy

Dear Charles
Odd that an argument that so exalts innovation should, at heart, be so conservative. Your car of 2010 has a great future behind it: it's much as I remember the car of 1980 being described in 1970. It's slow coming because manufacturers don't want to make their capital obsolete. Innovation is only implemented when commercially opportune. It won't consistently further social or environmental aims until we systematically manage markets to make profitable the technologies we want.

Granted there have been big environmental improvements in car technology. But they have been swamped by people driving heavier, more powerful vehicles further and more often – because, among other things, motoring costs have gone down compared to incomes or public transport, amenities have dispersed and many top minds are dedicated to promoting car fetishism in one of those service industries you admire – advertising.

The truly forward-looking approach is to twig that we don't really want cars, or even journeys, but access to amenities and services, and then aim to get this with less motorised movement. Sure, new technologies like internet shopping and teleconferencing could help. But so can old ones like bicycles, buses, lines painted on roads and integrated town centres. And un-technologies like walking. Innovation really isn't the point. We had better and fairer access and used less transport fuel in 1970: the vehicles were technologically crummy but we used them more efficiently.

All the best,
Roger Levett,
Director, CAG Consultants, sustainable development cooperative

Dear Roger,
Your rush to embrace the past is alarming. I sometimes wonder whether environmentalists ever want to hear good news.

Environmentalists should embrace iinnovation. Every day the new economy is creating opportunities for environmental improvement. Napster and MP3, within a decade will shift the entire world music industry from physical compact discs, manufactured with raw materials to environmentally friendly digital formats. The world's film industry spends $5bn a year copying films for distribution using a technology invented in the 19th century. Within a decade that spending will be reduced by 90% with the advent of digital cinemas.

Cambridge Display Technologies is developing computer screens based on organic, water-soluble polymers that are both more efficient and more environmentally friendly than traditional screens. The Dyson vacuum cleaner is a classic case of win-win innovation: not only is there no bag but the entire machine has been designed to be recycled.

These cases of environmental gain have been created by new economy entrepreneurs like Shaun Fanning, the founder of Napster. That is something no government or pressure group could have achieved. This poses a challenge for environmentalists whose stock- in-trade has been to complain about the excesses of the old industrial economy. Do you want to be part of this process of creating a new, more environmentally sustainable, modern economy or do you stand on the sidelines?

Yours sincerely,
Charles

No

Roger Levett
Expert in sustainable development

Wheelspin . . . new fashion, old technology PHOTOGRAPH: DAVID SILLITOE

Dear Charles,
As you acknowledge in your pamphlet, MP3 might cause more environmental damage – in energy and computers left on – than is saved. At best Dyson is recovering some of the environmental ground lost in the last wave of technological innovation, which replaced maintainable components with composite subassemblies which can't be repaired or recycled.

Moreover very little "recycleable" plastic is actually recycled, because the value of the things you can make with it doesn't pay for the collection and processing, whereas most ferrous scrap has always been recycled. So, the most you can say environmentally for these flagships of the new economy is that they may turn out to do a bit less damage than the things they replace – but it may be a bit more.

I assure you most environmentalists are avid for good news. But we're aiming a bit higher than this. And we're bored watching naked emperors prancing by.

Actually there is good news around. Some is hi-tech: you'd love a trip round a state of the art de-inking newsprint recycling mill with integral combined heat and power, computerised heat-flow management and closed-loop biological water treatment. But some is as low-tech as unemployed people draughtsealing pensioners' windows, or building cycle routes. None of this happens without regulation and/or substantial public subsidy. You probably wouldn't class any of them as "new economy", but they do much more for meeting human needs without eroding the environment than designer vacuum cleaners or downloading recorded music without paying.

Regards,
Roger

Dear Roger,
As I argue in Mind Over Matter, environmentally friendly personal services should be as much part of the new service economy as the internet. My concern is that environmentalists seem so willing to turn their backs on the opportunity the new economy opens up to create a different kind of economy. As an adviser to a venture capital fund, I work a lot with young entrepreneurs in internet start-ups and new technology companies. Many of them share the values and outlook of the environment movement.

As teams of new economy entrepreneurs present their plans to venture capitalists, they paint different possible versions of what the future might hold: how we might communicate, work, learn, save, shop, entertain ourselves. The venture capitalists decide which account of the future they want to back with their money.

Environmentalists should be engaged in the same kind of activity: painting different visions of the future. But that would require environmentalists to engage entrepreneurially in creating a new kind of economy and I am not sure that is something you are ready to do.

Yours
Charles

Dear Charles
I wonder where your impressions of "environmentalists" come from. "Painting different visions of the future" is precisely what thousands have been doing in Local Agenda 21 processes since 1993. Most are more creative and more significant than just getting music through modems instead of disks.

People don't come any more visionary or entrepreneurial than David Green, who started the community insulation network; Alan Sinclair who has built the Wise Group into a major provider of environmental services, employment and training; or John Grimshaw, who imagined the National Cycle Network, then made it happen. I could list dozens more of the most resourceful, creative, inspiring people you could hope to meet.

These aren't household names, and you won't have seen them in the venture capital world, for one simple reason. What they create produces public goods not private wealth. I don't know any new economy entrepreneurs so I won't make wild generalisations about them.

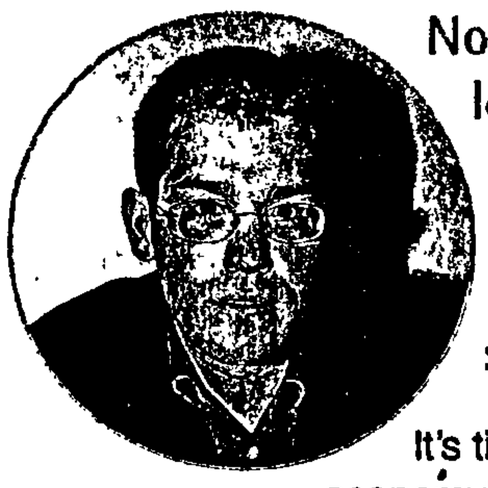
If they are visionaries, great. If any of their ventures turn out to be environmental breakthroughs, better still. But this will only happen by sheer accident. There is no correlation between innovation and greenness: many of the greenest technologies are old. Profitability and environment, alas, often conflict because environmental resources and damage are still so cheap. 1960s-throwback novelty worship is a distraction from the real sustainable development challenge: how to live better, but within our environmental means.

Regards,
Roger

Join the debate and have your say at www.guardianunlimited.co.uk/debate

Trust me, I'm a dot-com?

James Wilsdon, Senior Policy Adviser, Forum for the Future, London, UK • j.wilsdon@forumforthefuture.org.uk



Now that the dot-com bubble has burst, e-businesses can no longer behave as if they are exempt from stakeholder pressures. Drawing on the findings of the Digital Futures project, this article argues that new economy companies should leapfrog the old, by setting new standards for social and ethical accountability.

It's time for e-business to tune in to the accountability agenda. Say the words 'new economy' to most people, and the image conjured up is of complex gadgets and e-entrepreneurs. Yet dot-coms face many of the same dilemmas over ethics, supply chains, energy use, transport and waste as their bricks and mortar counterparts. The focus on technology at the expense of humanity has created an impoverished notion of what the new economy could become. It may be enough to arouse the technophile party faithful, but it is hardly a mobilising vision for the future of society.

Forum for the Future's Digital Futures project has tried to stand aside from the herd tendency of internet oversell to take a hard look at the impacts of the digital economy. A consortium of three UK government departments, eight think tanks and fourteen companies have spent the past year exploring particular pieces of the internet and sustainability jigsaw – from local communities and social exclusion, through to energy use, planning, and transport. In March this year, we published a book, which outlines ten "dot-commandments" for sustainable e-business.[1]

Our central conclusion is that the worst thing we can do is to worship unthinkingly at the altar of the digital god, or be swept along by the sheer pace and scale of technological change. There's a lot to do if we are to make the new economy cleaner, greener and more socially inclusive than the old.

As Tim Jackson, the founder of QXL.com, put it in December, 'Now that we realise e-commerce isn't a passport to untold riches, it's about time we gave some thought to something other than money'. He's right. If internet businesses are to be with us in 10-15 years, they are going to have to prove their worth. There's no better way for them to do this than to embrace the social and environmental agenda. If companies can demonstrate they contribute to true improvements in our quality of life, they stand a much higher chance of surviving the dot-com shakeout.

Indeed, some commentators are optimistic that the new economy will create a renewed impetus for corporate accountability, as consumers and NGOs find it easier to communicate directly with business about their social and environmental concerns.

There's no doubt that the internet could be a powerful tool for accountability. For example, it can provide stakeholders with access to environmental and social information at the click of a mouse. It allows two-way dialogue between businesses and their stakeholders. It

makes it harder for companies to hide mistakes, and easier for activists to spread their message.

'The Cluetrain Manifesto', a provocative book published last year, argues that the internet enables conversations between stakeholders "that were simply not possible in the era of mass media." As the customer and the company get to know each other online, traditional boundaries are dissolved - "hyperlinks subvert hierarchy" - and the company can become more responsive to stakeholder needs.[2]

So much for the theory. What practical steps can e-business take in pursuit of greater accountability?

Firstly, e-business could become a trailblazing sector for environmental and social reporting, by pioneering new on-line techniques. Using the latest digital technologies, progressive dot-coms could leapfrog the old economy world of dull, two-dimensional reports, and set new standards for real-time, multimedia reporting and stakeholder dialogue. It would also be useful if reporting frameworks like the Global Reporting Initiative (www.globalreporting.org) could provide guidelines on how the impacts and opportunities of e-business should be measured.

> ***"Some commentators are optimistic that the new economy will create a renewed impetus for corporate accountability, as consumers and NGOs find it easier to communicate directly with business about their social and environmental concerns."***

Secondly, on-line assurance schemes for safe and reliable e-commerce, such as Clicksure and TrustUK, should be extended to cover environmental and social issues. This would provide consumers with confidence that the products and services they purchase on-line meet basic ethical standards. Eventually, it should become possible to click through from an e-tailer's website to review the environmental or social standards that the company holds. Another click should take you to the website of the auditing agency, and even allow you to exchange e-mails with the individual auditor.

It remains to be seen whether e-business will live up to its potential. A lot will depend on learning from others. Web success depends on forging alliances – with suppliers, technology firms and content providers. As e-business begins to tackle social and environmental issues, these networks must expand to include meaningful partnerships with government and NGOs. We need, literally, to join the dots. Dot-coms, dot-orgs and dot-govs need to share ideas and work together to embed sustainability in every area of the new economy.

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1. *'Digital Futures: living in a dot-com world'* is published by Earthscan. The summary report is available to download at www.digitalfutures.org.uk

2. Rick Levine et al. *The Cluetrain Manifesto: the end of business as usual*, Ft.com, 2000.

dotcomtelegraph

The Daily Telegraph

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THURSDAY, JANUARY 11, 2001

Dotcoms 'ignoring green issues'

By David Cohen

First they were infamous for spending cash and making no profit. Now new economy entrepreneurs are being accused of ignoring the environment.

A report to be published on Monday by the environmental campaign group Forum for the Future will call on dotcoms to take responsibility for the ethical dimension and social impact of their ventures.

Forum was founded in 1996 by green campaigners, including Jonathon Porritt, to encourage sustainable development by businesses and government. As part of a government project, Digital Futures, its report will claim that the lack of attention by dotcoms to sustainability issues is a disgrace.

James Wilsdon, the report's author, said: "E-commerce may rewrite the rules but this does not give it the right to act with impunity. Cost-cutting in online trading sites is probably being paid for in a sweat shop in Manila or by more pollution in the environment."

The report cites Amazon.com's operation in December to deliver 250,000 copies of *Harry Potter and the Goblet of Fire* to American homes in time for Christmas, as an example of environmental ignorance in dotcoms. More than 9,000 trucks and 100 specially chartered aircraft were used to shift 188 million pages of Potter in just 24 hours.

Mr Wilsdon wrote: "This probably broke all the records for the quantity of greenhouse gases and packaging waste generated by a single novel."

A spokeswoman for Amazon.co.uk said in the UK it uses recycled packaging and sends parcels via Royal Mail to use existing distribution networks.

Online organic and Fairtrade shops, such as WestCountry Organics and Organics Direct, are growing, while Oxfam's Fairtrade label sold 3pc of its goods online in the run-up to Christmas. Mehmet Golhan, founder of drParsley, a company that develops commercial projects with a social or environmental focus, notes that there are no venture capital funds for ethical dotcom ideas.

He said: "Existing dotcoms were fuelled by get-rich-quick dreams. When you are doing 16-hour days, you're so cruel to yourself it's also much easier to be cruel to your environment."

Web Links

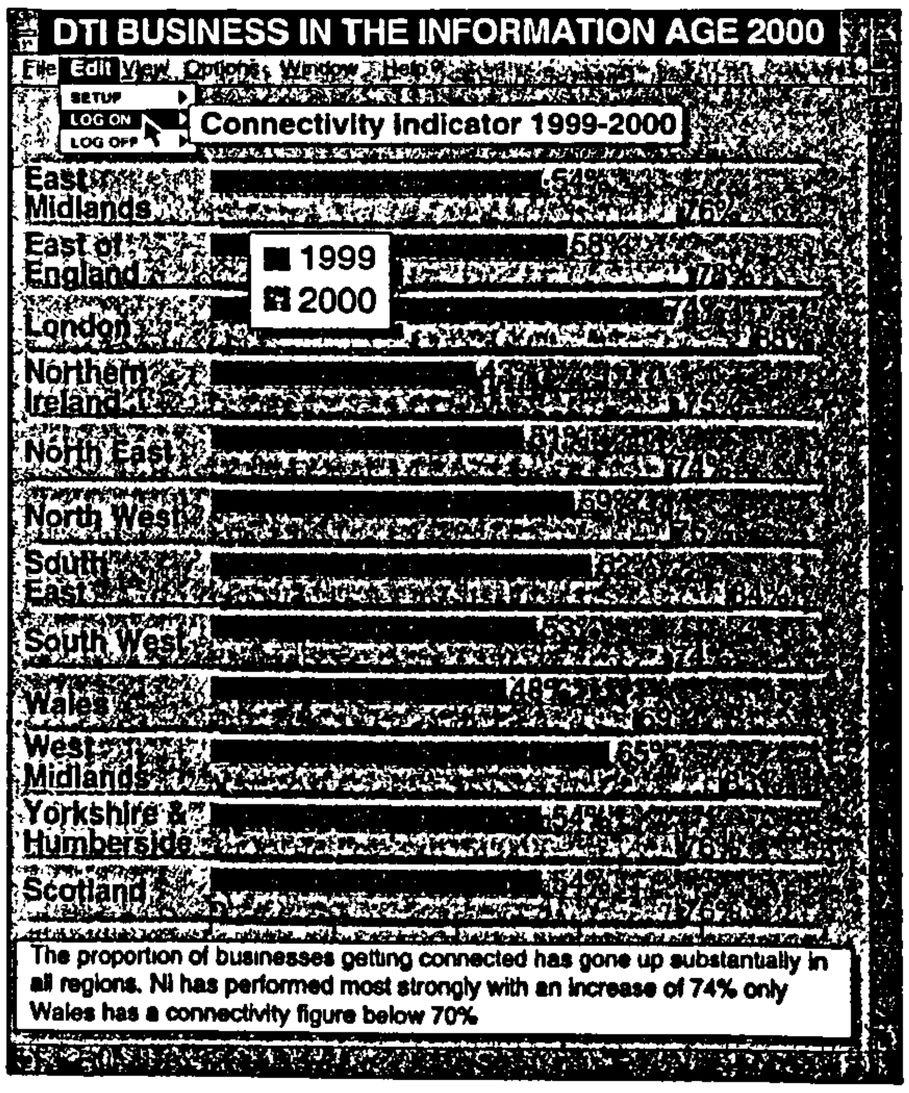
www.digitalfutures.org.uk
www.drparsley.com
www.ushopugive.com
www.organicsdirect.com
www.westcountryorganics.co.uk
www.oxfam.org.uk
www.ethical-junction.org

From ships to clicks

In e-commerce, they said, the old-school network wouldn't matter. But **Marcus Austin** finds you're still better off in South Ken than South Shields

The e-commerce revolution will change the way we work, the way we use our leisure time and our society. Harold Wilson's "white heat of the technological revolution" is finally with us; technology has come of age and is starting to be useful to everyone. Or is it? What most people fail to mention is that, although the e-commerce revolution is based on the World Wide Web, that revolution won't necessarily happen worldwide at the same time. The unfortunate truth is that e-commerce is happening at different rates in different areas of the UK, and this is creating a divided nation. The successful regions are getting more successful, and the poorer regions are getting poorer.

So far, the full force of the "white heat" has concentrated on the south-east and, in particular, it has warmed the cockles of east London. One of the hotbeds of digital design is London's Hoxton Square and the surrounding areas of Shoreditch – now known as "the digital ditch" – where rents are now so expensive that fledgling e-commerce companies can no longer afford to get a foothold there. The area even has its own local e-paper, the *Hoxton Hub*, which describes "the ditch" as one of the e-commerce centres of the world.



Although London might well be classified as one of the e-commerce centres of the world, the story around the UK is very different. "Mapping the e-economy in Britain", a report produced for the government-backed Digital Futures Project last October, included some sobering figures. When the internet recruitment company Boldly-go (www.boldly-go.com) reported on research into the location of dotcom companies in the UK, almost 80 per cent were based in the south-east, with London accounting for almost 60 per cent. Outside London, Silicon Fen (Cambridge) and Silicon Glen (Edinburgh/Glasgow) accounted for just 3 per cent and 4 per cent respectively.

Take a look at the regions in more detail, and the results are even more depressing. Out of the 11 local regions looked at by the report, only London and the south-east reached the European average for economic prosperity measured by GDP per capita. However, there is good news: the speed of take-up by those regions is increasing dramatically. Scotland is fast catching up with the south-east and, if it carries on at the current rate, could soon be on par with London. Wales is one of the least performing areas; it is the only region to fall below the 70 per cent connectivity figure hit by the other regions. "Mapping the e-economy" also points out that the developers of 39 houses in Crickhowell, Powys, designed to become a sustainable telecommuting community centred on the internet, had to call in the liquidators in October, with a third of the houses remaining unsold.

When we look at e-commerce, we shouldn't forget that the market is still very small. Business-to-business (B2B) is the largest sector – and accounts for between 70 and 85 per cent of all electronic sales – with business-to-consumer (B2C) trailing a long way behind. In the US, where most internet transactions take place, sales in the final quarter of 1999 were equivalent to about 0.6 per cent of retail sales. In Europe, overall B2C penetration is just 0.2 per cent of retail sales, although in some countries, including Sweden, the Netherlands and the UK, it is similar to the US rate. However, not included in these statistics are offline sales where the internet has been used for price comparisons and has influenced purchases. These figures can be especially important for expensive items such as cars or houses.

New-boy network?

The first w in www stands for world, but what a small world it describes. The web was supposed to let someone in South Shields have as much chance of gaining a foothold as someone in South Kensington. And, in the early years, this was true. The famous cartoon of two dogs sitting at a computer, with the caption "On the net, nobody knows you're a dog", did, and still does, to an extent reflect reality. But as bigger businesses, particularly the corporate giants, enter the web, the cost of entry is rising exponentially. To compete, you now need more than just a website; you also need a multimillion-pound promotional budget and a PR company to get your name shouted above the rest of the din. Suddenly, it becomes obvious that ▶

FINANCIAL TIMES

Too busy to be green

Dotcoms could have championed eco-friendly business. They have failed to seize an opportunity

TIM JACKSON
ON THE WEB

My father has a clever way of dealing with waste paper. Instead of crumpling it up and throwing it in a bin, he simply places it, sheet by sheet, flat inside an empty cardboard box under his desk. The box is the one the paper was supplied in, minus its top, so it fits perfectly.

When I started a company in 1997, I tried to persuade the people I had hired to adopt the same system. The advantages were obvious: easier recycling, less wasted time emptying bins, fewer plastic binliners used and less landfill space required. Most convenient of all, the system let you "undelete" something you had thrown away. Since the boxes took months to fill up, finding a discarded document from three weeks ago required only a riffle through the box.

Sadly, the idea did not catch on. A few people tried it but threw paper in higgledy-piggledy so the box simply became a second bin. Others ignored the suggestion and rolled their eyes at reminders. When the company went public after two years, about 100 staff crumpled up their paper like people anywhere else, nothing was recycled, and the contents of the bins were gathered up in plastic bags by contract cleaners each night.

Why, as a business trying to be innovative, did we pay so little attention to the environment? According to James Wilsdon, author of a recent paper*, net entrepreneurs hide behind three myths in defending a lack of social responsibility. One is the mistaken belief that their businesses, being "virtual", have no negative effects on the bricks-and-forest world. Another, borrowed from business in the developing world, is that their very business immaturity entitles them to be thoughtless. A third is that technology has nothing to do with society or the environment.

My guess is that the reason net businesses have not been more focused on their wider social responsibilities is straightforward: their managers have simply been too busy trying to stay alive.

A survey of 150 technology companies commissioned by Forum For The Future seems to confirm this. Respondents seemed unusually interested in environmental issues: 65 per cent of respondents thought the environment important for their businesses and 92 per cent thought it important for themselves. Asked to explain why they did little about it (83 per cent offered no environmental training to their staff, for instance), 57 per cent claimed they did not have enough time and 55 per cent said they lacked expertise.

But Mr Wilsdon shows as mistaken the 75 per cent of respondents who thought their businesses had no significant environmental impact. He considers Amazon.com's spectacular delivery of 250,000 copies of the latest Harry Potter book on publication last year and quotes a boastful Federal Express press release, revealing that 9,000 trucks and 100 aircraft distributed the books. "It seems likely that it broke all the records, not only for e-commerce delivery, but also for the quantity of greenhouse gases and packaging waste generated by a single novel."

That may not be right. An Amazon box weighs more than a carrier bag but the negative environmental effect of those 250,000 cardboard boxes may well have been offset by the fewer miles driven as FedEx trucks replaced 10-mile trips in private cars.

That illustrates a wider point about e-commerce: by more effective use of information and distribution, it should be good for the environment. As Mr Wilsdon puts it, the $3bn (£2bn) of stuff sold in online auctions at eBay represents lots of things that might otherwise be in landfills.

Yet Mr Wilsdon believes net companies should do better. He proposes a Declaration of Co-dependence, by which entrepreneurs may acknowledge the effects of their activities, and argues for "joining the dots" between the dotcoms of business and the dotgovs and dotorgs of other sectors. He takes net businesses to task for short-termism and has several ideas for improvement, from closer engagement with local communities to green delivery options at online retailers.

The argument strays when Mr Wilsdon takes up the criticism of net companies levelled by Andy Law, founder of the St Luke's advertising agency: that they are "owned and managed absolutely conventionally, and rather than redefine business, they exist to enrich a tiny few". That is true but unfair. No prudent manager would choose to innovate on too many fronts at once. When you are trying to pioneer ways of serving customers, it is tempting to leave experiments in co-operative ownership and hot-desking to companies that have the luxury of profits.

Perhaps dotcom ethics matter less than when Mr Wilsdon's project began. A year ago, net entrepreneurs were treated by captains of industry as admirals of the fleet. Nowadays, traditional business leaders can be forgiven for being less interested in what we have to say.

Yet Mr Wilsdon's call is timely. When a third of all Americans work for companies that did not exist 20 years ago and when new businesses such as Microsoft, Intel, Cisco, Dell and America Online help shape business culture, it must be right to say that innovators have an opportunity to change for the good the way business works. So the net managers should reconsider their responsibilities and debate their impact on the environment. Oh, and they should keep discarded paper in a neat box under the desk.

**Dotcom Ethics: E-Business and Sustainability, www.forumforthefuture.org.uk*

Tim Jackson is founder of QXL and managing director of Carlyle Internet Partners Europe. Unless declared otherwise, neither he nor his venture capital fund has an interest in the subject of this column. tim@ecarlyle.com.

NewMediaAge

The news weekly for the interactive economy www.nma.co.uk 1 February 2001

INSIGHT

Learning a lesson in ethics

In this age of growing environmental and social awareness, why has the new media industry been so slow to catch on to the idea of an ethical business strategy? Elen Lewis **investigates.**

THE INTERNET INITIALLY MADE A lot of promises about how it could make the world a better place, not just on a business level but on social and environmental levels too. Music and software downloads would help the environment by leading to lower consumption of products, while fewer trips to the supermarket would mean lower pollution levels.

But recent research from a report commissioned by Patricia Hewitt to discover the impact dotcoms will have on individuals and the environment reveals how detached the Internet world is from these lofty ideals. The report, 'Dotcom Ethics: E-business and Sustainability', finds that although new media firms claim to be concerned about ethical business issues, the majority have not taken steps to address this.

"In terms of attitude, firms were very positive and fired up, but reality doesn't match up to rhetoric," explains James Wilsdon, senior policy advisor at environmental thinktank Forum of the Future, which carried out the research.

It found that while 65% of those surveyed said social and environmental issues are important or very important to their company, 79% do nothing to measure or manage their environmental impacts, 66% do nothing to measure or manage their social impacts and 82% do nothing to measure or manage their transport impacts.

Similarly, a report released by the Directory of Social Change in 1999 revealed that the IT industry was notably poor at corporate giving. Its annual contribution was £980,000, compared to the telecom sector's £4.7m, the oil industry's £7.9m and the banking industry's £15.2m.

One exception to the rule in the new media sector is AOL. Katrina Giles, head of social inclusion at AOL UK, has been looking at ways of correcting the digital divide for the past two and a half years. She believes the new media industry has been poor at contributing on this level is because it's so young.

"There's also the myth of virtuality: that because dotcoms operate in a virtual space, social and environmental impact is negligible. But like any other organisation, we don't exist in isolation to the community we operate in," she adds.

AOL, alongside companies such as Amazon, BT, Sun Microsystems and Kingfisher, was one of the key sponsors of the Forum of the Future's report. "For us it's a call to arms," says Giles. "We've always done community investment projects in the UK; we're now moving to policy level. Every decision we make is carried across the company. It's a learning process because it's about reporting on our impact in a new area."

She admits that firms like AOL and Amazon are in a minority. "We meet up with organisations such as Business in the Community, but I'm hard-pressed to find other people in the sector."

But an ethical policy could also provide a channel for dotcoms to new customers. A report by MORI on ethical consumerism discovered that a quarter of the UK public have sought information on a company's ethical practices and policies, and that more than half would recommend a company or product on the basis of its responsible reputation.

Shaun Orpen, director of corporate marketing at Microsoft, manages the company's contribution to charities and the community. Microsoft has a tight brief, with its charitable policy focusing on youth, education and anything with relevance to technology.

AOL's Giles: "Like any other organisation, we don't exist in isolation to the community we operate in."

Orpen says: "A commercial enterprise can play a role in social issues. The IT sector needs to do more."

Microsoft is involved in the Government's initiative to get citizens online, but Orpen argues that "technology is not relevant until it changes behaviour." He cites one charitable project to help disabled people, where Microsoft donates PCs and printers and teaches them how to use the technology through a virtual college, thus enabling them to work at home.

Orpen won't be drawn on the figure that Microsoft invests in charitable activity, insisting: "It's not about money. It's also a fantastic way to motivate staff."

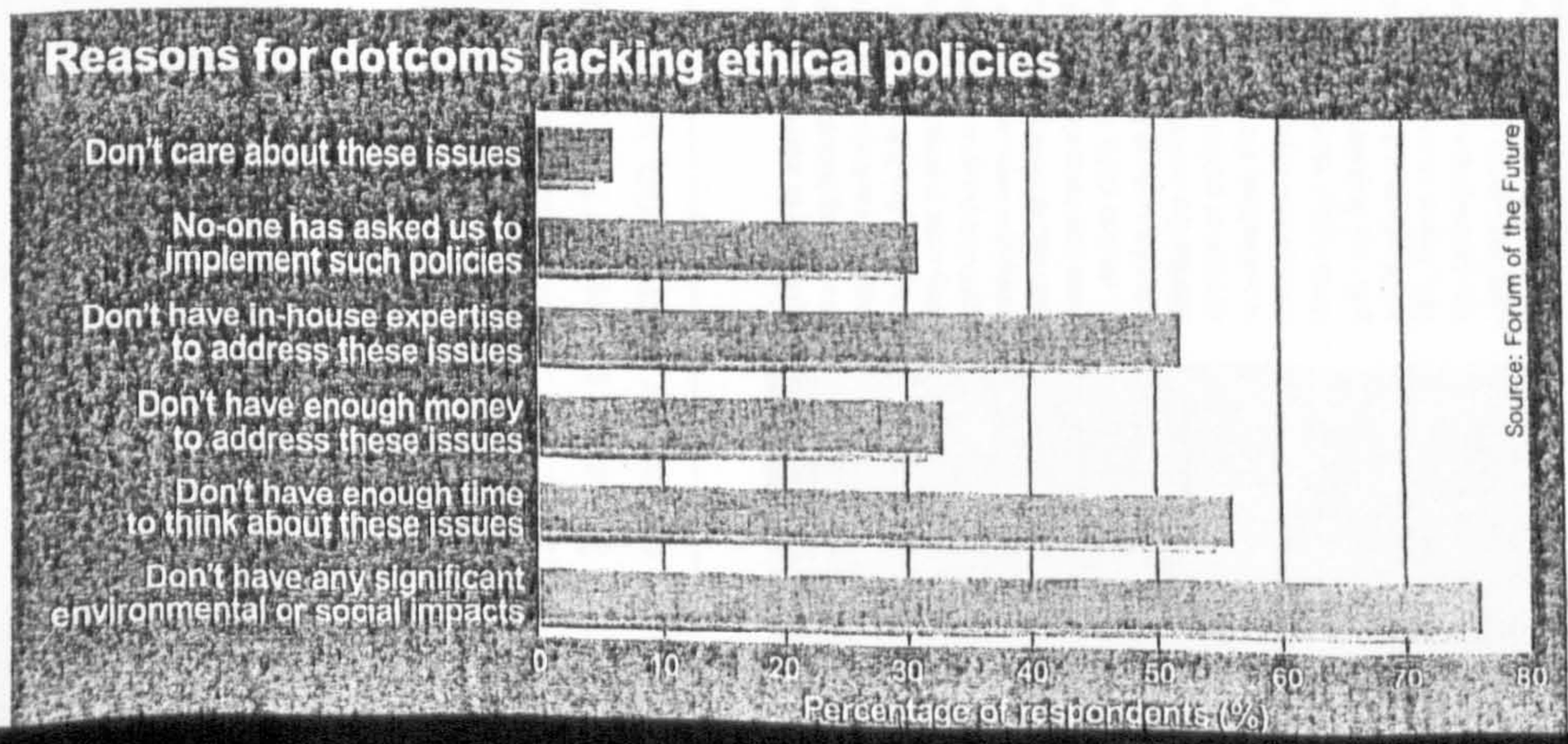
It's obviously easier for a large, cash-rich corporation like Microsoft to give something back to society. However, Wilsdon says: "It's not necessarily about big investments of time and money. A B2C start-up could start thinking more carefully about environmental issues."

He believes an ethical approach could begin simply through careful thought as to where products are sourced from and learning from old-economy mistakes.

"Most B2B exchanges are flying blind as far as social and environmental standards are concerned. It's only a matter of time before dotcoms are hit by a sourcing scandal similar to Nike or Gap. At the moment, B2B exchanges are driven by price alone, which isn't necessarily good if the cheap goods have been made by a five-year-old in a sweatshop. It's important to get the protocols right before putting them into an exchange."

Another interesting element in the report is its observation that the Internet could make it easier for the empowered user to become an ethical consumer. Wilsdon suggests an ethical spin on the comparison shopping site model, such as ShopSmart, which could compare products in terms of environmental or social issues rather than price.

He has a vision of what he'd like the new economy to look like in five years' time. "I'd like to see a fresh wave of social and environmental entrepreneurs hot on the heels of the economic entrepreneurs who live up to the ideals of the new economy. Otherwise it's all been a bit of a damp squid – a wave of companies that went bust and were then reabsorbed. This is about there being hope



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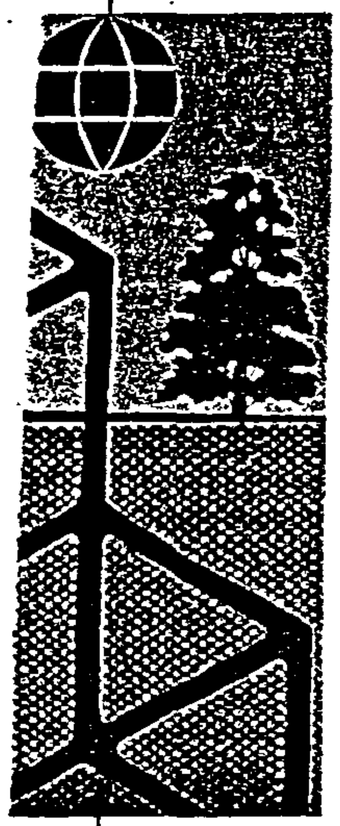
8 Feb 2001

GREEN MACHINES

The new economy has the potential to be environmentally friendly. Once industry is driven by innovation, we can steer it in an ecological direction. BY CHARLES LEADBEATER



Shawn Fanning, the twenty-something founder of Napster, is an unlikely environmental hero. Napster, the Internet music community, uses a simple yet powerful software program that enables a computer user, armed with a modem, to download music files from someone else's machine.

At first sight, this technology appears to have little to do with protecting the environment from climate change or pollution. Yet, on closer examination, the environmental potential of Napster could be large. If the entire music industry were to embrace Napster-style technology, it could phase out the production of CDs, tapes and most of the materials, packaging and transport associated with these products. Fanning turns out to be not just a techno-entrepreneur but, unintentionally, an environmental entrepreneur as well.

The new economy – not just e-commerce, but the whole innovation-driven, information-rich new economy – holds out a tantalising promise for environmentalists beyond that of reducing the consumption of materials (although replacing millions of 30-volume, leather-bound Encyclopaedia Britannica sets with one Web site is quite an achievement). This potential lies as much in the way that it makes us think differently, value differently and consume differently.

Take valuation. The sight of Web sites such as Boo.com crashing to instant infamy masks a deeper problem: we still find it hard to appraise a company that is not based on physical assets.

Accounting systems measure the throughput of resources, not the ideas, creativity and innovation that really drive the value of *most* companies these days.

In a striking parallel to efforts to price these intellectual assets more accurately, environmentalists are calling for more systematic accounting of "natural capital" – such as clean air and water – that provides a vital service for the industry but is similarly undervalued.

Perhaps the ever-increasing realisation that we are not valuing our most vital assets sufficiently will finally jolt us into finding ways to account and pay for them.

The new economy may also radically change the way we think about ownership. In the old industrial economy, it was essential to own physical products and assets. Owning a car or stereo was a badge of honour for young people.

But in the new economy, outright ownership of physical products may come to matter less. Consumers will increasingly value experiences that leave a lasting impression, which give them a high, make them feel special and leave them with a warm glow.

The new service economy is about delivering experiences to people which, in the words of American futurist James Ogilvey, means "trading in what makes the heart beat faster".

Physical goods matter, but only to the extent that they provide people with the experience that they want to have.

Companies, too, are shying away from ownership – the new economy maxim for fixed assets such as land, offices, computers and machinery is: "Use it. Don't own it."

About a third of business machines, equipment and vehicles are leased in the US. Knowledge-based companies need to own and retain their real assets: their people and the culture that binds them together.

A sustained shift from outright ownership to leasing assets and valuing commodities for the services they deliver could result in significant environmental gains.

For companies, leasing means that producers retain ownership and ultimate responsibility for the product – including its disposal. If manufacturers, rather than consumers, had responsibility for the disposal of a product at the end of its life, they would have a prime incentive to make the product as robust and durable as possible. They would also have a powerful incentive to design products that are recyclable.

And, in an economy in which competitiveness turns on innovation, the opportunities to design entirely new production systems that use fewer materials and energy have never been greater. The bagless Dyson vacuum cleaner, to take one example, has been designed to be recycled. An innovation designed to make a product easier to use for consumers has created the opportunity to improve the product's environmental performance.

At the same time, the production process for making the Dyson is designed to be more environmentally friendly. In contrast, traditional vacuum cleaners, where design change has been incremental, offer fewer opportunities for improved environmental performance.

The more radical the economy, the more opportunities there will be to make production more environmentally friendly. Innovation should be the main tool to minimise industry's environmental impact.

The forces that drive innovation – not just scientific research but competition and entrepreneurship – can also be good for the environment.

If only it were that easy. Fanning may yet abolish CDs, but to use Napster, you still need a computer – which uses resources and energy, and creates pollution, through its manufacture, use and disposal.

Everyone knows of people in their office who print out every e-mail they receive, cancelling out many of the environmental gains of virtual communication. Amazon.com may appear ethereal to the customer who logs on to buy books, but they are back in the world of pollution and congestion when the van draws up to deliver the products.

Then there is the new economy's propensity to increase consumption: the rebound effect. The new economy means increased efficiency, which means reduced prices, which means more consumption. The accelerating rate of innovation and ceaseless advertising means a constant demand for newer versions of computers, hi-fis and MP3 players.

All estimates suggest that, though technology has enabled a dramatic increase in resource productivity, our insatiable appetite to consume is quickly filling the extra environmental space that technology opens up.

Can we harness the power of innovation to the cause of the environment, instead of just using it to make computers and phone lines faster?

We need a public policy to encourage a greener form of innovation, rather than focusing on capping the environmental costs of the old industrial economy.

That means encouraging research into technologies such as solar power that could be both more efficient and greener. We should aim to create incubators for entrepreneurial green businesses, even schools for environmental entrepreneurs.

Nowhere is collaborative innovation needed more than in city transport and urban mobility, to combine the novel electronic vehicles and intelligent road-pricing systems with initiatives to create more cycle lanes and pedestrianised areas.

There are signs of a coalition developing between greens who recognise protest alone will not bring change, responsible firms that recognise they must respond to the green agenda, and a new generation of innovators and entrepreneurs who buy into environmental values.

In time, this coalition will find its voice in society among a new generation of leaders who are able to embrace environmental goals within mainstream politics.

There is the potential to open new ways forward for the economy and the environment in which innovation can feed competitiveness, environmental efficiency and, ultimately, sustainability. To expect it to be a virtuous circle may ask too much – to establish a less destructive circle might be possible. We have not entered a promised land where commercial interests can be magically reconciled with the interests of the natural world.

But in the new economy, outright ownership of physical products may come to matter less

However, it would also be a mistake to turn our backs on the opportunity opening up before us: a chance to explore territory that did not exist 30 years ago – a territory in which the interests of the innovation-driven knowledge economy and the environment may converge. ■

Charles Leadbeater
(charlie@malvernrd.demon.co.uk)
has just published Mind over Matter:
Greening the New Economy
(Green Alliance, £10/€15)
http://www.green-alliance.org.uk

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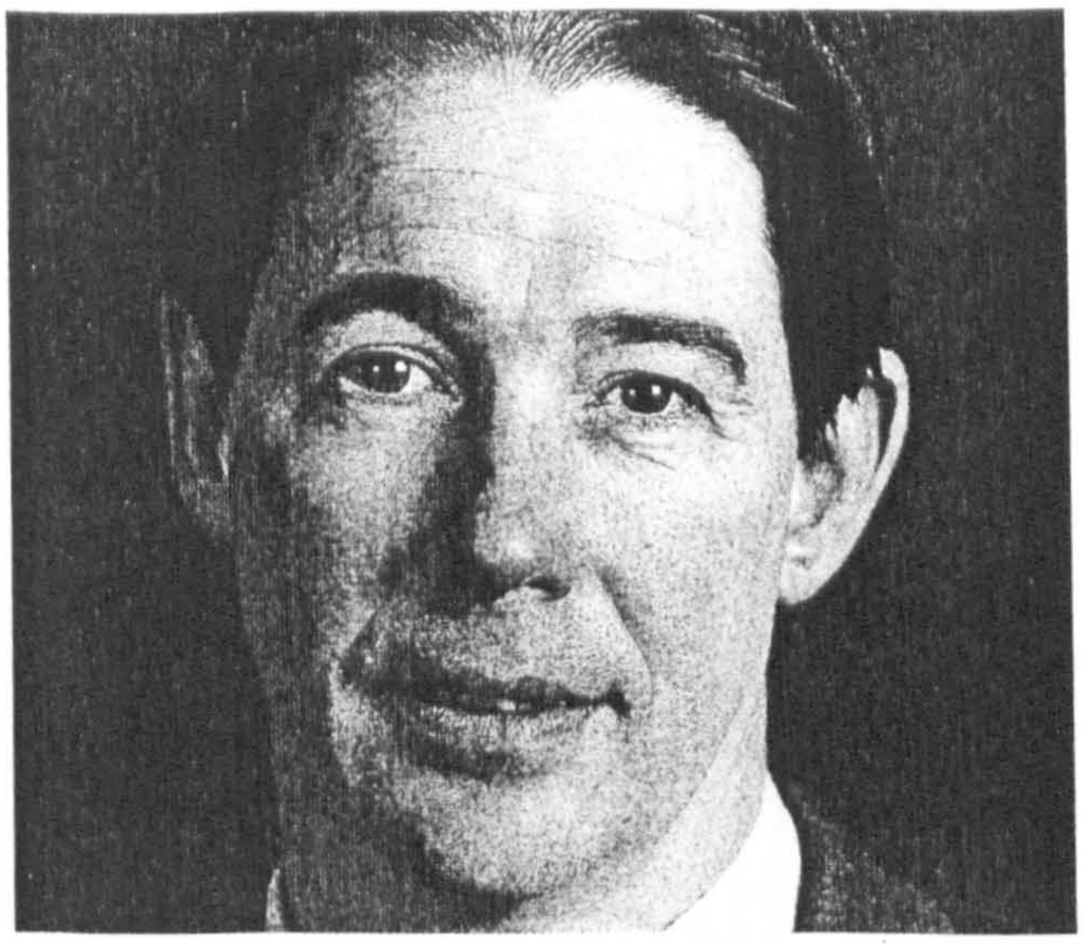
Be ethical and sutainable, says dot-com report

IT and dot.com entrepreneurs say that social and environmental issues are important to them personally and to their companies, yet few do anything in practice to address the concerns, according to a survey published in January. The report, *Dot-com ethics: e-business and sustainability*, forms part of the year-long *Digital Futures enquiry* by **Forum for the Future** into e-commerce and the new economy. Based on responses from over 100 companies, the findings included:

- 65 per cent say social and environmental issues are important or very important to their companies and 92 per cent say important to them personally;
- 57 per cent believe that companies with a good environmental and social reputation are likely to benefit from improved financial performance;
- but 79 per cent do nothing to measure or manage their environmental impacts; and
- 66 per cent do nothing to measure or manage social impacts.

Despite the lack of action, the report concludes that the positive effects of e-commerce will outweigh the negative and recommends that new economy companies sign up to a *Declaration of Co-dependence*. It also suggests practical steps such as closer engagement with local communities and green delivery options at online retailers. **Amazon.com** and **eBay** are among companies profiled. *Contact James Wilsdon, Forum for the Future, on 020 7251 6070 (www.forumforthefuture.org.uk)*



JONATHAN PORRITT

NET WORTH?

An environmentally conscious friend of mine has become an enthusiastic user of e-shopping. To save aggravation, she buys all her 'bulk stuff' (the washing powder, loo paper and industrial quantities of breakfast cereals for the kids) over the Internet.

How does she use her new-found spare time? By nipping along in the car to an up-market store to pick up gourmet fresh items and bargains. When you add the green house gas emissions from the delivery van to the emissions from a loyal shopper, you end up with a net increase in environmentally damaging activity.

That is a rather different picture from the hype that – at least until the recent media obsession with dot-com disasters – seemed to assume that the Internet is changing everything for the better. Reduced prices, increased convenience, wider choice: a series of virtual transactions that simply must be good for the planet.

The Digital Future's forum has been an attempt to stand aside from the herd tendency of Internet oversell. In part, we've offered a snapshot of where society is as the New Economy really begins to bite. Much more importantly, we've explored how to make the most of the opportunities that this Brave New World offers. To do this, we brought together a unique consortium of government departments, companies, leading think tanks and NGOs.

Part of the challenge for those involved has concerned the scarcity of hard and fast evidence. Change is happening so fast in the New Economy that research and policy-making can't keep pace. As a result, there has been an almost exclusive focus on harnessing the economic potential of the Internet, and hardly anything said about its wider social and environmental opportunities.

Take this description: "The revolution offered enormous opportunities for the creation of national and personal wealth. Unfortunately, it carried with it the most profound effect on the social and ecological framework of the societies which experienced it. These effects were, however, for some time seen as the responsibilities of governments…" That was written as a description of the Industrial Revolution. It seems uncomfortably germane to its digital descendant.

"Those who cannot remember the past are bound to repeat it." And as both government and business now seek to retrofit policy to mitigate and repair some of the damage done through the old industrial economy, this is precisely the time for practitioners of the New Economy to avoid falling into the same trap.

You might think that this is rather doom-laden stuff on the basis of one person's car journeys. But looked at empirically, there are plenty of very plausible scenarios which go with it. Are businesses going to sleep easy once they have mastered Net-based trading and ordering systems? Of course not. The savings they make will be translated into fresh economic activity and new markets. Are consumers going to sit quietly at home waiting for deliveries? Not while Legoland beckons and the people carrier is sitting in the drive. And what abo the consequences for those who l easy, or indeed any, Net access?

Although there is a good deal support among dot-com entrepre for a sustainable approach to the Economy, there is absolutely no that e-business is way behind in t of the corporate support for sustainability that exists in the O Economy. The single most impor conclusion to emerge from our research is that the worst thing w do is to worship unthinkingly at altar of the digital god, or be swe along by the sheer pace and scale technological change. There's a lo work to do if we are to make this economy cleaner, greener and m socially inclusive than the old.

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Unless you are a bungee-jum a lemming, a useful piece of adv look before you leap. Digital Fu will help us take a look over the It might be rocks or it might be It's probably a bit of both. But rather know which before I jum

"THERE HAS BEEN AN ALMOST EXCLUSIVE FOCUS ON HARNESSING THE ECONOMIC POTENTIAL OF THE INTERNET, AND HARDLY ANYTHING SAID ABOUT WIDER SOCIAL ISSUES"

JONATHAN PORRITT IS FOUNDER OF FORU THE FUTURE. WEB SITE WWW.FORUMFORTHEFUTURE.ORG.UK

BUSINESS 2.0

JONATHAN PORRITT

NET WORTH?

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At a major conference on 1 March in London, we will launch a book – *Digital Futures: Living in a Dot-Com World* – which sums up our research on issues ranging from the transport impacts of e-business through to the opportunities it creates for improving social inclusion. The book offers an agenda for action for government, business and society in the quest for a sustainable digital economy.

As Tim Jackson put it at First Tuesday in December, "Now that we realise e-commerce isn't a passport to untold riches, it's about time we gave some thought to something other tha money." He's right. If Internet businesses are to be with us in 10 to 15 years, they are going to have to prove their worth. There is no better way for them to move forward than t embrace the social and environmenta agenda. If companies can demonstrat that they contribute to true improvement in quality of life for all, they stand a much higher chance of surviving the dot-com shakeout.

Unless you are a bungee-jumper or a lemming, a useful piece of advice is look before you leap. Digital Futures will help us take a look over the edge It might be rocks or it might be grass It's probably a bit of both. But I'd rather know which before I jump.

JONATHAN PORRITT IS FOUNDER OF FORUM FOR THE FUTURE. WEB SITE WWW.FORUMFORTHEFUTURE.ORG.UK

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Green futures

The frenzy surrounding the new economy has allowed little thought for ethical considerations. **Russell Lawson** reports on a survey whose findings highlight the environmental shortcomings of e-businesses

Having bravely attempted to do your Christmas shopping over the internet last year, it is likely that you would have been more concerned with presents arriving on time than their environmental impact.

And you wouldn't be alone. According to a new survey published by the environmental think tank, Forum for the Future, most dot coms haven't given the environment a second thought either.

The organisation, founded by Jonathon Porritt, the former director of Friends of the Earth, has been taking part in Digital Futures, the government-backed research project into the social and environmental impacts of e-commerce. During the past 12 months, Forum for the Future has been investigating the effect of the internet on the environment and recently published its report entitled *Dot Com Ethics: E-business and Sustainability*.

> The majority of on-line companies do not measure the impact of their business on the environment

According to the research, although many dot coms pay lip service to the environment, the overwhelming majority of on-line companies do not measure the impact of their business on the environment and even fewer are doing something about it. Senior policy advisor, James Wilsdon says that people don't associate the internet with environment; after all, land fills, oil spills and air pollution are more readily connected with industries of the old economy. But this does not mean companies working in a virtual world have virtually no impact – far from it. The year-long investigation has thrown up several areas of concern that dot coms are going to have to address.

One of the group's major concerns centres on transportation. Although at first glance the prospect of dozens of homes having their groceries delivered by a single van may seem like the perfect answer to road congestion, Wilsdon is not so sure. He believes home shopping may increase traffic rather than reduce it. Wilsdon says we may now be faced with the prospect of hundreds of white vans clogging up the streets all trying to deliver goods from various stores, some even to the same address. To avoid this from happening, Wilsdon is now calling for greater collaboration among dot coms. He does, however, admit that just getting companies to acknowledge their impact is going to be difficult. Even the government has neglected to factor in the potential traffic increase from new economy companies in its transportation programme, and this is where Wilsdon really believes policy makers can make an impact.

PRICE OVER ETHICS

While road pollution may be one of the more tangible side effects of a boom industry, Wilsdon says there are other considerations. He points to the development of internet exchanges. "As more purchasing decisions become automated and decided on price, it becomes easier for ecological and ethical concerns to be squeezed out. So you end up sourcing trainers from some sweatshop in Indonesia. Cutting costs is admirable so long as you are not pushing out the environment and the vulnerable. It is for non-government organisations (NGOs) to lobby industry to take these issues seriously and get them to adopt some basic rules and standards into that operation, but it is not easy to see how. Sooner or later there is going to be a sourcing scandal similar to Nike's. It is just a question of time."

Wilsdon says new economy companies must now start thinking about their impact. Even though 65% of respondents to the Forum's survey said they thought environmental issues were important or very important to their company, it is pretty clear little is being done about it, and to Wilsdon the excuses are pretty unconvincing. Dot coms are saying they do not have enough impact, and that there is a lack of time and capacity, or a lack of resources. But what Wilsdon wants to see is some new economy dynamism put back into the environment. He also says that if companies do invest in the environment, their efforts will be rewarded. "There is a clear correlation between good citizenship and profitability," he says. "We have already seen a link with blue chip companies and there is a consumer-facing game to play, especially if you map the demographics of the people likely to shop with these sites. They are usually the *Independent/Guardian*-reading, 30-something liberals who generally care about the environment." Wilsdon says what is important is that these companies understand how having an environmental and social conscious can have a positive effect on their business.

LIGHT IN THE TUNNEL

But it is not all bad news. Wilsdon says that dot com bosses are generally more positive about their responsibilities than their old economy equivalents. "That is because they are younger, more liberal and metropolitan. There is also a greater awareness of the environment than there was 15-20 years ago and it has become much more ingrained. So at least they recognise it even if they do nothing in their business lives." Wilsdon adds that the internet has the potential to be hugely beneficial to the environment and the report highlights many of the positive effects the new economy is having. Sites such as E-bay have extended the life cycle of many products which would have otherwise ended up as land fill. Napster is another unlikely example of how the internet is helping the environment. MP3 technology negates the need to produce CDs and tapes and replaces them with a digital file which can be copied innumerably. While the report plays down the environmental impact, it says that the benefits of dematerialisation could be huge. Quite clearly, the internet presents dot coms with the opportunity to contribute positively to the environment. The question is: do they really care?

The Forum for the Future will be presenting its entire survey along with other reports on the impact of e-commerce at the Digital Futures conference in March 2001.

Right: senior policy advisor, James Wilsdon says e-commerce is wrongly perceived as a greener alternative

A THOUGHT FOR THE ENVIRONMENT

The Forum for the Future has highlighted Drparsley.com as one of its top ten ethical dot coms. Founded by former investment banker, Mehmet Golhan, the site develops businesses that generate profit and address economic and social issues. The company has been working on three projects comprising Organicworks, a B2B trading company for the organic food industry; Browserangel, an on-line assistant which helps business keep up-to-date with important social and environmental issues, and its own in-house incubator. Golhan is confident the internet can work for businesses and the environment. He says corporates are increasingly looking to improve their image and establish a dialogue with pressure groups. "The reason for this is increasing accountability and transparency. They're also worried about liability after what happened in the tobacco industry." Golhan adds it's not just external pressure that's forcing multinationals to develop a conscience, but there is also a will to look for solutions from within these organisations.

www.ethicalperformance.com

ethical performance

the independent newsletter for socially responsible business

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new economy

e-businesses get help on social responsibility

Three new European initiatives have been launched to help internet businesses become more aware of corporate social responsibility issues.

The projects come at the same time as findings of the year-long Digital Futures inquiry into the social and environmental opportunities of the 'new economy' in the UK are released on 1 March. The inquiry found that internet-based firms have a long way to go before they match the 'old economy' on corporate social responsibility.

First of the three projects is a £1million ($1.45m) scheme, Digital Europe, sponsored by Vodafone and Sun Microsystems. This will study the social and environmental impacts of e-commerce in eight sectors. It will then seek to help firms in those sectors become more sustainable. The sectors will be financial services, music, pulp and paper, food retailing, auto-manufacture, books, PCs and second-hand goods.

The venture will be run by Forum for the Future, the sustainable development body that administered the Digital Futures inquiry, in conjunction with two European organizations – the Wuppertal Institute in Germany and Fondazione Eni Enrico Mattei in Italy. There will be input from the European Commission, which wants to apply the lessons learned from the Digital Futures inquiry 'at a pan-European level'.

In addition to the Digital Europe project, Forum for the Future is also establishing a permanent 'policy laboratory' to carry forward the ideas outlined by the inquiry.

It has also teamed up with the UK-based Demos think tank to set up a support network for 'e-entrepreneurs' who want their companies to become more socially responsible.

The idea of creating a network was one of the recommendations of the inquiry, which concluded that many e-businesses 'still have a lot to learn about the basic policies and systems necessary to deliver social and environmental improvements.'

The inquiry report found that e-commerce 'has no intrinsic dynamic towards sustainability', but argued the sector could still 'become a powerful vehicle for ... sustainability'. It said there were 'plenty' of environmental opportunities for e-businesses, including reductions in transport and energy use through services such as online banking and accounting, or selling music in digital form.

However, it acknowledged the potential for negative effects, as e-commerce tends to make greater use of air freight and light goods vehicles to deliver products to consumers' homes. The inquiry concluded that 'now is the time to take precautionary action.'

It also recommended that e-businesses should use the web to 'set new standards for real-time, multimedia reporting and stakeholder dialogue', and said they should extend online assurance schemes for safe e-commerce to cover environmental and social issues.

The inquiry was launched in February 2000. Fourteen companies – including AOL, BT, the Post Office and Unilever – contributed to its deliberations.

Further information: James Wilsdon at j.wilsdon@forumforthefuture.org.uk

news from the
new economy

March 2001 ◆ Issue #20

new economics foundation

How to green e-commerce

WHAT would it mean for e-commerce to be green — because the idea that dot.coms are environmentally and ethically neutral is a myth?

That was the main question posed by the Digital Futures project, led by Forum for the Future — of which NEF was a research partner — and which has now published its findings.

The project has been progressing for a year, as a partnership between business, researchers and government departments. Its full findings are published in the *Digital Futures* book, published by Earthscan in mid-March.

Without concerted action now, we run the risk of problems in the future — from increased social exclusion, to streets jammed with half-empty delivery vans and a substantial growth in air freight, the report says.

NEF's research focussed on digital exclusion — arguing that the downside of e-commerce may be that local money flows are sucked out of disadvantaged areas, while poorer people are given no option but cheap online public services, delivered by computer and with a minimum of human contact.

The final report urges the development of new local electronic currencies capable of using e-commerce to keep resources local, and time banks that can make sure human contact survives the development of virtual government.

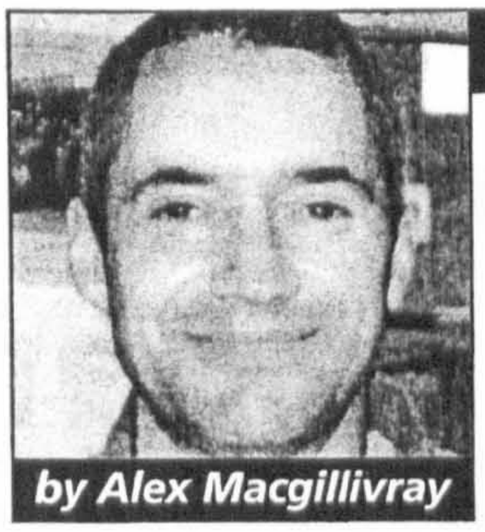
Business, NGOs and the government should also:

- INVEST a share of its new economy windfalls — for example, from the auctioning of spectrum licenses — into a social venture fund for projects which use internet technologies to promote social cohesion and improve quality of life.
- HELP develop of the world's first 'ecobot' — a search engine capable of locating products and services on the basis of their environmental or ethical performance.
- HELP e-tailers share storage and distribution facilities to reduce the demand for warehouse space and cut unnecessary van movements.
- DEVELOP the idea of t-commerce, using time banks, that reward people for their efforts in the community with a time-based currency that help them get what they need.

Project co-ordinator James Wilsdon said: "Unlike traditional sectors, e-business is uniquely well-placed to incorporate environmental and social concerns at the design stage. With a mixture of vision, imagination and intelligent policy, it should be possible to splice sustainability into the DNA of the digital economy."

www.digitalfutures.org.uk

E-commerce will only exacerbate social inequalities unless we start thinking laterally, says Alex Macgillivray



by Alex Macgillivray

THE CRUNCH QUESTION: IS E-COMMERCE SUSTAINABLE?

Every cloud has a silicon lining

REMEMBER the 20th Century? It was just two years ago that we asked *News from the New Economy* readers whether they ever used the internet. Less than one in five readers did. At that time, the New Economy still meant a socially just, human-scale and ecologically sustainable system.

Last week, opinion poll boffins predicted that over half the UK population will be 'surfing' by the general election next year. Ordinary people will soon be spending an average of an hour a day chatting, playing, studying, dating, shopping and selling in the new economy. Great news for computer makers, phone companies, white van drivers and the UK's very dynamic computer games makers.

The government's grandiose-sounding but actually quite approachable Office of the E-Envoy has set itself the goal of ensuring that everyone in the UK who wants it will have easy, affordable access to the internet, leading to significant levels of use, by 2005. If you're not already wired up via a home computer, digital TV or mobile phone, then you will be able to surf at work or in a local UK online centre - a new network of 6,000 e-soup kitchens for the internet-deprived.

Admittedly, a stubborn or unfortunate minority will not 'want' access: mainly well-to-do and elderly people, those disbarred by law or extreme disability, and people who are grindingly poor. But if Tony Blair has his way, the vast majority will be able to surf. The dreaded 'digital divide' will have been largely bridged.

So what will be the impact? E-commerce seems promising enough in theory, if a little dull in practice - all those goods and services changing hands over the internet should bring down prices and enhance choices for poor people as well as rich. Comfortable Middle England is already beginning to reap the undoubted benefits of e-commerce: getting discounts on utility bills, higher interest rates on savings, having stuff delivered instead of having to tramp around the shops. But NEF's research team was quick to warn of a 'dark side to the web' *(NE, January 2000 and Guardian, February 2000)*. Since then, we have been hard at work - with people from think-tanks, business and government - on a major project called Digital Futures, due for launch next March.

"Most existing websites are a bit like Leonardo da Vinci's helicopter: clever enough, nicely drawn, but you wouldn't want to fly in it . . ."

AS A RULE of thumb, the more delayed a government white paper, the less interesting it turns out to be. But the much-delayed national strategy for neighbourhood renewal coming out early next year will show that one of the main problems faced by poor communities is that there are simply not enough local shops to keep money flowing. Eight shops a day close down every day in poor communities.

The worry is that e-commerce will speed this trend as amazon, cd-now and Tesco direct drive out local bookshops, music shops and corner shops. And local manufacturers will also find it hard to compete against an increasingly cut-throat global market working through internet auctions.

The result? Money will haemorrhage out of local economies faster than it can be pumped in by government grants and bank loans.

But the future is not all black. According to management guru C. K. Prahalad, poor communities actually constitute a fabulous new market opportunity for the enterprising lateral thinker - maybe ten million people in the UK and hundreds of millions in countries like India, China and Mexico.

LAST week, I w brainstorming with a lar group of business peop about exactly how we cou cater to this apparently unlucrative b undoubtedly substantial potent market. Most existing websites are bit like Leonardo da Vinc helicopter: clever enough, nice drawn, but you wouldn't want to fly it.

If poor communities are to anything out of e-commerce, we ne a new breed of e-surrealists. Or lateral thinkers like Salvador Dali c create completely new networks people - like the website that sho real letters of endorsement fr customers of local builders - and th match them up with wacky new for of currency, like the time banks t NEF is helping set up across Lond or the barter schemes springing up websites in the USA. Our forthcom report will showcase some of the m exciting ideas for matching networks and currencies to ben local communities. Watch this spac

● *Alex Macgillivray is dep director of NEF.*

Environmental Images/R Roberts

Four leading retailers have secured an 80% levy discount for the energy consumed in their bakeries

target makes no allowance for greater use of recycled cullet and "emerging technologies".

Although the food and drink industry's CCA has yet to be published, details on Customs & Excise's website reveal that Asda, Safeway, Sainsbury's and Tesco have negotiated separate agreements covering more than 1,500 of their stores.

This is perhaps the most perverse effect of the Government's use of IPPC as the starting-point for the agreements. The supermarkets' stores have qualified where they have in-house bakeries. Although bakeries are only regulated under IPPC if they have a capacity of over 300 tonnes per day, the Government had to disregard this threshold for the purpose of the CCAs to avoid prejudicing the competitiveness of smaller bakeries.

The four retailers will benefit from an 80% levy discount only on the energy consumed by their bakeries – typically 10-20% of their stores' total consumption. Nevertheless, the deals are likely to intensify the anger of genuinely energy-intensive busine which have not qualified for CCAs – especially those which fall side IPPC because they have invested in cleaner processes those operated by competitors in the same sector.

Another two elements of the levy package are still awaited A list of some 1,200 technologies qualifying for enhanced tal allowances is due to be published in April, some five mo late. Ministers have blamed the delay on the Commission's ness in clearing the scheme.

The delay will save the Treasury a tidy £40 million. It expected the scheme to use up £100 million of the levy rever next year because companies would have been able to c allowances for investments made between December and Ma The projected cost is now £70 million in 2001/02 and £130 mi - £10 million less than originally budgeted – the following year

An announcement on the rules for the UK's greenhouse emissions trading scheme is expected in April – although it c fall foul of the general election.

A further element of the levy package, the Carbon Trust, formally launched on 20 March. The Trust will supervise the cation of funds from the levy into R&D in low-carbon technol and energy advisory services for business.

The Trust's exact funding is somewhat obscure, thanks to flicting official announcements – including one on 20 March wh claimed it will "make available up to £200 million over the next years." Its actual budget over three years is thought to be aro £80 million, plus some transfer of funds from the existing ene efficiency advisory programme.

The Trust's Chairman, Ford's Chairman Ian McAllister, c mented on 20 March: "The Trust will take us down the road low carbon economy. It will develop new low carbon technolo and get them onto the market...And we will exploit the UK's l in the world's financial markets to find new ways of financ investment in low carbon technologies. Now is the time for business to show its commitment and to capitalise on the bene a low carbon economy can bring."

Dot.coms dodge green issues as study points to uncertain impacts

ONLY A TINY MINORITY of e-businesses have environmental policies or systems, according to a survey for the "Digital Futures" project which concluded in March. Broadly positive messages from the project have been coloured by sceptical comments from Ministers and a warning that increased consumption and unsustainable transport patterns may offset environmental gains.

Patricia Hewitt, Minister for E-commerce, launched Digital Futures last year to investigate the environmental and social impacts of the "new economy". The project, involving eight think tanks as well as central and local government, was co-ordinated by Forum for the Future (ENDS Report 301, p 22).

It was sponsored by several businesses with IT interests, including Ericsson, Sun Microsystems, AOL, BT and amazon.com. The work concluded in March with a conference and a report.[1] While the summary report paints a rosy picture of the potential for e-business to contribute to sustainable development and this was echoed at the conference, some speakers advised caution.

As part of the project, Forum for the Future (FfF) questioned around 100 e-businesses on their environmental and social policies and systems. While over two-thirds of dot.coms believe these issues to be important to their business, 79% were found to be doing nothing to measure or manage their environmental impacts, and 83% provided no staff training on environmental issues. O 18% of companies did anything to manage transport impacts.

Environment Minister Michael Meacher described these fi ings as "disappointing" and urged e-businesses to do mo "Frankly, I do not think this is good enough. I would expect mo Society would expect more. Perhaps more relevantly, many your customers would expect more," he told the conference.

James Wilsdon of FfF said the "myth" that dot.coms have a l ited impact on the environment is the main obstacle to their tak the issues on board. Around three-quarters of the firms clain they had no significant environmental impacts, while over half s they had neither the time nor expertise to deal with the issues.

Digital Futures concluded that e-businesses have numer environmental impacts and must face up to them if the envir mental dividends of the new economy are to be realised. Hewitt told the conference that the environmental gains had ye appear. "The paperless office has proved to be something o myth and a fruitless goal," she noted.

Dematerialisation: One of the grander claims for the n economy is that it can lead to more efficient use of energy resources as products become smarter and services replace ph ical products. Charles Leadbeater of Demos, one of the pro partners, claimed that the new economy "generates more va

than the industrial economy and uses less energy and fewer materials per unit output."

He pointed out that "e-tailer" amazon.com uses 15 times less energy per book than a conventional bookstore – while internet banking dispenses with the need for a network of high street branches with their own energy demands and cuts out customer journeys. More dramatically, physical goods can be entirely replaced by virtual products – emails instead of letters, MP3 music files instead of CDs, on-line publishing instead of newspapers – leading to massive savings in materials and transport.

But Ms Hewitt poured cold water on some of these claims: "The myth of dematerialisation must not blind us to the fact that we have a growing problem with waste."

One of the big problems identified by Digital Futures is that as prices fall, society will consume more, thereby offsetting environmental gains. What's more, the pace of technological advance means that products quickly become obsolete and need to be replaced. Computers double their processing power every 18 months, and one built five years ago is now next to worthless.

Mr Meacher also picked up on the point: "Already, it often makes more sense to throw an appliance away rather than pay to get it repaired," he said. "Reducing even further the cost of making and selling goods – which e-commerce is likely to do – while labour costs steadily increase isn't much of a contribution to sustainable development."

- **Transport:** E-commerce has the potential to improve logistics and cut transport emissions as one van replaces multiple shopping trips. Professor Peter James of Bradford University thinks that even greater savings can be had upstream in helping businesses improve supply chain logistics. Improved communication and inventory tracking will enable businesses to match products to customers and cut down on waste.

But there are worrying signs that e-commerce could have negative transport impacts. The move to just-in-time deliveries, which has been accelerated by e-commerce, could lead to a rise in both light goods vehicle movements – particularly in residential areas – and air freight. Meanwhile, the global character of e-business will stretch supply chains, and goods will travel further.

Mr Meacher raised the spectre of "suburban streets filled with half-empty white vans" while customers make use of their freed-up time to make leisure trips, further clogging the system.

Digital Futures suggests that internet taxes should be skewed towards rewarding environmentally beneficial technologies such as virtualisation. It also suggests imposing controls on freight movements in residential areas, and taxing aviation fuel.

Combating the problem of waste could be dealt with, according to Mr Leadbeater, by switching to leasing goods rather than ownership. Electronic goods should be made easy to repair or upgrade so that technological advances do not require completely new hardware. The Government is also urged to set stringent energy efficiency standards for electronic goods.

- The new US Energy Secretary, Spencer Abraham, placed the resource efficiency claims for the new economy in an interesting perspective in a major speech in March.

During the 1990s, he said, US electricity consumption "far outstripped projections, driven by the energy-hungry information economy. Some experts calculate that the demands of the Internet already consume some 8-13% of electricity. If demand grows at just the same pace as during the last decade, we'll need nearly 1,900 new [power] plants by 2020."

Other experts have concluded that the electricity demands of the internet are more like 2% in the US. But with friends like Mr Abraham, IT companies will rapidly find themselves needing to justify their impacts on sustainability.

More information at www.digitalfutures.org.uk

Slow start for corporate commitment campaign

THE GOVERNMENT'S revamped "making a corporate commitment" campaign, MACC2, had attracted only 30 signatories by March, but Ministers are now planning to drum up further support.

MACC2, launched last June, challenges 7,000 organisations with more than 250 employees to set targets to improve environmental performance and report on them publicly. It replaced the original MACC initiative, on energy efficiency, which had attracted 2,000 signatories but failed to ensure they honoured their commitments (ENDS Reports 274, pp 7-8 and 305, p 8).

Companies signing up to MACC2 must commit themselves to improving performance in at least one of three key areas: greenhouse emissions, waste production and water use. It also encourages signatories to cut back on resource use, address other emissions and set biodiversity and transport plans.

Nine months since its launch, uptake is poor. Just 30 organisations have signed up, 11 of which are public bodies (see box).

Jayn Harding, environment manager at Sainsbury's, which signed up in November, is not surprised at the slow start: "The hoop you've got to jump through is higher," she explained. "You've got to sign up to hard targets and quantified reductions. It's more demanding."

In Ms Harding's eyes, this is a strength. "It might be harder, but it's more credible, which is good because that's where environmental management should be," she said.

She thinks that companies taking part will find it worthwhile, and will benefit from the opportunity to share best practice and benchmark performance against their peers.

Though urging the Government to push the scheme harder, Ms Harding thinks that uptake will grow: "There are lots of companies with environmental reports with quantified targets in them, so there are plenty out there who could sign up."

Environment Minister Michael Meacher is hoping to boost uptake of the scheme by writing to some 7,000 eligible organisations over the coming weeks. His officials are also looking to work with trade associations and sector leaders to encourage firms to sign up.

A Department of Trade and Industry report on corporate social responsibility (CSR), published in March, presents case studies on eco-efficiency and environmental reporting. It gives examples of how companies can increase competitiveness, enhance their reputation and improve efficiency. The report is also supported by a website.[2]

Barclays
Boosey and Hawkes
British Airways
British Telecommunications
Claverham
Corporation of London
Department of the Environment, Transport and the Regions
Doncaster Royal Infirmary and Montagu NHS Trust
Financial Services Authority
Horsham District Council
Government Office for London
Land Securities
Legal and General
London Borough of Southwark
London Electric
Mendip District Council
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RJB Mining
Rio Tinto
Rolls Royce Naval Marine Operations
Safeway
Sainsbury's
Scott Bader Company
Tinsley Wire
Uniq
Universal Music Operations
Woolwich
Yorkshire Building Society

[1] *www.macc2.org.uk*
[2] *www.societyandbusiness.gov.uk*

Guardian Online – 1 March 2001

Digital Future

Second sight

Roger Cowe

The New Economy is widely assumed to be intrinsically "good", in contrast to the Old Economy, which was all about making money and leaving the planet in a mess.

It is easy to see where such ideas come from, but this is a dangerous assumption. Mines, steel mills and the classic elements of the Old Economy conjure up images of environmental degradation and oppressive labour conditions, while dematerialisation obviously consumes fewer physical resources.

The danger in equating the New Economy with a better economy lies in the assumption that this will be inevitable — and therefore requires little thought or action on behalf of government, business or consumers.

That is not the case, as a year-long study reports today. The Digital Futures project, managed by Forum for the Future, brought together think-tanks such as Demos and the New Economics Foundation to study the social and environmental implications of electronic commerce. Their conclusions are launched today at a conference in London and in a book* detailing the analysis.

Their research revealed the extent of New Economy complacency. Of 150 businesses, large and small, two-thirds said that social and environmental issues were important to them, four out of five believed the positive effects of e-commerce on society would outweigh the negative, the ratio of positive to negative statements on environmental impacts was more than four to one, and almost two-thirds agreed that e-commerce would enable companies to be more responsive to ethical and environmental concerns.

So what's the problem? The same people then admitted they were doing little to make it happen: four in five companies do nothing to measure or manage their environmental impacts. Two-thirds do nothing to measure or manage social impacts. Four out of five do nothing to measure or manage transport impacts, or offer staff training on environmental or social issues.

This alarming gap prompted the Digital Futures team to pose a few infrequently asked questions; why global e-businesses would necessarily be more socially and environmentally responsible than traditional ones; whether connecting everybody to the net would help bind society or tear it apart; what transport patterns would look like in an e-tail economy; and whether there was any chance of long-term thinking in a society working to ever shorter timescales.

Most answers were inconclusive, and that is important. The shape and impact of the e-conomy are not inevitable and will not be determined by technology. They will depend on decisions taken by governments and institutions, the actions of businesses and other organisations, and how consumers react.

Take the question of the digital divide. Connecting everybody to the net will not of itself attack inequality and exclusion. There are clear dangers that the e-conomy will widen divisions. It is concentrated in an area bordered by London, Cambridge, Birmingham and Bristol. E-businesses look first for consumers among the affluent. The ability to trade efficiently over long distances threatens local economies.

A similar scenario can be painted for the environment. More international purchasing means more airfreight. Remote shopping could result in streets clogged by retailers' delivery vans and their exhaust fumes, while consumers make more adventurous shopping trips.

E-commerce does not even mean that consumers will be empowered. The growth of auction sites and price-oriented search engines could make it difficult even for concerned consumers to understand the social and environmental implications of their purchases. This is not to say that e-commerce will be bad for society, just that it could be. There are opportunities to tilt the balance towards the positive, but they need to be grasped.

Government needs to embrace social and environmental aspects in its e-strategy rather than treating sustainability separately. This could include boosting the role of post offices as hubs of local economies, requiring regional development agencies to help create local electronic markets, and stimulating consumer awareness.

Business can do plenty— search engines could help identify products according to social and environmental criteria rather than merely price; co-operation on distribution can avoid the plethora of delivery vans. The new economy can be cleaner, greener and more inclusive, but only if it is made so. If not, it could accentuate the worst characteristics of the old.

**Digital Futures: living in a dot-com world (Earthscan, March 2001).*

A1

dotcom.telegraph – 1 March 2001

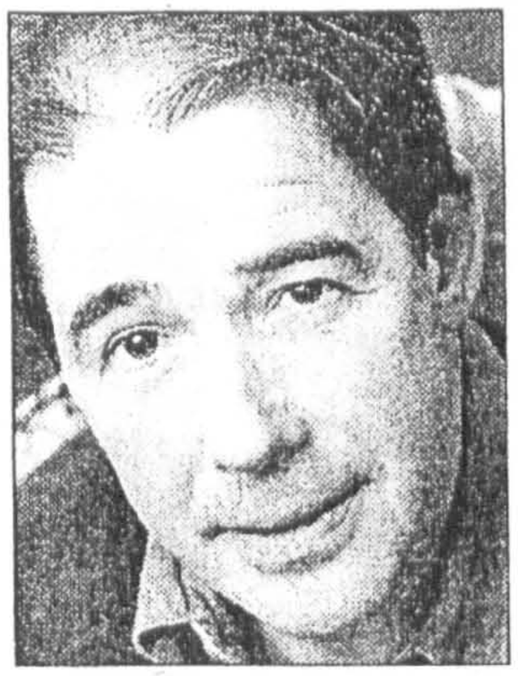
personalview

We've heard a lot about the wizardry of e-commerce but at least one aspect of digital business remains strangely untouched by the revolutionary hand of the internet. There has been a deafening silence about the relationship between e-commerce and corporate environmental and social responsibility.

By ignoring these issues, e-business is marching in the opposite direction to the rest of the corporate world. It is widely acknowledged that companies have to meet a broader range of social and environmental expectations than in the past. If they don't, governments, the media, pressure groups and consumers can make them pay a high price in lost business and lost reputation. Dotcoms face many of the same dilemmas over ethics, supply chains, energy use, transport and waste as their "bricks and mortar" counterparts.

Some will argue that e-commerce should simply focus on profit and growth, and leave the politicians to deal with the bigger questions. This view ignores some of the threats posed by the explosion in e-commerce. More importantly, it neglects the opportunities that could be created if e-business thinks seriously about sustainability, because that is what its customers will increasingly look for.

As e-commerce takes off and starts to have a more visible impact on communities, jobs, transport and the environment, these companies will need to demonstrate that they are creating more than just economic value. Currently, many e-businesses are flying blind with few of the ethical policies and systems that are required. How long before a dotcom gets hit by a sweatshop



scandal, similar to those recently faced by Nike and Gap? Pressure groups are extremely adept at using the internet, and dotcoms are more vulnerable than most to new forms of online campaigning.

There are real opportunities too. Unlike sectors such as oil and chemicals, which have had to retro-fit social and environmental concerns in response to stakeholder pressure, e-business is uniquely well placed to incorporate them at the design stage. Young, fast-changing companies can adapt far more easily. With a mixture of vision and imagination, it should be possible to stitch social and environmental responsibility into the DNA of the new economy.

Last February, we set up the Digital Futures project. Over the past year, three government departments, eight think tanks and fourteen companies have worked together to better understand these opportunities. Today we launch the project's final report which offers an agenda for action by government and business in the quest for a more sustainable digital economy.

The findings are not all easy to swallow for the e-business community. There is a lot of work to do if the new economy is to avoid the mistakes of the old. As Tim Jackson, founder of the auction site QXL, put it recently: "Now that we realise e-commerce isn't a passport to untold riches, it's about time we gave some thought to something other than money." He is right. If internet businesses are still to be with us 10 or 20 years from now, they are going to have to prove their worth to society in more than purely economic terms.

A lot will rely on new forms of innovation. Using the latest technologies, progressive dotcoms could leapfrog the old economy world of dull, two-dimensional reports, and set new standards for real-time, multimedia reporting and stakeholder dialogue. E-tailers should share storage and distribution facilities to reduce the demand for warehouse space and cut unnecessary van movements.

Government has a role to play too. It should invest a share of its new economy windfalls – for example, from spectrum licences – into funds for projects which use internet technologies to promote social cohesion and improve quality of life. Government has pledged "to make the UK the best environment in the world for e-commerce". As part of its commitment to environmental sustainability, it should set an additional target "to make UK e-commerce the best in the world for the environment."

Jonathon Porritt is programme director of Forum for the Future. The Digital Futures report can be downloaded for free at www.digitalfutures.org.uk

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Make it better or don't make it

To survive in the new economy, businesses must show how they enhance our lives, argues **James Wilsdon**

It was like a carefully planned military operation. At strategic locations across the United States, a fleet of 9,000 trucks revved their engines and 100 planes rolled down runways. Their mission: to deliver *Harry Potter and the Goblet of Fire* to a nation hungry for instant fulfilment.

It sounds crazy, but it happened. In July, Amazon.com teamed up with Federal Express to deliver 250,000 copies of the Harry Potter book to eager US fans. True to the spirit of one-click shopping, no effort was spared in ensuring the book hit people's doormats on publication day.

Over the past year, we have heard a lot about the wizardry of e-commerce. But remarkably little has been said about the wider impacts on society of the e-revolution. How will it affect jobs and local communities? What will it mean for the environment — for energy use, transport and the future shape of our cities? How do we ensure that we all enjoy the benefits of digital technologies?

Take Harry Potter. Individually wrapping 250,000 books and express freighting them overnight is about the most environmentally unfriendly method of distribution imaginable. It seems likely that it not only set a new record for e-commerce delivery, but also for the quantity of greenhouse gases and packaging waste generated by a single novel.

Change is happening so fast in the digital economy that it is increasingly hard for researchers and policy-makers to keep pace. Our Digital Futures project has tried to stand aside from the herd tendency of internet oversell to take a hard look at the impacts and opportunities of the digital economy. A consortium of three government departments, eight think-tanks and 14 companies has spent a year exploring particular pieces of the internet and sustainability jigsaw — from local communities and social exclusion, through to energy use, planning and transport.

This month, we publish a book that outlines an agenda for a sustainable digital economy aimed at government, business and the research community.

The most important conclusions to emerge from our research are that the worst thing we can do is to worship unthinkingly at the altar of the digital god, and that there is a lot more work and research needed if we are to make the economy cleaner, greener and more socially inclusive.

But there are real opportunities. Unlike sectors such as oil and chemicals, which have had to retro-fit social and environmental concerns in response to stakeholder pressure, e-business is uniquely placed to incorporate them at the design stage. Young, fast-changing companies can adapt more easily than those trapped in established mindsets.

As Tim Jackson, the founder of QXL, has said: "Now that we realise e-commerce is not a passport to untold riches, it is time we gave some thought to something other than money."

He is right. If internet businesses are to be with us in ten to 15 years, they are going to have to prove their worth. There is no better way for them to do this than to embrace the social and environmental agenda. If companies can demonstrate that they contribute to improvements in our quality of life, they stand a much better chance of survival.

Taking up this challenge requires creativity, innovation and alliance-building. It requires us to think differently. But this is what e-businesses are good at. We need to channel their dynamism and creativity for the benefit of all — to turn the new economy into a force not just for economic good, but for social and environmental good, too.

James Wilsdon is senior policy adviser at the think-tank Forum for the Future and editor of *Digital Futures: Living in a Dot-com World*, published by Earthscan this week.

Treasury windfalls could fund £1bn internet plan

by Susan Downer

A £1bn social venture fund to harness the internet for communities should be set up using Treasury windfalls from the sale of communications licences, ministers have been told.

The proposal comes in a DTI-funded study by think-tank Forum for the Future, which claims that the e-economy could become 'a powerful vehicle for regional sustainability, opening up opportunities for marginalised areas and communities'.

Treasury windfalls such as the £23bn received from auctioning third-generation mobile phone licences should be used to support local electronic markets in which small retailers sell goods and services online and cash is generated for the local economy, the study argues.

This approach would encompass ideas such as guaranteed electronic markets (Gems) – vast networks of local exchange that bring informal skills and assets into the mainstream economy with a guarantee of insurance cover for buyers and sellers.

The study, which brought together government departments, think-tanks and private companies, says regional development agencies should take a lead role in fostering local 'e-markets' and experimenting with new models. The government and quangos are urged to involve venture capitalists in encouraging social and environmental entrepreneurship, and to create incentives for supporting sustainable ideas.

Report author James Wilsdon, senior policy adviser at Forum for the Future, said: 'We need to channel the dynamism and creativity [of e-business] for the benefit of all: to turn the new economy into a force not just for economic good, but for social and environmental good too.'

With the right encouragement from government, regional development agencies and local authorities, the internet could enable people on low incomes to barter goods, services or time, cut traffic congestion through 'virtual commuting', overcome local digital divides and promote social cohesion, the study claims.

But it found that the benefits of the digital economy are spread very unevenly, with a deep north-south divide and local variations.

Policies such as clustering make matters worse by starving some areas and over-feeding others, such as Cambridge and the Thames Valley.

Lessons from the project will be applied throughout Europe with the help of a £1m Digital Europe project.

Digital futures, Littlehampton Book Services, tel: 01903 828800, price £19.99. Summary at www.digitalfutures.org.uk

PHOTO: IAIN SHARP

Tea for two: Rebecca Stewart, 5, entertains Nicol Stephen, the Scottish Executive's deputy minister for education, Europe and external affairs during his visit to the West Pilton Neighbourhood Centre last week, to mark the launch of the first local children's plan for Edinburgh. The plan aims to ensure that policy, resources and services for children and their families will be led by the local community in north Edinburgh. Quality, partnership, collaboration and inclusion are its watchwords.

Ebusinesses will be forced to prove they're eco-friendly

UK environment minister Michael Meacher is threatening to force high-tech firms to produce annual environmental reports, unless companies take responsibility for the effects of energy use, transport and waste disposal.

Speaking to silicon.com at the launch of a year long research report yesterday, the environment minister claimed high-tech firms and dot-coms are shirking their environmental and social responsibilities.

According to Meacher, very few small and medium-sized companies produce an annual report detailing environmental impact. "If that doesn't improve I will have to consider mandatory reporting," he said.

"This isn't meant to be a burden on business, it will enable them to realise better the impact their products are having and almost certainly to save money in the process," Meacher added.

The Digital Futures report is the result of a collaboration between the Forum for the Future, the DTI, the DETR, think-tank Demos and the Cabinet Office. It claims technology companies are failing to measure their impact on the community and are missing a valuable opportunity to make UK industry more sustainable.

Jonathon Porritt, programme director for Forum for the Future, claimed sustainability is an extremely simple concept. "It's basically wealth creation without the social and environmental costs," he said.

"Theoretically, the new economy ought to be a great driver of environmental improvement, increased efficiency and social inclusion" he said. "But these ideas aren't deeply embedded in new economy entrepreneurs.

"They don't really engage, so we're missing the opportunity to make the new economy an engine of social and environmental change."

The report was welcomed by Shanker Trivedi, VP of Sun Microsystems UK and Ireland, who added that high-tech companies are ideally placed to develop new processes, instead of being dragged down by traditional business models.

Backed by EC funding, Forum for the Future will now widen its research project to include the European Union. The problem it faces now is how to translate its findings into practical solutions for business.

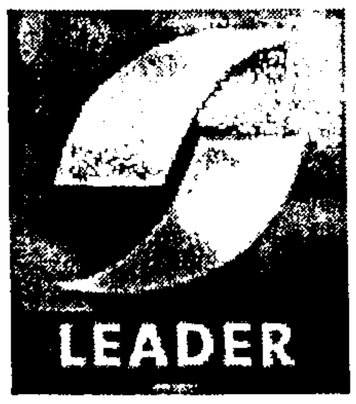
For more information on Digital Futures, see:
www.digitalfutures.org.uk

E1

Friday 2nd March 2001 4:00pm

Environmentalism: the next challenge for high-tech firms

Should ebusiness be taking responsibility for the social and environmental well-being of the world at large?



The digital divide has always been a contentious subject - but there are other issues at stake. How do mobile, internet and other technology companies impact transport use, energy efficiency and water consumption?

Traditionally pollution and social impact have always been the reserve of the big, traditional firms. Monsanto, Nike and Shell have been the focus of campaigner anger.

But that focus may be beginning to shift.

Virtual companies have always been cocooned away from real world issues. But it doesn't take too many think tanks to realise they have an immense impact on the world around them.

How many 24-hour home delivery services will it take before local streets are piled high with half-filled white vans? How much more energy will need to be produced to power a PC, mobile and PDA for everyone in the western world?

When amazon.com promised to deliver the latest Harry Potter novel on the day of publication to 250,000 avid American fans it used 100 FedEx flights, 9,000 delivery personnel and vehicles from 700 distribution centers. And it was proud of the fact.

If electrical equipment goes wrong it already makes more sense to throw it away and buy something new rather than go through the hassle of getting it repaired.

This week's Digital Futures report throws down the gauntlet to the technology industry: can technology deliver not just economic prosperity but also social and environmental wealth?

The problems are nothing new and they haven't been created by technology. But high-tech firms have a chance to make a difference from a very early stage. They don't need to play catch-up like the manufacturers and industrialists of the past.

Technology isn't an excuse to ignore the real world. It's a way to make it better.

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Get online and learn to be green

On the internet, you can read without harming a tree. But you can also order a dirty great van to deliver more books. By **Charles Leadbeater** and **Rebecca Willis**

Shawn Fanning, the twentysomething renegade founder of Napster, is an unlikely environmental hero. Napster, the online music community, uses a simple yet powerful software programme that allows a computer user, armed with a modem, to download music files from someone else's computer.

This technology may seem to have nothing to do with climate change or pollution. Yet if the entire music industry were to embrace Napster-style technology, we would have no need of compact discs, tapes and all their materials, packaging and transport. Fanning turns out to be not just a techno-entrepreneur but, unintentionally, an environmental entrepreneur, too.

The new economy holds out a tantalising promise for environmentalists. It's not just the promise of dematerialisation (though replacing millions of 30-volume leather-bound *Encyclopaedia Britannica* sets with one website is quite an achievement in environmental terms); it is also that the new economy can make us think differently, value differently and consume differently.

Take valuation. We still find it hard to value a company that is not based on physical assets. Accounting systems measure the throughput of resources, not the ideas, creativity and innovation that really drive the value of most companies these days. The new economy may also change the way we think about ownership. In the old industrial economy, ownership of physical products and assets was essential. Owning a car or stereo was a badge of honour for young people. In the new economy, consumers will value experiences: getting a high, feeling special or, as the American futurist James Ogilvy put it, "trading in what makes the heart beat faster". Companies, too, are shying away from ownership – the new economy maxim for fixed assets such as land, offices, computers and machinery is "use it, don't own it". In the US, about a third of business machines, equipment and vehicles are leased.

All this could result in significant environmental gains. Leasing gives producers ultimate responsibility for a product, including its disposal at the end of its life. So they have the incentive to make the product robust, durable and recyclable. And, in an economy in which competitiveness turns on innovation, the opportunities to design new production systems that use fewer materials and energy have never been greater: think of the Dyson vacuum ▶

▶ cleaner, designed for easier consumer use, but also to be recycled.

So is the new economy a green economy? Alas, not always. Fanning may yet abolish CDs, but to use Napster you still need a computer, which uses resources and energy. We all know people who print out their e-mails, instantly cancelling out any environmental benefits of virtual communication. Amazon.com may appear ethereal when you log on to buy your books; but it is in the real world of pollution and congestion when the van delivers them.

Then there is the new economy's propensity to increase consumption. Increased efficiency means reduced prices, which means more consumption. The accelerating rate of product innovation, along with ceaseless advertising, creates constant demand for the newer version of computers, hi-fis and MP3 players.

We need a public policy that encourages innovation to take a greener form. Policy has focused on capping the environmental costs of the old industrial economy; in future, we need to unleash the potential for green innovation. That means encouraging research into technologies, such as solar power, which could be both more efficient and more green. We should create incubators for green businesses, even schools for environmental entrepreneurs. Nowhere is collaborative innovation needed more than in city transport, to combine electronic vehicles and intelligent road-pricing systems with simple initiatives to create more cycle lanes and pedestrianised areas.

There are signs of a new coalition developing between greens who recognise that protest alone will not bring change, responsible businesses that recognise they have to respond to the green agenda, and a new generation of innovators who buy into environmental values. This coalition will, in time, find its voice heard among a new generation of political leaders who are able to embrace environmental goals within mainstream politics.

We are not entering a promised land in which the interests of business and profit can be magically reconciled with the interests of the natural world. But there is an opportunity that did not exist 30 years ago.

Charles Leadbeater's pamphlet Mind over Matter: greening the new economy *is published by Green Alliance. Rebecca Willis is the alliance's policy adviser. More at www.green-alliance.org.uk*

THE INDUSTRY STANDARD EUROPE
8 MARCH 2000
THE NEWSMAGAZINE OF THE INTERNET ECONOMY WWW.THESTANDARD.COM/EUROPE EVERY THURSDAY £1.

STONE ME

WHY THE HELL AM I READING ABOUT...

The dotcom Ten Commandments?

THE DOTCOM WORLD'S tablets of stone have just been issued by the UK's Digital Futures project. For the past year, three government departments, eight think tanks and 14 companies have been debating the social and environmental responsibilities of new economy businesses.

They conclude there should be more e's in e-commerce: like "environment" – using new technologies to reduce our impact on the natural world; and "equity" – the potential for the Internet to strengthen communities and build social cohesion. A book and a Web site (www.digitalfutures.org.uk) have been produced.

The 10 dot-commandments amount to a menu for a sustainable Net economy. First off, the government is urged to make sustainable e-commerce a goal of its e-policies and to create a fund for projects that use Net technologies to create social cohesion. Second, it should create sustainable e-regions with virtual commuting and encourage time-based trading that allows people to be rewarded for work in the local community. Third, post offices and village shops should become the nodes of the new economy and fourth, the government should aim to make UK e-commerce the best in the world for the environment.

The fifth commandment deals with e-business creating more efficient distribution systems and the sixth advocates that a new era of corporate transparency and accountability be enabled online. Seven and eight deal with increasing consumer awareness and creating a network of social and environmental e-entrepreneurs.

Nine calls for a Declaration of Co-Dependence by e-business leaders, stating their sustainability credentials. Ten is about the lack of time and short-termism. It calls for a 50-year vision for a sustainable economy and an annual Summit Of The Long Now, where the digerati can see how they're doing.

As Jonathon Porritt, of Forum for the Future, says: "If Web firms are to be with us 20 years from now, they are going to have to prove their worth to society in more than purely economic terms."

BUSINESS MAGAZINE OF THE YEAR

ComputerWeekly

Thursday 8 March 2001 £2.10

Working for IT Professionals

Survey alerts e-businesses to environmental responsibility

Hazel Ward

GOVERNMENT and business must wake up to the impact of the Internet and e-business on society and the environment, a report published last week has warned. If not, they risk exacerbating social exclusion and increasing traffic congestion and pollution.

The report, released by think-tank Forum for the Future, is the product of the year-long Digital Futures inquiry into the effects of e-commerce on society and the environment. The inquiry was launched in February 2000 by e-commerce minister Patricia Hewitt in a bid to understand the social and environmental issues thrown up by businesses using the Internet.

Findings from a survey of 150 IT and dotcom companies showed that, although 65% said social and environmental issues were important to their companies, 79% did nothing to measure or manage their environmental impact and 83% offered no training on environmental or social issues.

The report – Digital Futures: Living in a Dotcom World – issued a series of recommendations for both the Government and business to promote a sustainable digital economy.

The report urges the Government to invest a share of new economy windfalls, such as revenues from the 3G wireless licence auction, into a fund for Internet-enabled projects to further social cohesion and to put money into the creation of an "ecobot" – a search engine for finding goods and services based on their environmental or ethical performance.

Business has a central role to play and must link closely with government to drive sustainability into every area of the new economy, says the report. Companies should share storage and distribution facilities to reduce demand for warehouse space and should cut back on unnecessary van deliveries.

Speaking at the launch, Hewitt said the findings in the report would be invaluable for formulating government policy, particularly on environmental issues.

"Sustainable development and e-commerce should go hand in hand. E-commerce has the potential to bring great environmental and social benefits alongside the already begun to deliver. But if we are to achieve those benefits we need a smarter policy framework," she said.

Environment minister Michael Meacher said, "It came as a real disappointment that 79% of companies did nothing to measure or manage their environmental impacts. Businesses selling goods to consumers via the Internet should think about the distribution systems they use and specify these in a way that will minimise their environmental impact."

Chris Earnshaw, chief technology officer at BT, said, "It is a widely-held myth that IT is benign to the environment but that is just not true. It is actually a significant contributor – both directly and indirectly – to environmental [pollution]. You have to connect technology, productivity and social policy in a way that produces a long-term trend that the world can live with," he said.

Wholesale process changes as a result of the digital revolution are having a big impact on society and it was important to understand that, said James Wilsdon, senior policy adviser at

Hewitt... "We need a smarter policy framework"

"The main thing is not to assume that because you are working in cyberspace, it does not have an impact on the natural world. It is about getting a company to think about the whole life-cycle of a product and what impact that product is having on the environment," he said.

Wilsdon said changes to the business process would be relatively painless because

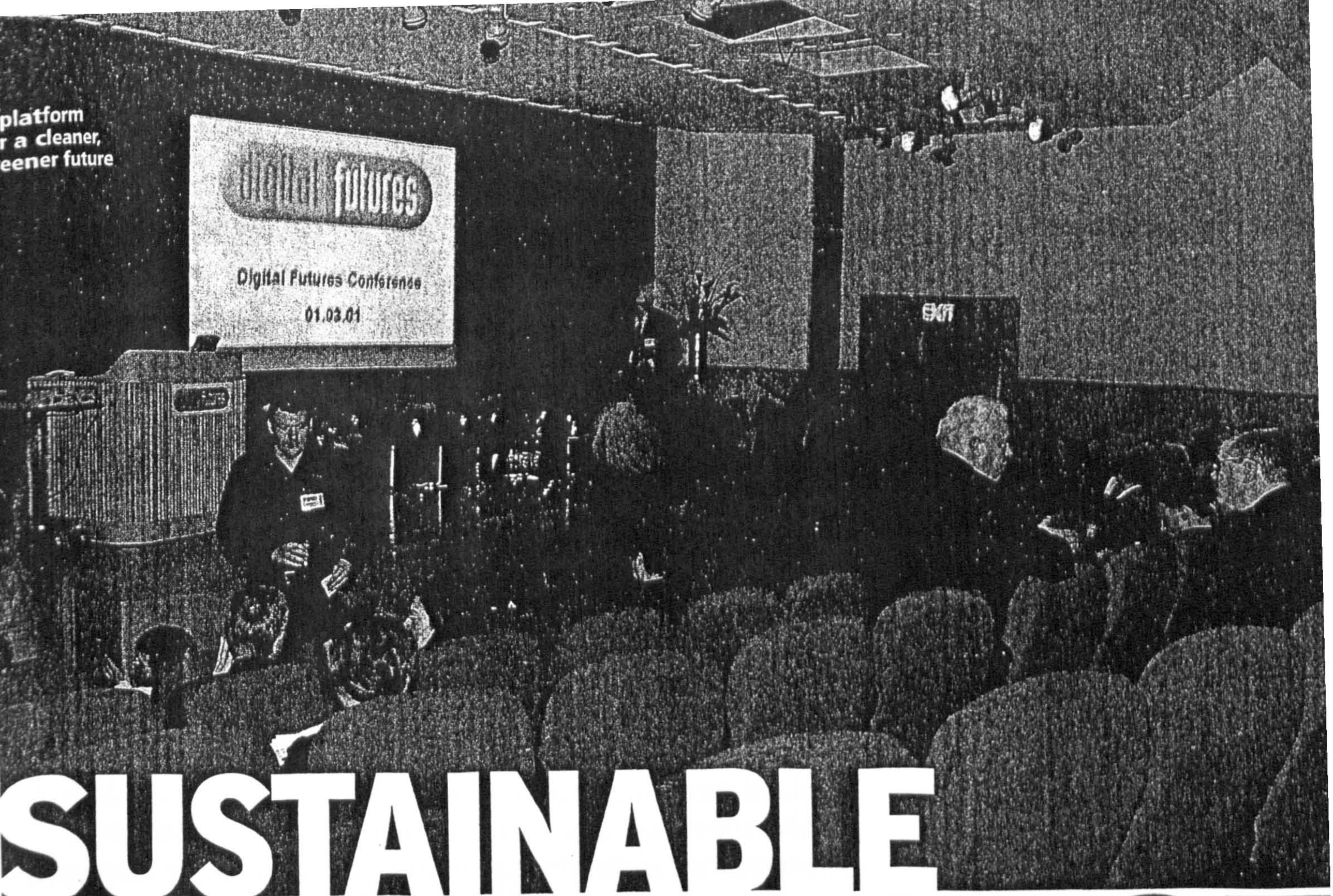
"It does not have to cost a lot. We can build [environmental and social responsibility] into changes that are already being implemented. We just need to make sure that when a company is spending money, this level of change is on the agenda," he said.

According to Helen Osman, from the e-commerce strategy unit at the Department of Trade & Industry, the key challenge was to encourage companies to transform the way they operated. "We are not just talking about the front-end; it is at the back-end stage, taking the environment into account when you are re-engineering your business processes," she said.

Colin Jenkins, e-business adviser to the Greater London Authority, said the necessary changes would take some time but that it would promote greater efficiency within business.

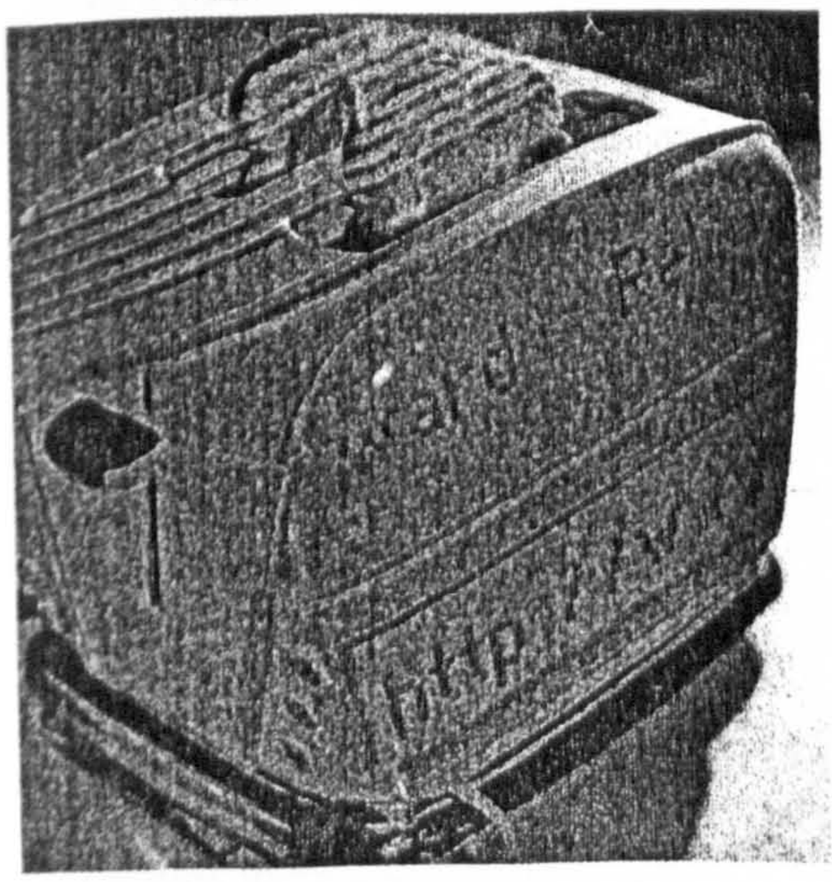
"It is all about value-chain compression. Re-engineering your processes to provide the system in an energy-efficient way means you are making the business more efficient through the manage-

How dotcoms see eco-issues



SUSTAINABLE E-COMMERCE

Digital Futures Conference 200



With its emphasis on knowledge, e-business has the potential to lead the drive to green the economy. But there's still a lot o work to be done BY SOPHIE HOOPER

Having invited speakers ranging from Patricia Hewitt MP and Michael Meacher MP to Martha Lane Fox and Brian Eno, the Digital Futures conference promised some lively debate. It did not disappoint. Digital Futures started in early 2000. A diverse group of government departments, think-tanks and businesses came together to explore the social and environmental implications of the New Economy. Their report, launched at the conference, set out an agenda fo a sustainable digital future that includes research into the digital divide, environmental impacts o e-commerce and corporate social responsibility.

www.digitalfutures.org.uk

There was fierce debate as to whether the Ne Economy will have a positive or negative impac overall. The consensus was that technological developments will not automatically lead to soci and environmental progress, despite the claims a few optimists. After all, technology is just an 'enabler' – individuals decide whether to use it f pornography or eradicating poverty. Whatever choices are made, the market will respond.

MARKETING MORALS

A social conscience could secure the future of your business. Ethics don't just help attract customers, but could bring investors to your door and new opportunities for expansion.

BY ALAN MITCHELL

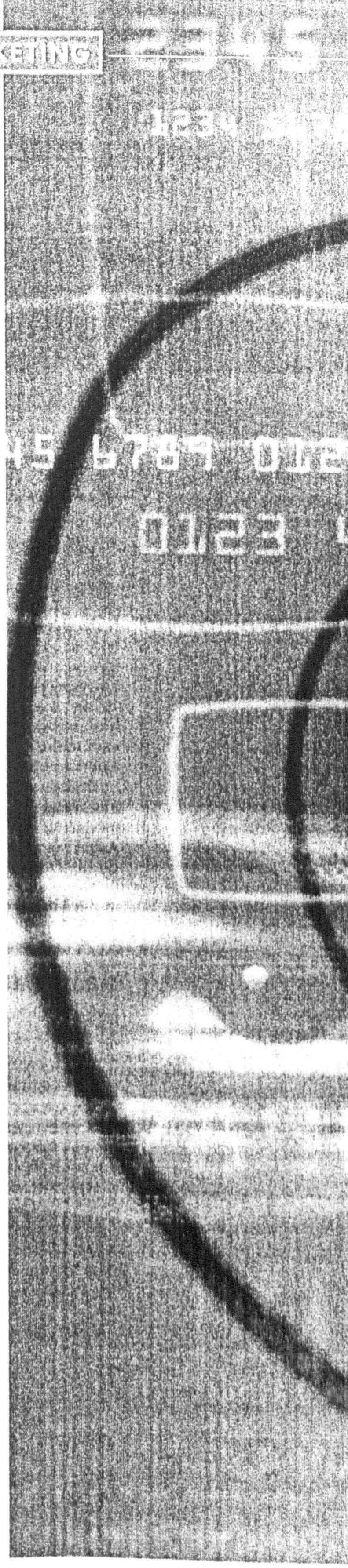
Positive ethics have long been recognised as one of the most powerful marketing tools in the modern world. With a burgeoning focus on the social and environmental responsibilities of developed countries, businesses capable of aligning themselves with the new wave of global conservationism stand to gain a significant advantage.

But a carefully-worded press release won't do the trick. Nor will the complacency of the dot-com world, derived from the mistaken perception that 'virtual companies' are environmentally sound by definition. An increasingly cynical public expects evidence of an ethical approach in business. Ironically, many Old Economy firms have been quicker to learn these lessons than their supposedly more nimble New Economy counterparts.

The importance of an ethical business structure extends beyond marketing a product or service, to courting potential investors. In February, Norwich Union launched an initiative designed to give clients the opportunity to indulge in a little socially responsible investment (SRI) in UK corporate bonds and European equities. Ethical stock broking has traditionally been a niche market, with stocks typically viewed as financially weak. However, Norwich Union's move into shares with a more socially- and environmentally-responsible bent is set to be followed in the summer by Bank Sarasin of Switzerland, which is to launch an SRI international growth fund.

Learning the hard way

It wasn't really an issue a few years back. Of course, there were gripes among pressure groups, but companies like GlaxoSmithKline (GSK) – as it is today – could basically set their prices as they saw fit. Not any longer. For some time now, GSK has been making anti-AIDS drugs like Retrovir and Epivir available in hard-hit areas of Africa at up to 75 percent off the global price. But that wasn't enough for the likes of Oxfam, which was outraged by GSK's decision to use the World Trade Organisation's patent protection rules to take action against governments importing lower-cost versions. Its 'Cut the Cost' campaign had immediate results, as some investors sided with Oxfam. A spokesman for one fund with at least



£1bn invested in GSK said: "If millions of Africans are dying of preventable diseases and one reason is that drug companies are charging too much, you have a serious reputational risk." Less tha a week later GSK had announced a revie of its policies.

Whatever happens now, GSK won't be able to set prices without worrying about their broader social implications. Yesterda the issue was hardly on the radar screen. Today it's centre stage. And, like so many other companies that have been down a similar road, GSK is learning that any misjudgement in this area of 'corporate social responsibility' has a habit of haunti you, big time.

Virtual responsibilities

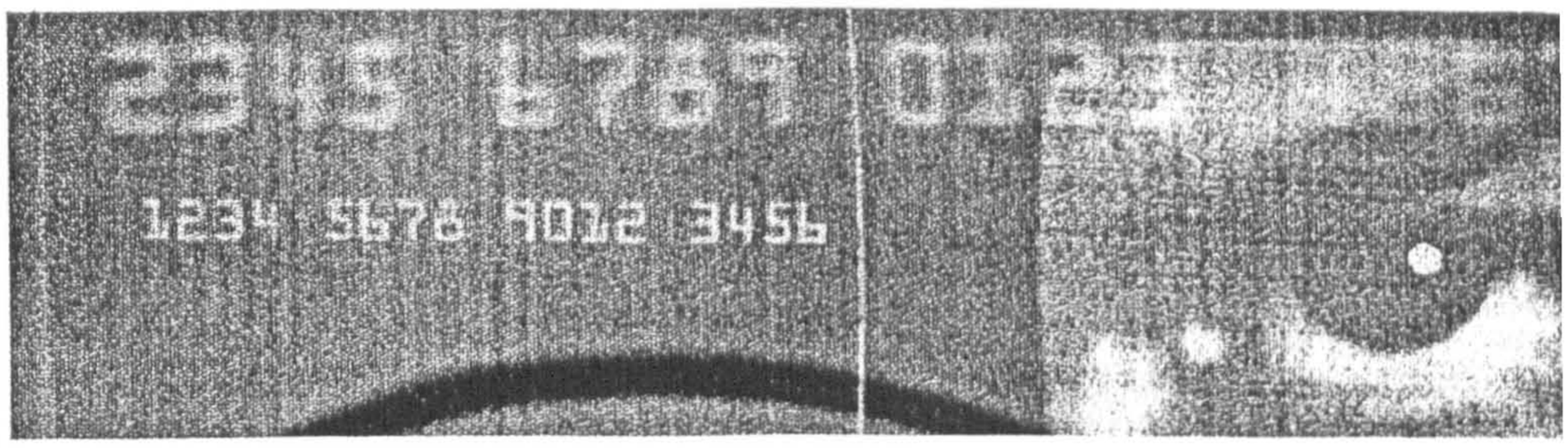
So how is the e-commerce industry faring the corporate social responsibility stakes? answer from one investigation at least is: with a 'deafening silence'. That's how Jam Wilsdon of the Forum for the Future put in his pamphlet *Dot-coms Ethics: E-busine*

"AN INCREASINGLY CYNICAL PUBLIC EXPECTS EVIDENCE OF AN ETHICAL APPROAC IN BUSINESS"

and Sustainability, which is part of the Government-backed Digital Futures investigation into the social and environmental impact of the Internet. A survey by the Forum found that 79 perc of Internet and e-commerce companies absolutely nothing to measure or manag their environmental impact: the worst s of any industry. In stark contrast, 70 pe of FTSE100 companies now produce re formal reports in these areas.

Even more worrying is the finding th percent of dot-coms justify this omissio the grounds that they don't have any environmental or social impacts, while percent said they didn't have time to th about these issues and 50 percent said

MARKETING MORALS



didn't have the expertise to address them. Just imagine the uproar if GSK, BP or Shell gave that sort of response to Oxfam or Greenpeace.

Give and take

So what is the way forward for e-business? One definite no-no is PR spin: undertaking a few initiatives with a focus on what can be said in the press release. Such gimmicks are usually counterproductive (see box below). Two other avenues traditionally followed by big business are also beginning to look less attractive. The first approach was almost standard practice not so long ago. It can be summed up by the slogan, 'We do good by doing well'. The argument goes like this. Successful businesses contribute to their communities by paying taxes, providing jobs and creating useful products and services. In other words, by being successful. Like all good citizens they abide by the law, but it's up to governments and regulators to decide what the law says. The main point is that if businesses distract themselves too much from their prime purpose of creating wealth, there won't be any to share around in the first place.

Such a philosophy is pretty grudging, however, and many businesses feel they should be doing more. Their philosophy is more akin to 'do well and do good'. This idea is centred around the notion that, providing they have accrued substantial profits, they should 'give something back' in the form of charitable donations, sponsorships or other forms of largess. Th is a bigger business than many realise. In t US, for example, the assets held by charita foundations has leaped by 1100 percent t $330bn over the last 20 years. Businesses contribute $20bn a year to educational, humanitarian and cultural organisations. Even so, there's something terribly condescending about this approach. And i does nothing to address the sort of reputation risks faced by GSK.

Enter, the latest phase of corporate social responsibility. Its philosophy can be summed up by 'do well by doing good' – and it's not just pious posturing. Nowaday as GSK found out, insuring yourself agains 'reputational risk' not only involves minimising any negative environmental or social impacts your business might have it also requires you to make a positive environmental or social contribution. And strange as it may seem, a genuine commitment to doing so can become the source of a real competitive advantage.

Doing well by doing good

The first forms of advantage are well know risk reduction (by avoiding that front page exposé, for example), and reaping the bene of a 'good' reputation. But building a reputation is not only a matter of winning brownie points among consumers and in t media. It can have massive effects on staff motivation and recruitment – for example in the wake of Brent Spar, Shell's graduate intake plummeted. A 'significant minority' of the best and brightest take excellent pay and conditions as a given when considerin possible employers, notes David Grayson, a director of Business in the Community and the European public affairs consultanc EPPA. They're now looking at other factor such as whether they feel comfortable with

ACTIONS SPEAK LOUDER THAN WORDS

Successful corporate social responsibility encompasses all aspects of business

It's taking a long time to sink in, but it's becoming more obvious by the day: PR puffery and corporate social responsibility don't go well together. Some companies still like to wear their do-gooding hearts on their sleeves – Lloyds Bank's current TV ad campaign is a case in point. But as often as not, do-gooding claims simply make firms a target of hostile pressure groups, a sceptical media and cynical consumers.

Take social and environmental reporting, which is now all the rage among big companies. These reports are produced at great cost, but mostly "they're just a bit of PR," says Deborah Doane, author of a new report called *Corporate Spin*. "There are no standards for reporting, and companies can say anything they want." Corporate social responsibility was originally seen as part of 'reputation management' which, in turn, was seen as a communications issue. But now, levels of cynicism are so high that it's probably best to take responsibility for CSR away from the communications departments and integrate it into all aspects of the business, suggests Dorothy Mackenzie of brand strategy consultants Dragon International.

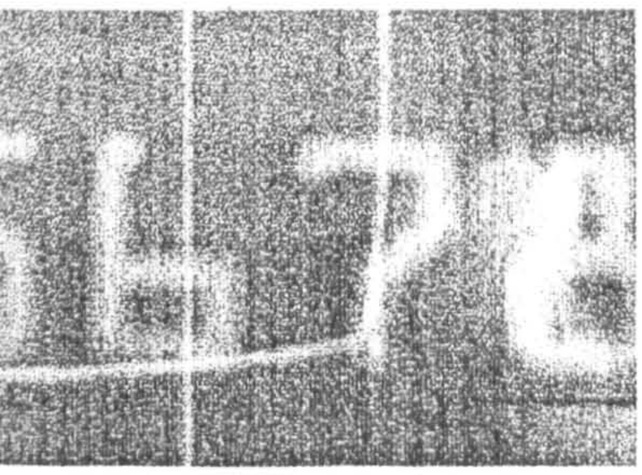
David Grayson, a director of Business in the Community and of the European public affairs consultancy EPPA, agrees. "Communications-wise, if it's just an isolated initiative and isn't consistently and coherently applied to everything the company does, better to keep quiet about it." If you boast, the inconsistencies will be exposed and the result will probably do more PR harm than good.

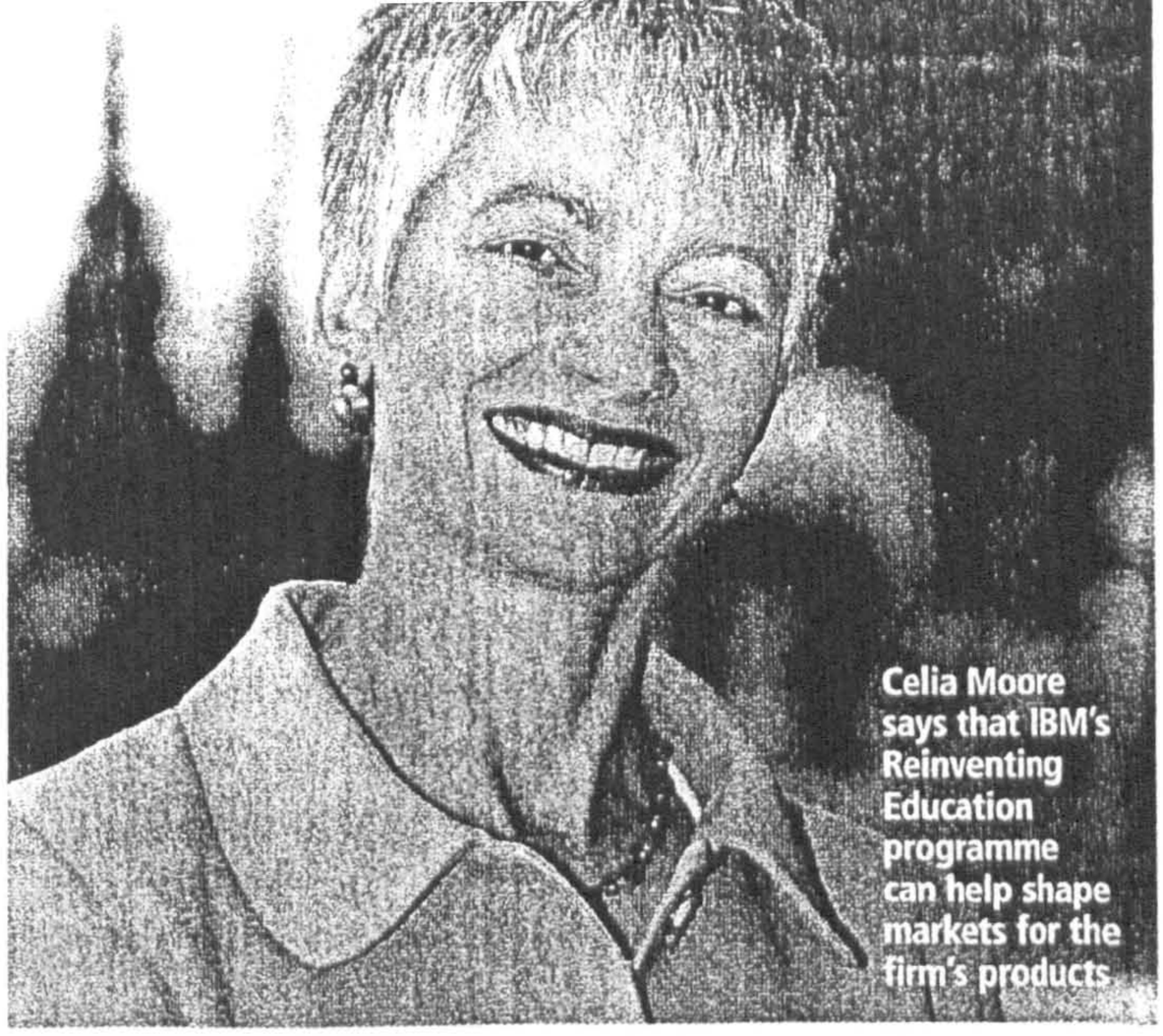
But that leaves managers with a problem, because failing to inform people can be just as harmful. "People keep on saying, 'We didn't know you did that. You should tell us.' But then when you do, you're seen as just wasting a lot of money blowing your own trumpet," complains BP's Chris Tuppen. "It's a real juggling act, I've got to say."

Is there a way through? Perhaps there is, and it's via modern-day buzz-words like 'openness', 'honesty' and 'transparency'. If you've got something to say, it all depends how you say it, says Doane. "If you say you are pursuing a policy, that you will monitor improvement, measure it and report it, that's great. It's all about transparency."

But don't expect criticism and debate to simply evaporate. They're part of the process, says Grayson. Sophisticated businesses "recognise they don't have all the answers. They are confronting leading-edge issues where there are sometimes genuine cultural differences and legitimate debates as to what is right and what is wrong. And they accept that they are on a journey. The aim is not to silence all criticism, but to understand these criticisms and to be able to explain why you think the critics are wrong."

If you genuinely engage people in exploring these debates, says Grayson, "people will respect you for not being arrogant and for not claiming to have all the answers." You hope.




Celia Moore says that IBM's Reinventing Education programme can help shape markets for the firm's products

the organisation's values. "And this is as true for a ten-person software company in Surrey as it is for Shell," stresses Grayson.

The process of keeping in touch with critics and agenda-setters can bring other benefits too. "Large organisations do not automatically arrive at the right place" in terms of their relationships with stakeholders, observes Chris Gibson-Smith, managing director of policies and technology at BP Amoco. "They require real leadership rooted in an understanding of context." BP Amoco's commitment to social responsibility, he says, is all about trying to "align our policies, values and behaviour with those of the societies in which we operate," because ultimately, "superior performance means being in touch."

A second aspect of 'doing well by doing good' is that making best practice part and parcel of overall operations can help drive the business forward. There's no blanket answer to the question 'does it pay to be green?', notes Harvard Business School researcher Forest Reinhardt. It always depends on specifics. But in general, companies have found that embracing green policies can deliver a competitive edge in a number of ways. Environmental performance can be used to differentiate products or services, set an environmental agenda (which imposes new regulations on competitors), and redefine competition within a market around a new green criteria. Sometimes, it can also simply cut costs.

Take the last point as an example. Most environmental activities actually generate direct benefits in terms of increased productivity and efficiency, notes Dr Chris Tuppen, head of sustainable development and corporate accountability at BT. "The more you integrate it into your operations the greater the gains." Risk reduction, the war for talent, product differentiation and operational efficiency. These in themselves are all good enough reasons to do good, but if anything the biggest benefit goes right to the heart of corporations' marketing strategy: innovation.

New opportunities

According to some thinkers, such as Rosabeth Moss Kanter, companies that attempt to use their skills, resources and technologies to instigate "sustainable, replicable, institutionalised change" in the social sector invariably find themselves stretched in ways and areas that traditional competition fails to stretch them. Social problems are economic problems, notes Kanter. And when companies put their minds to tackling these problems, they find themselves developing new skills, new products and services and sometimes even new markets.

Take IBM. For it, corporate social responsibility is becoming "a core business issue," says Celia Moore, IBM's corporate community relations manager for Europe, the Middle East and Africa. Maintaining IBM's long-standing 'Reinventing Education' programme, for example, involves intensive research into how educational institutions can use the fruits of new technologies to transform what they do. In the process, the programme is actually helping to shape a market of significant interest to IBM. "We see it very much as an investment, rather than handing out money," says Moore. "It's not just feel-good. We're looking for the win-wins and integrating it into the business bottom line."

Examples of this approach are becoming common. It's why, for instance, Hewlett Packard is currently investing $1 billion in tele-medicine, e-learning and microcredit schemes in 1,000 villages in the developing world. Or why AOL has committed itself to studying the 'digital divide'. As BT's Tuppen notes, corporate socia responsibility "blurs particularly strongly" with commercial interest when it leads to the "development of new business models that bring products and services to people who couldn't previously afford them." Or as Moss Kanter puts it: "This is not charity. It's R&D".

Look at corporate social responsibility in a narrow way – simply in terms of reputation risk – and perhaps (just perhaps) Internet businesses are right not to fuss too much. As Deborah Doane, head of corporate accountability at the New Economics Foundation, notes, the biggest reputation risk lies with big, global brands and firms in sensitive industries like oil. If you're a small, low-profile company or one with low-level environmental impact she believes that, "How far you should invest time, money and resources going beyond minimum requirements is not obvious. I'm not convinced it's a benefit for all types of industries." But seen from the broader perspective of 'talent wars', learning, innovation and market development, e-business's current complacency begins to look myopic. After all, if Moss Kanter is right and corporate social responsibility is now more about R&D than charity, it's a bit strange that one of the sectors most associated with innovation in our society is hardly involved.

"IN GENERAL, COMPANIES HAVE FOUND THAT EMBRACING GREEN POLICIES CAN DELIVER A COMPETITIVE EDGE IN A NUMBER OF DIFFERENT WAYS"

ALAN MITCHELL IS A FREELANCE BUSINESS WRITER AND AUTHO OF *RIGHT SIDE UP*. EMAIL: ASMITCHELL@AOL.COM

FOCUS REPORT

Inquiry Asks Whether E-Commerce Is a Force for Good or Evil

Momentum is building behind efforts to understand the environmental and social consequences of electronic commerce and, perhaps, channel its rampant power toward prudent economic growth. The newest e-commerce initiative to be launched in this direction is called Digital Europe, a consortium of three research institutes supported by €630,000 (US $585,600) from the **European Commission**.

Coordinated by **Forum for the Future**, which UK environmentalists **Jonathon Porritt, Sara Parkin,** and **Paul Elkins** founded in 1996, and joined by the German **Wuppertal Institute for Climate, Environment, and Energy** and Italy's **Fondazione Eni Enrico Mattei** based in Milan, Digital Europe will recruit 12 partner companies to research 8 industry sectors, including financial services, music, pulp and paper, and food. **Vodafone, Sun Microsystems,** and **AOL Europe** have all agreed to join the project.

Digital Europe will analyze four main areas:

1. The impacts e-commerce may have on the use of materials and resources and on transportation patterns
2. The social responsibility of leading IT and telecommunications companies
3. The influence the companies have on green and ethical consumer behavior
4. The effect of e-commerce on regional development and social structures in Europe

In addition, Digital Europe will attempt to explain how the new economy may fit with the sustainable development strategies scheduled for adoption by EU governments this summer.

By the end of June, Digital Europe should be ready to take its place beside digital development initiatives launched in the US, where efforts concentrate more on getting people connected to the Internet and are less explicitly concerned about any harmful side effects.

At the **Massachusetts Institute of Technology** Media Laboratory, researchers are collaborating with the Center for International Development at **Harvard University** on a project dubbed Digital Nations. The initiative aims to promote literacy, health, and community development projects using low-cost wireless technologies in developing countries. The universities are seeking the help of corporate, institutional, and individual sponsors.

The **World Resources Institute** (WRI), a research center in Washington, DC, is finalizing plans to start Digital Dividends with US $750,000 seed money. Digital Dividends will explore and document ways for dot-coms and e-businesses to use their technologies to benefit the world's poor. The project aims to capitalize on WRI's successful conference held last October in Seattle, Washington, USA.

In another development, **Brad Allenby,** vice president for environment, health, and safety at **AT&T,** is taking up residency at the **University of Virginia.** In the university's **Darden Graduate School of Business Administration,** Allenby will research the social and environmental dimensions of e-commerce and lead an analysis of how changes in international corporate governance will affect the private sector. Though he keeps his executive position at AT&T, Allenby will teach both at Darden and the university's engineering school. Allenby helped form the **International Society of Industrial Ecology** last month (see ***BATE,*** March 2001).

Allenby says researchers may not even know the right questions to ask yet, but e-commerce and the Internet are important areas to explore to ensure that new technologies deliver on their potential for a higher quality of life with a smaller environmental footprint.

COMMANDMENTS FOR DOT-COM COMPANIES

After investigating e-commerce and sustainable development, the UK's Digital Futures project makes a number of recommendations:

- Government should help develop the world's first "ecobot," a search engine capable of locating products and services on the basis of their environmental performance or ethical profile.
- E-businesses should be trailblazers in social and environmental disclosure and should set new standards for real-time multimedia reporting and stakeholder dialog.
- Retailers should share storage and distribution facilities to reduce demand for warehouse space and the use of delivery vans.
- Government should devote some of its e-commerce windfall profits to a social venture fund for projects designed to improve the quality of life.

L1

Comment & Analysis

Madeleine Bunting Along with religion, we have lost a sense of eternity.

Enter Brian Eno's clock of the future

Thousand-year chime

Easter has shot by in a blur of chocolate, chilly showers and garden centres. No surprise there: it has long since lost its religious content for most people. As many as 43%, according to a Mori poll, don't even know what Easter is supposed to celebrate.

In all the arguments about whether this matters, one of the greatest losses rarely gets a look in. Woven into the Christian services is a powerful understanding of time; again and again, the responses and prayers refer to eternity. Only in a church does one hear words such as "everlasting" and phrases such as "for ever and ever".

At the same time as being invited to contemplate God as eternal, churchgoers remember their own place in a continuum of belief which spans generations before them with the implication of generations to come. In such a huge timescale, one's own 70-odd years are placed in their proper place — we're just tenants, passing through.

But we're losing touch with this timescale, let alone that of eastern faiths such as Hinduism, which refer to trillions of years. Given the pace of change, we find it harder and harder to focus on the future. Politicians see little further than the next election. Stock markets and the media can't see much beyond the next day and corporations beyond the next quarter. Intoxicated with speed and immediacy, our attention span shrinks to *now*!

More and more, the environmental movement has come to recognise that its biggest challenge is to enlarge our sense of time: how do you persuade people to change their behaviour now so that their great-grandchildren won't have to suffer the consequences of it?

We seem to find it harder and harder to imagine the future much beyond the next decade, yet the consequences of our behaviour will last longer than any previous generation could have imagined. Nuclear waste, for example, will be radioactive for thousands of years.

All the biggest environmental problems, such as the destruction of biodiversity and global warming, sit in this gap between our failure to imagine the future and our unprecedented destructive capacity.

To challenge that failure of imagination is the purpose of the California-based Long Now foundation. It has started by building a clock that will last 10,000 years. It chimes every thousand years, it ticks every year. The slowest clock in the world was designed by Danny Hillis, who built the fastest computer in the world. The prototype now sits in the Science Museum.

The plan is to build four more around the world, and the goal is to use the clock to provoke or inspire people into thinking far, far into the future. Will there still be human beings to hear it chime the 10,000th year?

The "long now" was a phrase coined by the musician Brian Eno, who set up the foundation along with the US environmentalist Stewart Brand. He argues that empathy with human beings across the globe expanded in the 20th century, crossing boundaries of race and faith.

The task in the 21st century is to expand that empathy, respect and responsibility to other human beings across time.

That empathy across time is often palpable in an old church, and in its graveyard — in the memorials and the worn flagstones, as well as in services in remembrance of the dead such as All Souls' Day in November. Believer and non-believer alike can value in a church the sense of connection with the lives and sufferings of human beings across centuries.

Imagining a future is the first step to creating it

It is something of this which the Long Now hopes to reinvigorate through a new icon — the clock. Eno argues that our ability to imagine the future depends on our understanding of the past — the two are interlinked.

This is not about a theme-park past, but a sense of solidarity and continuity between the past and oneself. Put simply, if you worship your ancestors, you are more likely to care about the well-being of your great-great-grandchildren. Without an awareness of those who lived on the planet before us, we are less likely to have a sense of responsibility to those who will come after us.

For previous generations, it was routine to plan projects whose fulfilment they would never see — from the pyramids to avenues and gothic cathedrals. It seems harder and harder now to rally such faith in the future.

The clock of the Long Now may seem a loopy idea, but that's the point. Perhaps inadvertently, it is a reformulation of a long Christian tradition of time-keeping. The first mechanical clocks were invented in 13th-century monasteries to assist in the measuring of their days in the sequence of services — matins, compline etc.

Then, the purpose of marking time was focused on imagining eternity. Now it's more modest — just imagining the lives of our children's great-grandchildren. Change is only possible once people have started to see its possibility. Imagining a future is the first step to creating it.

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Shopping on the net could jam the roads

Sue Law

Spates of e-road rage are forecast if the popularity of shopping over the internet keeps growing at its current rate.

The prediction is just one conclusion of a detailed report on the impact of e-commerce on transport and logistics by the University of Bradford.

It says residential areas could be overwhelmed by fleets of delivery vans carrying growing volumes of web-ordered goods. Shoppers freed from the weekly supermarket run may then use their cars for other trips, causing an upsurge in traffic and driver frustration.

Peter James, one of the report's authors, said that despite the current shake-out in e-commerce, the trend for internet shopping would have a major impact on everyone's lives over the next decade.

"There could be many benefits, such as easier shopping, lower costs within supply chains and greater access to local shops for the disabled and elderly, and to world markets for small companies. But there could also be disadvantages such as more transport," said Professor James.

The study forms part of the Digital Futures project, which is looking at the environmental and social impact of e-commerce. It has been coordinated by the environmental non-governmental organisation Forum for the Future, and funded by the government and companies including AOL, British Petroleum and British Telecom. Research has taken a year to complete and has produced a list of recommendations.

The report confirms the positive effects of e-business include its improvement of distribution efficiency, reduction of waste and costs to consumers, and the creation of broader markets for small producers, especially in remote regions.

However, these are offset by the negative effect of a greater use of air freight, extra delivery van traffic and an increased demand for warehousing at strategic locations such as the M1/M62 interchange. Supermarkets could also be closed as shopping patterns change.

Peter Hopkinson, a senior lecturer in business strategy and the environment, said the research showed that the new economy was concentrated in London and the southeast. "There's currently a digital divide between people and regions who can access and develop e-commerce and those who can't," he said.

The report's authors point out that the situation could change rapidly. While growth in home shopping would be based on the existing infrastructure of supermarkets, parcel carriers and collection points in the short term, when it reached 5-10 per cent of total retail sales significant change would occur.

This would include development of pick centres, closure of supermarkets, and the creation of new distribution channels such as purpose-built drop-off and collection networks.

"It is too early," the report concludes, "to give e-business a green light as a creator of sustainable logistics. Now is the time to take precautionary action to ensure that e-business is compatible with the government's sustainable development objectives."

Details: www.digitalfutures.org.uk

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How many 'e's in e-commerce?
By James Wilsdon

Two of the most powerful drivers of change in our economy are the explosion of digital technologies and the shift towards sustainable development. Both require us to rethink the nature of goods and services. Both are transforming the relationship between governments, companies, citizens and consumers. Yet there have been surprisingly few attempts to assess whether the digital and sustainability revolutions will complement or conflict with one another.

The Digital Futures project was set up to address this challenge. Over the past year, eight think-tanks, including Green Alliance, have worked with three government departments and fourteen companies to better understand the social and environmental opportunities of the new economy. Each of the think-tanks led our research into a particular piece of the e-commerce and sustainability jigsaw – from local communities and social exclusion, through to energy use, planning, and transport. Green Alliance's contribution was to examine the environmental opportunities of the new economy, through Charles Leadbeater's pamphlet, *Mind Over Matter: Greening the new economy.*

As the Digital Futures project makes clear, there could be more 'e's in e-commerce than you might think.

- e is for electronic – the internet revolution that is changing the way we live, work and do business.
- e is for enterprise – the dynamism and creativity that drives the new economy.
- e is for environment – the scope to use new technologies to reduce our impact on the natural world.
- e is for equity – the potential of the internet to strengthen communities and build social cohesion.
- Add all these together and you get the final e – the explosion of opportunities to tackle the challenge of sustainability in new ways.

Above all, the project stresses that the opportunities are there, if we want to take them. The final report puts forward ten recommendations – or 'dot-commandments', outlining these opportunities and setting out what government, business and the NGOs could do to make the most of them. So what does the new economy mean for environmental policy?

Digital Futures identifies a number of potential ways in which e-commerce could help to cut energy and resource use, and improve environmental productivity. Firstly, there is scope for virtualisation – the spread of intangible products like entertainment and software in the form of computer files. Although this still requires equipment and energy, it cuts out the environmental costs of manufacture and transport. Virtualisation is happening already: banking and accounting take place online; MP3 music files are distributed in digital form; and the Britannica.com website has replaced the need for millions of leather-bound encyclopaedias. Environmental benefits could also flow from B2B e-commerce. Re-engineering supply chains through B2B exchanges, and centralising procurement, can lead to less warehousing, less transportation and less wastage overall.

There could be gains, too, from new business models enabled by internet technology. Auction sites like eBay, which allow the consumer-to-consumer trading of second-hand goods, can prolong the useful life of products and reduce waste. The $3bn of stuff that has been traded on eBay since it was launched is $3bn less stuff that is now in landfill. In the longer term, futurologists such as Jeremy Rifkin suggest we may shift to an e-economy based more on access than ownership, as the short-term leasing of many goods and services becomes possible online.

Finally, e-commerce could support green consumerism. Traditionally, the barriers to this have been the difficulty of accessing products and the limited availability of reliable information.

E-commerce is ideally suited to overcoming these obstacles, and it can only be a matter of time before a large retailer launches a green or ethical shopping site. At the moment, this market has been left to a handful of small players, which lack the scale to reach a wide consumer audience. And there is also the potential for green search engines, which trawl the web to find products that meet high social or environmental standards.

The opportunities are clear. But the last thing we want to do is slip into a sense of complacency about the inevitability of positive outcomes. The environmental benefits from virtualisation, dematerialisation and increased efficiency will not flow automatically – consumer preferences and business practices take a long time to change. The investment in capital, time and creativity needed to bring about these changes is considerable. We need to make sure that people have the information, and incentives, to help them to shift systematically to more sustainable patterns of production and consumption.

"The resource efficiency gains brought about by the rise of e-commerce and the shift from heavy industries towards knowledge and service-based industries have been more than offset by the tremendous scale of economic growth and consumer choices."

Above all, we mustn't underestimate the rebound effect, whereby all the extra environmental 'space' created by new technology is instantly swallowed up by our insatiable appetite to consume ever more exotic products and services. Business can always find more efficient ways to deliver products and services, but if this just means that we buy more, then any environmental gains are cancelled out. Taking B2C e-commerce as an example, the worst case scenario is that we end up with hundreds of white vans jamming up residential neigbourhoods, whilst consumers, freed up from the time they would have spent in the supermarket, drive off in their cars to do yet more shopping.

It is also important not to underestimate the impacts of the technology itself. As our homes and offices become filled with 'intelligent' appliances, wired up and communicating with one another 24 hours a day, energy consumption could rocket. Already, the growth of 'server farms' – warehouses of super-computers which form the backbone of the internet – are placing a strain on electricity supply in places such as Silicon Valley and London.

There is a sense of déjà vu to this whole debate. Back in 1972, when 'Limits to Growth' was published, critics responded to its gloomy predictions by insisting that technological innovation would outpace environmental problems. Thirty years on, a cursory glance at any key environmental indicator shows that this optimism was misplaced. Although new technology has enabled a dramatic increase in resource productivity, extra consumption is outweighing these gains.

A recent report from the World Resources Institute highlights this problem in stark terms. Based on analysis of five advanced industrial economies (the US, Germany, Japan, Austria and the Netherlands), it shows that pollution and waste have continued to rise exponentially, despite the much-vaunted shift towards knowledge-based economies. As Emily Matthews, lead author of the report, points out: "The resource efficiency gains brought about by the rise of e-commerce and the shift from heavy industries towards knowledge and service-based industries have been more than offset by the tremendous scale of economic growth and consumer choices."

Little wonder then, that some greens dismiss claims for e-commerce as a successor to the 'paperless office' in a long line of techno-optimist myths. The lesson from the last thirty years is that technology is no panacea. Now – at this critical juncture in the development of the new economy – is precisely the time when we need to devote more effort to ensuring that technology and innovation are channelled towards sustainability. The scale of the challenge should not be underestimated.

Opportunities

Targets for improving resource productivity

The DTI's 1998 Competitiveness White Paper pledged "to make the UK the best environment in the world for e-commerce". As part of its commitment to improving resource productivity, the DTI could now set an additional target: "to make UK e-commerce the best in the world for the environment". This would send a strong signal to the e-business community about the importance of environmental innovation. Progress could be monitored through an annual life-

cycle analysis of an 'e-shopping basket'. This would measure the energy and resources required to produce, sell, use and dispose of a standard selection of goods and services, and compare the relative impacts of online and conventional commerce.

Bring on the eco-bots

A recent DETR report calls for the establishment of a web-site to help consumers find out more about the environmental effects of products and services. This is an excellent idea, which could be expanded to include the development of the world's first 'ecobot' – a green search engine capable of locating products on the basis of environmental or ethical performance. There are already lots of search engines that scour the web on the basis of price. An eco-bot would enable consumers to search under green and ethical criteria, for example to find the most energy efficient fridge, or the most ethical pension.

Incentives matter more, not less

The environmental opportunities of the new economy do not make existing environmental policies redundant. Far from it - to make the most of these opportunities we need to accelerate existing policy trends: more green taxation; stronger measures to promote sustainable transport; and increased responsibilities on manufacturers and retailers for products throughout their life-cycle. These policies will provide the incentives that are crucial to changing business and consumer behaviour.

Consumer awareness

MORI research commissioned by the Digital Futures project shows that ordinary consumers are very uncertain about the environmental effects of e-commerce. Government, business and environmental NGOs should make an effort to increase levels of consumer awareness about the environmental impacts and opportunities of e-commerce, e-work and other digital technologies. One option would be to address these issues through existing campaigns such as Going for Green and 'Are you doing your bit?'

James Wilsdon is senior policy adviser at Forum for the Future and co-ordinator of the Digital Futures project (j.wilsdon@forumforthefuture.org.uk). *The Digital Futures summary report is available free to download at www.digitalfutures.org.uk. The full results of the project are contained in the book* Digital Futures: Living in a dot-com world (Earthscan, March 2001).

The 10 'dot-commandments' for a sustainable digital economy

1. Beyond the hype there's hope
   E-commerce creates new opportunities for environmental and social sustainability.

2. The e-economy can access all areas
   The digital revolution could refresh the parts that other revolutions haven't reached, by spreading benefits to all regions of the UK and all sectors of society.

3. Community is alive & clicking
   Online relationships, supported by e-commerce, can add a valuable extra dimension to real world interaction.

4. 'e' is for environment
   E-commerce could help cut energy and resource use, and improve environmental productivity.

5. HTML – Heavy Traffic Made Lighter?
   Virtual traffic can replace real traffic. With the right policy framework, e-business could create more efficient logistics and distribution systems.

6. Trust me, I'm a dot-com
   E-commerce is changing the relationship between companies and their stakeholders, and could usher in a new era of corporate transparency and accountability.

7. But right now, matter matters more (not less)
   Potential environmental gains won't be realised without a concerted effort from government and business to align e-commerce with wider sustainability objectives.

8. Smart technology needs smart institutions
   Technology is developing at breakneck speed. Institutionally we're struggling to keep up. Sustainable e-business will depend not just on technological innovation, but also on social and political innovation.

9. We need to join the dots
   Partnership will be key to the creation of a sustainable digital economy. Dot-coms, dot-govs and dot-orgs need to work together more often and in new ways.

10. It's about time
    A year in cyberspace is said to be four months. As the internet accelerates the pace of life, we need to change our attitude to time and long-term responsibility.

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DIGITAL FUTURES:

living in a dot-com world

Edited by James Wilsdon

The impossible has occurred; an enjoyable book has been put together about the e-revolution and the dot com economy. The book gets its energy and panache by being cast in the form of eight highly readable essays on themes ranging from the environmental effects of the e-revolution through to the regional economic impact of being wired up. Each essay is accompanied by a brief response from another informed commentator. Contributors run from the BBC Economics Editor, Evan Davies, through to the Head of e-business policy at the Institute of Directors and researchers at think tank Demos. The fundamental debate in the book is an old one: it is a debate between up beat, free market optimists and downbeat pessimists. The pessimists pour cold water on the optimists' assumptions on both social and environmental grounds.
Published by Earthscan (0903 828800) 228pp, £19.99 paperback, ISBN 1 85383 789 X

Enter the e-Lab

James Wilsdon, Senior Policy Advisor at Forum for the Future

Predicting the future is a hazardous business. Take Charles Duell, the US Patent Commissioner, who in 1899 proposed shutting down the Patent Office on the grounds that "everything that can be invented has been invented". Or Thomas Watson, the former CEO of IBM, who declared in the late 1940s that "there is a world market for maybe five computers".

Forecasting trends in technology is particularly tricky. Who can say what the digital economy will look like in 2010 or 2020? The Digital Futures project, which I've spent the past year co-ordinating, was set up to address this challenge. Three government departments, eight think tanks and fourteen companies have tried to envisage what future trends in digital technologies will mean for society and the environment. We've examined various pieces of the internet and sustainability jigsaw – from local communities and social exclusion through to energy use, planning, and transport.

Last month we launched our final report, which sets out ten 'dot-commandments' for a sustainable digital economy*. We also published a book – digital futures: living in a dot-com world ** which contains all our research, along with contributions from leading thinkers such as Amory Lovins, Evan Davis, Jonathon Porritt and Madeleine Bunting**.

Our findings aren't all easy to swallow. There's a lot of work to do if the new economy is to avoid the mistakes of the old. But as Tim Jackson, founder of QXL, put it recently, "Now that we realise e-commerce isn't a passport to untold riches, it's about time we gave some thought to something other than money." He's right. If e-businesses are still to be with us ten or 20 years from now they are going to have to prove their worth to society in more than purely economic terms.

Yet compared to most business sectors, debates about sustainability and digital technologies are still at a very early stage. The main contribution of Digital Futures has been to get a conversation going between the IT and sustainability communities. Along the way, as with all such projects, we've produced our fair share of glossy reports. But the real challenge is to get our ideas off the page and into the very DNA of the new economy. We urgently need to deepen the engagement of companies in the IT and e-business sectors so that they channel more of their innovation and creativity towards social and environmental goals.

As our contribution to this process, Forum for the Future is establishing an 'e-Lab', a policy laboratory where IT and e-businesses can experiment with new ideas, alongside NGOs, think-tanks and key players in central and local government. The e-Lab will provide an institutional space in which to imagine and play with innovative solutions for sustainability in the new economy. The two founding partners of the e-Lab are Vodafone and Sun Microsystems, and we'll be recruiting others in the months ahead.

The e-Lab will also be carrying forward a major research programme, by teaming up with two European think-tank partners - the Wuppertal Institute in Germany and Foundazione Eni Enrico Mattei in Italy – to explore in greater depth the contribution that e-business and e-work can play in creating a sustainable information society.

This new project will work with the European Commission to apply the lessons learned from Digital Futures at a pan-European level. It will include case studies of eight sectors: financial services, music, pulp & paper, food retailing, auto-manufacture, books, PCs and second-hand goods. In each of these sectors the project will assess social and environmental impacts, and recommend the blend of policy, innovation, business leadership and market incentives that will be necessary to create a virtuous circle between e-business and sustainable development.

Finally, as a more practical project, the e-Lab will be joining forces with Demos, Ethical Media and Smartchange to set up a support network for social and environmental e-entrepreneurs. This will translate the theory about sustainability in the new economy into some highly practical projects. It will bring together a number of different key groups: successful innovators; local community groups; policy makers and investors.

From time to time on these pages, I'll offer updates on our progress. But from the next issue onwards, I'll also be writing about a broader range of sustainability issues, in particular the work of the new Sustainable Development Commission, which is chaired by Jonathon Porritt. Keep reading!

* Available free to download at www.digitalfutures.org.uk

** digital futures: living in a dot-com world is published by Earthscan

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Q1

Die Dot-com-Ethik: E-Business und Nachhaltigkeit

Autor:

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In den letzten beiden Jahren waren die unbegrenzten Möglichkeiten des elektronischen Handels ein großes Gesprächsthema. Mindestens ein Aspekt des unternehmerischen Handels bleibt jedoch von dem revolutionären Aufstieg des Internet auf seltsame Weise unberührt. Es herrscht eine merkliche Stille über das Verhältnis zwischen E-Commerce und unternehmerischer Nachhaltigkeit. Dieser Artikel soll zeigen, dass neben den ökonomischen Möglichkeiten, die der elektronische Handel bietet, einige aufregende soziale und ökologische Chancen gegeben sind, welche es zu ergreifen gilt, soll die New Economy nachhaltiger als die Old Economy gestaltet werden.

1. Der Mythos von der Virtualität

Es ähnelte einer sorgfältig geplanten Militäroperation. An strategischen Punkten in Amerika brachte eine Flotte von 9.000 Lkws ihre Motoren auf Touren, 100 eigens gecharterte Flugzeuge rollten die Startbahn entlang. Ihre Mission: Die Auslieferung von „Harry Potter und der Feuerkelch" an eine Nation, die nach sofortigem Lesevergnügen hungerte.

So verrückt es klingt, es hat sich zugetragen. Im Juli verbündete sich Amazon.com mit Federal Express, um 250.000 Kopien des neuen Harry Potter-Buches an begierige US-Fans auszuliefern. Ganz im Geist des 1-Click™ shopping wurden keine Mühen gescheut um sicher zu stellen, dass die Menschen am Morgen der Veröffentlichung das Buch vor ihrer Tür finden würden. In einer Pressemitteilung am nächsten Tag wurde es als „eine der größten Verkaufs- und Vertriebsaktionen in der Geschichte des E-Commerce" bezeichnet (1). In nur 24 Stunden waren über 300 Tonnen oder 188 Millionen Seiten der Harry Potter-Magie zu Haushalten in ganz Amerika transportiert worden.

Wir haben viel über die Zauberkräfte des elektronischen Handels gehört. Wie sie die Regeln der Geschäftswelt neu definieren. Wie sie Zulieferketten zusammenbrechen lassen. Wie sie das Verhältnis zwischen Unternehmen und Konsumenten verändern. Aber mindestens ein Aspekt des unternehmerischen Handelns bleibt von dem revolutionären Aufstieg des elektronischen Handels auf seltsame Weise unberührt. Über das Verhältnis zwischen E-Commerce und unternehmerischer Nachhaltigkeit wurde kaum etwas gesagt. Nehmen wir das Beispiel Harry Potter. 250.000 Bücher einzeln zu verpacken und per Express-Luftfracht über Nacht zu verteilen zählt im Hinblick auf Umweltfreundlichkeit zu den denkbar ungünstigsten Vertriebsmethoden. Es scheint als hätte diese Aktion nicht nur alle Rekorde des E-Commerce-Vertriebs gebrochen, sondern auch die der Menge an Treibhausgasen und Verpackungsmüll für einen einzigen Roman.

Der Mangel an Aufmerksamkeit von E-Commerce-Unternehmen gegen-

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über Nachhaltigkeitaspekten steht dem weitläufigen Trend im unternehmerischen Handeln entgegen. Es wird inzwischen allgemein anerkannt, dass Unternehmen heute ein wesentlich breiteres Spektrum an Erwartungen erfüllen müssen, als dies in der Vergangenheit der Fall war: Regierungen erlassen neue Vorschriften, Konsumenten verlangen höhere ethische Standards, Interessengruppen werden professioneller und Kommunen fordern ein Mitspracherecht bei Entscheidungen ein. Die Macht der Unternehmen steht auf dem Prüfstein wie nie zuvor.

Bisher ist die E-Business-Gemeinde eine Anwort auf diese Trends schuldig geblieben. Dieser Artikel ist ein Aufruf zu einem stärkeren Engagement. Zentrales Argument: Neben den ökonomischen Möglichkeiten, die der elektronische Handel eröffnet hat, gibt es eine Vielzahl an sozialen und ökologischen Chancen, welche es zu ergreifen gilt, soll die New Economy nachhaltiger als die Old Economy werden. Chancen, die sich nicht nur reinen Dot-com-Spielern stellen, sondern sich auch den tradionellen „Bricks & Mortar"-Unternehmen eröffnen, welche sich nun auf dem Feld des E-Business betätigen.

In den letzten beiden Jahren hat sich die Berichterstattung über den elektronischen Handel von Erzählungen über explosives Wachstum und unbegrenzten Möglichkeiten hin zu zurückhaltenden Investoren und Unternehmenspleiten verlagert. Trotz des Zusammenbruchs einer Reihe von Startup-Unternehmen bleibt die grundlegende Bedeutung des elektronischen Handels unangetastet. E-Business sowie die dazu benötigte Infrastruktur existieren und können in den nächsten Jahren nur an Bedeutung gewinnen. In der Konsequenz wird der elektronische Geschäftsverkehr unsere Gesellschaft und unser Verhältnis zur natürlichen Umwelt verändern. Neue Probleme werden entstehen, aber auch neue Lösungen gefunden werden – neue Wege Dinge richtig zu tun. Gegenwärtig, in den frühen Stadien der E-Revolution, ist es daher angebracht, einige IAQs (infrequently asked questions) über das Potenzial des elektronischen Handels zu stellen, die die Gesellschaft auf umfassende Weise bereichern können.

2. Drei Dot-com-Mythen

Am Anfang steht jedoch die Frage, warum der elektronische Geschäftsverkehr es bisher nicht geschafft hat, sich mit dem Thema Nachhaltigkeit auseinander zu setzen. Zum großen Teil fehlte schlichtweg die Notwendigkeit – es existiert ein weit verbreiteter Glaube, wonach solche Fragestellungen für durchschnittliche Dot-com-Unternehmen irrelevant seien. Dieser Glaube basiert auf einigen mächtigen Mythen über den elektronischen Handel, welche zuerst verstanden, dann jedoch ihres Nimbus beraubt werden müssen.

Da ist erstens der *Mythos von der Virtualität*, hinter dem der Gedanke steht, dass Dot-coms im virtuellen Raum des Internets operieren und ihr Einfluss auf die reale Welt daher vernachlässigbar bzw. nicht existent ist. Wie der Fall Harry Potter zeigt, ist dies jedoch nicht immer der Fall. Die Auswirkungen des elektronischen Handels können wie die jeder anderen ökonomischen Aktivität sowohl sozialer als auch ökologischer Natur sein und Dot-coms – ob business-to-consumer oder business-to-business – sehen sich mit denselben Problemen über Ethik, Zulieferketten, Energieverbrauch, Transport- und Ensorgungsfragen konfrontiert wie ihre „Bricks & Mortar"-Gegenparts in der realen Welt. Innovative Anwendungen der Internet-Technologie könnten helfen, einige dieser Probleme zu lösen, würde die elektronische Geschäftswelt ihren Einfluss anerkennen und einen Teil ihrer Energie in deren Bewältigung und Verringerung stecken.

Zweitens wäre da der *Mythos von der Unreife*, wonach es in diesem frühen Stadium des E-Commerce unfair wäre von diesem zu erwarten, dieselben ökologischen und sozialen Standards wie die übrigen Unternehmen erfüllen zu können. Erst im Erwachsenenalter wird der Sektor seine Zeit und Ressourcen diesen im Wesentlichen peripheren Themen widmen können. Dieses Argument wäre durchaus stichhaltig, gäbe es nicht auf der anderen Seite die ständigen Behauptungen, der elektronische Geschäftsverkehr sei die größte Veränderung seit der Industriellen Revolution. Ob ein solch extremer Vergleich berechtigt ist oder nicht, der elektronische Handel ist heute in der Geschäftswelt ausreichend genug etabliert, um sich den Fragen von Regierungen, NGOs und anderen Anspruchsgruppen über seine ökologischen und sozialen Leistungen zu stellen. Obwohl er einige Regeln der Geschäftswelt neu zu schreiben vermag, unbegrenzte Nachsicht kann er nicht erwarten. Mit der Beständigkeit kommt die Macht und mit der Macht die Verantwortung.

Der dritte Mythos ist *der Mythos vom technologischen Determinismus*. Danach folgt die Technologie einem vom Markt vorgegebenen Entwicklungspfad, auf den weitreichende politische und soziale Faktoren keinen Einfluss haben. Diese Ansicht wurde kürzlich in einem Leitartikel der Zeitschrift „The Economist" vertreten. Unter der Schlagzeile „What the internet cannot do" wurde die Idee belächelt, die Informationstechnologie könne helfen Kriege zu verhindern, die Umweltverschmutzung zu reduzieren sowie zahlreiche Arten der Ungleichheit zu bekämpfen (2). Diese Skepsis ist voreilig. In Wahrheit wissen wir nicht, welche langfristigen Auswirkungen das Internet haben wird. Es als etwas Unbekanntes („something out there") zu betrachten, nur weil es in keine erkennbare Form gepresst werden kann, um einer politischen Vision Rechnung zu tragen, wäre ein Fehler. Das Internet per se mag wenig zu einer nachhaltigeren Geschäftswelt beitragen können, gemeinsam mit einem aufgeklärten Management und einer wirksamen Öffentlichkeitsarbeit ist das Bild ein anderes.

Die Technologie auf Kosten der Menschlichkeit stets in den Mittelpunkt zu stellen hat ein bedauernswertes Bild über die Zukunft der New Economy in den Köpfen hinterlassen. Die meisten Menschen verbinden mit dem Begriff der New Economy komplizierte Technik sowie Erzählungen über Internet-Millionäre. Dies mag den treu ergebenen, technophilen Lesern von New Economy-Magazinen wie *Red Herring* und *Business 2.0* genügen, für eine ermutigende Vision über die Zukunft der Gesellschaft ist es zu wenig. Charles Leadbeater bemerkt treffend: *„Knowledge about communications and computing ... is erupting all around us, and yet the gleaming new*

economy born by virtue of all this knowledge seems empty, lacking a soul or animating values." [„Wissen über Kommunikations- und Computertechnologien ... gelangt allerorts an die Oberfläche und trotzdem scheint die strahlende, aus diesem Wissen entstandene New Economy leer, ohne Seele und ohne lebende Werte."] (3).

Einige werden die Meinung vertreten, dass es nicht Aufgabe von Unternehmen sei, derartige Visionen zu entwerfen, dass der elektronische Handel sich auf Gewinne und Wachstum konzentrieren und die großen Fragen der Politik überlassen sollte. Diese Sichtweise ist falsch. Sie lässt einige gefährliche Aspekte eines ungebremsten Wachstums des elektronischen Handels außer Acht. Und was noch wichtiger ist, sie negiert die Chancen, die sich durch eine ernsthafte Beschäftigung der betroffenen Unternehmen mit dem Thema der Nachhaltigkeit eröffnen könnten.

Behandeln wir zuerst die Gefahren. Je weiter die Entwicklung des E-Commerce voranschreitet und der Einfluss auf die Gesellschaft, Jobs, das Transportwesen und die Umwelt sichtbarer wird, desto größer wird für die betroffenen Unternehmen die Notwendigkeit zu zeigen, dass sie mehr als nur ökonomische Werte schaffen können. Obwohl das Internet in seinen ersten Jahren gut aufgenommen worden ist, dürfte dies in Zukunft nicht immer der Fall sein.

Da die Geburtsstunde der digitalen Wirtschaft erst sechs Jahre zurückliegt, mag die Beschäftigung mit den sozialen Einflüssen des Internet zur Zeit keine hohe Dringlichkeit besitzen. In 16-26 Jahren können die Dinge anders liegen. Doch schon heute warnen prominente Stimmen aus der Industrie wie Bill Joy, Chefwissenschaftler bei Sun Microsystems, vor den Gefahren, die von der Annäherung der Informationstechnologie an andere aufstrebende Technologien ausgehen. In einem eindrucksvollen Aufsatz, der letztes Jahr in der Zeitschrift *Wired* erschienen ist, vertritt Joy die Ansicht, dass „die Technologien des 21. Jahrhunderts – Genetik, Nanotechnologie und Robotik – so mächtig sind, dass sie eine völlig neue Qualität an Zufälligkeiten und Mißbräuchen produzieren können". Als Ergebnis seiner Überlegungen gibt er zu, eine „stärkere persönliche Verantwortung – nicht für die Arbeit, die ich bereits getan habe, sondern für die Arbeit die ich noch tun könnte, am Mündungsdelta der Wissenschaften", zu empfinden (4). Der Biotechnologiesektor mit seinen geklonten Schafen und seiner genetisch veränderten Nahrung hat uns die Gefahren neuer Technologien vor Augen geführt, deren Entwicklung sich schneller vollzieht, als die öffentliche Akzeptanz mitzuhalten im Stande ist. Ohne eine offen und ehrlich geführte Debatte über die sozialen Implikationen einer neuen Technologie wird es früher oder später zu Rückschlägen kommen, wird deren Legitimität in Frage gestellt werden. Die IT-Industrie darf nicht denken, sie sei dagegen immun.

Aber es gibt auch Chancen. Im Gegensatz zum Erdöl- und Chemiesektor, die sich auf Druck der Anspruchsgruppen rückwirkend mit sozialen und ökologischen Bedenken auseinander setzen mussten, ist der elektronische Geschäftsverkehr in der außergewöhnlich vorteilhaften Lage, diese Bedenken schon in der Entwicklungsphase antizipieren zu können. Wird diesen Fragen schon im Frühstadium Rechnung getragen, können sie später nicht zur Last werden. Eine junge, dynamische Industrie ist wesentlich anpassungsfähiger, als eine, die in starren Denkstrukuren verhaftet ist. Mit einer Mischung aus Visionen, Vorstellungskraft und intelligenten Strategiekonzepten sollte es möglich sein, das Element der Nachhaltigkeit in der DNA der New Economy zu verankern.

3. Die 3D-Unternehmer

„Now that we realize e-commerce isn't a passport to untold riches, it's about time we gave some thought to something other than money" (5).

Was treibt die neue Spezies der E-Unternehmer an? Wie beurteilen sie die Rolle der Unternehmen in der Gesellschaft? Um diesen Fragen auf den Grund zu gehen bietet sich als Einstieg das Buch *Heroes.com* von Louise Proddow an, in dem sie 50 prominenten Mitgliedern der digitalen Ökonomie Tribut zollt. Sie charakterisiert den sogenannten E-Unternehmer anhand folgender Kriterien:

- er ist ein leidenschaftlicher Verfechter der Dot-com-Ära;
- er erkennt, welche enormen Umwälzungen das Internet mit sich bringt und welche Chance es eröffnet;
- er überdenkt Handlungs- und Verhaltensweisen, das Internet bestimmt seine Strategie und sein Leben;
- er spielt nach neuen Regeln, ist offener, flexibler und dynamischer;
- er handelt in Internetzeit und bringt Dinge schnell voran;
- er ist sich der Bedeutung von Allianzen und Ausgliederungen bewusst;
- er lebt im Heute und genießt den Trubel rund um das Internet (6).

Im Hinblick auf die Nachhaltigkeit bietet sich ein gemischtes Bild. Ein klares Ja zu Flexibilität, Dynamik und zu der Bedeutung von Allianzen. Die als ebenfalls wichtig erachteten Kennzeichen Geschwindigkeit und „Leben im Heute" geben jedoch einigen Anlass zur Sorge. Um ehrlich zu sein, trotz der hochgelobten Kreativität dieser Unternehmerspezies hinterlässt die Lektüre von Heroes.com den Eindruck einer auffallend dürftigen Weitsicht ihrer Mitglieder. Nur wenige der beschriebenen Unternehmer scheinen gewillt zu sein, über den ökonomischen Tellerrand hinaus zu blicken und sich mit einer umfassenderen Unternehmensverantwortung auseinander zu setzen. Es mangelt an etwas, das wir als dreidimensionales Unternehmertum bezeichnen können: Die Nutzung von Technologien, um neben einem ökonomischen auch einen ökologischen und sozialen Nutzen zu generieren.

Vielleicht war dies zu erwarten. Mehrere Kommentatoren haben die Aufmerksamkeit auf den individualistischen Ethos der E-Business-Welt in einer freien Marktwirtschaft gelenkt. So hat z. B. die ehemalige Kolummnistin der Zeitschrift *Wired*, Paulina Borsook, den „beängstigenden, psychologisch fragwürdigen, vorsintflutlichen Autismus", welchen sie häufig in den US-amerkanischen High-tech-Zirkeln angetroffen hat, scharf attackiert (7). Auf ähnliche Weise prangert der Soziologe Manuel Castells „die Illusion einer Welt im Stil der Silicon-Valley-Gesellschaftszirkel, welche von technologischer Genialität,

finanzieller Abenteuerei und kulturellem Individualismus geprägt ist", an, wie sie von einigen Internet-Gurus propagiert wird. Eine solche Welt „ist nicht nur aus ethischen Gründen, sondern für unsere Zwecke wichtiger, sowohl vom politischen als auch vom Standpunkt der Nachhaltigkeit aus fragwürdig" (8).

4. Ein Überblick über die Ethik der Dot-com-Unternehmen

Statt sich auf Auswertungen aus zweiter Hand zu verlassen hat sich das „Forum for the Future" entschlossen, selbst einige Forschungen anzustellen. Zwischen Juli und November 2000 führten wir eine Umfrage über die Einstellung der IT- und Dot-com-Unternehmen zu sozialen und ökologischen Problemstellungen durch.

Von ursprünglich 150 angeschriebenen Unternehmen antworteten 103. Fast die Hälfte der Antworten kam direkt von den Geschäftsführern, die restlichen von leitenden Managern. Die ausgewählten Unternehmen sollten dabei einen Querschnitt des E-Commerce -Marktgeschehens repräsentieren. Die Liste reichte von großen multinationalen Konzernen bis hin zu kleinen Startup-Unternehmen und stellte eine Mischung der unterschiedlichen Ausprägungen (B2C, B2B, Internet Service Provider, Software- und Hardware-Firmen) dar. Das Hauptkriterium für die Aufnahme war eine im Wesentlichen auf dem Internet basierende Geschäftsidee. Aus diesem Grund blieben traditionelle Firmen, die sich neuerdings im E-Commerce engagieren, ausgeschlossen.

Im Gegensatz zu einigen negativen Stereotypen über Dot-com-Unternehmer lieferten die Ergebnisse ein überwältigend positives Bild:

- 65% der Befragten gaben an, soziale und ökologische Fragen seien wichtig oder sehr wichtig für ihr Unternehmen (für 28% waren diese weniger wichtig, für 7% unwichtig);
- für 92% stellten ökologische und soziale Fragen ein persönlich wichtiges oder sehr wichtiges Anliegen dar;
- 79% waren der Meinung, dass die positiven Auswirkungen des elektronischen Handels auf die Gesellschaft die negativen überwiegen würden (21% stimmten weder zu, noch lehnten sie die Aussage ab);
- 62% stimmten der Aussage zu, dass Unternehmen durch den elektronischen Handel besser auf ethische und ökologische Bedenken von Konsumenten werden eingehen können. (17% enthielten sich, 21% lehnten die Aussage ab).

Es scheint als würden die führenden Köpfe des E-Business den Nachhaltigkeitsgedanken auf breiter Front unterstützen, auch wenn sie ihre Ansichten nicht in genau diesen Worten zum Ausdruck bringen. Eigentlich überrascht dies nicht: Die Mehrheit der befragten Unternehmen wird von hochqualifizierten, kreativen Leuten Mitte Dreißig oder jünger geführt, welche sehr wahrscheinlich über ein vernünftiges Maß an ökologischen und sozialen Kenntnissen verfügen. Die E-Generation ist mit den Worten von Don Tapscott „digital aufgewachsen." (9). Sie besitzt jedoch auch eine grüne Ader, ist sich den globalen Problemen mehr denn je bewusst und geht geschäftliche Dinge radikaler, unkonventioneller an.

Unsere Umfrage weist jedoch auch auf eine erhebliche Lücke zwischen Theorie und Praxis hin. Auf unsere Frage, ob Unternehmen über Verfahren oder Konzepte verfügen, um diese Probleme anzugehen, zeigte sich folgendes Bild:

- 79% der Unternehmen tun nichts, um ihren ökologischen Einfluss zu messen oder zu managen.
- 82% weder messen noch managen die Auswirkungen ihres Transportwesens.
- 83% bieten ihren Mitarbeitern keine Schulungen über den Umgang mit ökologischen oder sozialen Problemstellungen an.

Dieses Bild zeigt, dass IT- und E-Commerce-Unternehmen noch viel über die Grundprinzipien eines ökologischen und sozialen Management lernen müssen. Kürzliche Untersuchungen von Business in the Environment und PIRC bestätigen dies. Beide kamen zu dem Ergebnis, dass der IT-Sektor in den Bereichen Umweltpolitik und -berichterstattung am schlechtesten abschneidet (10).

Als wir nachgefragt haben, warum Unternehmen keine Handlungsdirektiven oder Systeme implementiert haben, stachen drei Gründe hervor:

- *Fehlende Wahrnehmung der verursachten Einflüsse* – der Mythos von der Virtualität ist mächtig und die Umfrageergebnisse zeigen, dass viele Unternehmen sich ihres beträchtlichen Einflusses nicht bewusst sind.
- *Zeitmangel* – die Netzwelt handelt mit halsbrecherischer Geschwindigkeit, daher bleibt wenig Zeit, sich über diese Fragen Gedanken zu machen, geschweige denn zu handeln.
- *Mangelndes Fachwissen und fehlende Ressourcen* – Viele Internetfirmen stehen unter einem enormen finanziellen Druck und können keine Ressourcen für diese Zwecke abstellen. Oft sind auch die Mitarbeiter nicht ausreichend genug qualifiziert, um Verfahrensleitlinien zu entwickeln und entsprechende Systeme zu implementieren. Obwohl diese Hürden nicht unterschätzt werden dürfen, können sie durch die Einbindung der Geschäftsführung und den Einsatz effektiver Systeme überwunden werden. Die Lücke zwischen Idealvorstellung und Realität zu schließen, besitzt für alle E-Business-Unternehmen, die sich eine Reputation durch ihr gesellschaftliches Engagement aufbauen wollen, oberste Priorität.

4. Der Aufstieg des 3D-Unternehmers

Der Trend entwickelt sich schon heute in die richtige Richtung. In der elektronischen Welt sind ermutigende Anzeichen eines verstärkten Interesses an sozialer Verantwortung erkennbar. In den Vereinigten Staaten sind Gruppen wie die in Seattle ansässigen Digital Partners und die Silicon Valley Community Foundation entstanden, um Zeit und neu erworbene Finanzkraft der Unternehmer in soziale und gemeinnützige Initiativen zu lenken (11). Mehrere IT- und E-Commerce-Firmen haben Wohltätigkeitsstif-

tungen ins Leben gerufen – darunter das Unternehmen eBay, welches zum Zeitpunkt der Kapitalaufnahme 1% seiner Anteile der eBay-Stiftung zuteilen ließ. Einzelne wie Bill Gates oder Jim Clark, der Gründer von Netscape, haben Millionen an Gesundheits- und Bildungseinrichtungen unter besonderer Berücksichtigung der Entwicklungsländer gespendet. Obwohl in Großbritannien weniger Menschen die Möglichkeit hatten, Millionen zu verdienen, bevor der Markt abflaute, hat eine Handvoll begonnen, Geld in soziale Projekte zu investieren. Im März 2000 richtete Tim Jackson, der Gründer von QXL, eine mit 70 Mio. Pfund ausgestattete Wohltätigkeitsstiftung ein. Er begründete diesen Schritt folgendermaßen: „es ist wichtig, dass Unternehmer einen Teil der großen Menge an schnell verdientem Geld wieder an die Gemeinschaft zurückgeben" (12). Erst vor Kurzem widmete The first Tuesday entrepreneurs' network unter dem Motto: „because innovation is about more than money" eines ihrer Treffen sozialen Projekten. Laut Kate Oakley, einer führenden Autorin über die New Economy, ist es durchaus möglich, dass E-Unternehmer in einem Umfang zu Veränderungen des sozialen Gefüges unsere Städte werden beitragen können, wie es die großen Industriebarone des 19. Jahrhunderts getan haben. Auf die gleiche Weise, wie die viktorianischen Industriellen Museen, Bibliotheken und Universitäten gebaut haben, werden diese „neuen Viktorianer" Wege suchen, „um Teile ihres Reichtums wohltätigen Zwecken jeglicher Art zukommen zu lassen, von Suppenküchen bis hin zu Schulprogrammen, von AIDS-Hospizen bis hin zu Spielplätzen" (13).

Dies kann jedoch nicht über die Tatsache hinweg täuschen, dass der Großteil dieser Aktivitäten im Reich der Menschenliebe anzusiedeln ist und man seltener Unternehmen findet, die soziale oder ökologische Beiträge durch ihre Kerngeschäfte erwirtschaften. Es gibt Ausnahmen – in der Regel kleine Startup-Unternehmen – die zu den Pionieren der oben aufgeführten Unternehmen zählen. Darüber hinaus nehmen eine Handvoll der größeren Unternehmen die Überwindung des digitalen Grabens als strategische Geschäftsaufgabe in Angriff. Dazu zählen Unternehmen wie z. B. AOL, welches ein aktives soziales Förderungsprogramm in Großbritannien eingeführt hat und Hewlett-Packard, das vor Kurzem eine 1 Mrd.-USD-Initiative (e-inclusion) angekündigt hat. Inhalt der Initative sind Projekte in den Bereichen Tele-Medizin, E-Learning, E-Commerce und der Kleinkreditvergabe, um auf diese Weise den Fortschritt in den Entwicklungsländern mit Hilfe der Informationstechnologie zu fördern (14).

Tabelle 1:
Smart dots – Interessante Internetadressen

- *www.greenstar.org* – unterstützt Gemeinden in Entwicklungsländern mit Hilfe eines Netzwerkes aus internetfähigen Gemeindezentren. Das Angebot umfasst eine Kombination von Webzugängen, Bildung, Tele-Medizin, erneuerbare Energien und Kleinfinanzierungen.
- *www.viatru.com* – fördert den fairen Warenaustausch und ermöglicht Künstlern und Produzenten über E-Commerce den Zugang zu globalen Märkten.
- *www.ethical-junction.org* – ein B2C-Portal für natürliche und fair trade-Produkte; verfügt über eine eigene virtuelle ‚ethical high-street'.
- *www.greenorder.com* – eine B2B-Internetseite mit dem Ziel, Organisationen aus dem öffentlichen und privaten Sektor den Kauf von umweltfreundlichen Produkten – von Baustoffen bis hin zu Büromaterial – zu ermöglichen.
- *www.flametree.co.uk* – unterstützt Unternehmen und Mitarbeiter, die eine bessere ‚work-life balance' anstreben. Ratschläge und Beratungsleistungen zu nachhaltigen Arbeitsmustern werden über das Internet zur Verfügung gestellt.
- *www.goodcorporation.com* – ermutigt Unternehmen dazu, eine Reihe sozialer und ethischer Standards zu erfüllen, zusammengefasst in der Online-GoodCorporation Charta.

Die Beispiele aus der Tab. 1 geben nur eine Auswahl der verschiedenen Möglichkeiten wider, wie der elektronische Handel mit ökonomischen, sozialen und ökologischen Innovationen harmonisieren kann. Vieles mehr kann jedoch getan werden, um das 3D-Unternehmertum zu fördern:

- Es ist notwendig, unterstützende Netzwerke für 3D-Unternehmer einzurichten, die ihnen finanziell und beratend zur Seite stehen sowie die Geschäftsentwicklung begleiten, so dass innovative Ideen von Erfolg gekrönt sind.
- Regierungen und NGOs sollten ihre Kräfte mit denen progressiver Informationstechnologie-, Telekommunikations- sowie E-Commerce-Unternehmen vereinen und eine Art „Nachhaltigkeits-Inkubator" gründen, um auf diese Weise den 3D-Unternehmern Beratungsdienstleistungen und Startup-Kapital zur Verfügung zu stellen.
- Neue Unternehmen, die eine Notierung am Aktienmarkt anstreben, sollten dem Beispiel von eBay folgen und mindestens 1% ihrer Anteile einem wohltätigen Treuhandfonds zuteilen.
- Regierungen und NGOs müssen die Risikokapital-Branche zur Teilnahme an einem aktiveren Dialog über soziale und ökologische Fragen verpflichten sowie Anreize schaffen, damit nachhaltige Wagnisvorhaben die notwendige Unterstützung erfahren.

6. Das e-Lab Forum

Als Beitrag zu nachhaltigen Modellen in Bezug auf Innovationen und Unternehmertum rief das „Forum for the Future" vor Kurzem das e-Lab Forum ins Leben – ein Strategielabor, das sich mit der Identifizierung sozialer und ökologischer Lösungen für die New Economy beschäftigt. Das e-Lab Forum wird zu Forschungsprojekten und Konzeptentwicklungen in ganz Europa beitragen. Drei Hauptprojekte sind momentan in Gange:

6.1 Digital Europe

Das e-Lab Forum ist gerade dabei, bei einer größeren pan-europäischen Studie, dem „*Digital Europe*"-Projekt, einzusteigen, welches von der Europäischen Kommission und einem Konsortium von

Unternehmenspartnern, darunter Sun Microsystems, Vodafone, AOL, EMI und Hewlett-Packard, finanziert wird. Das „Forum for the Future" wird die führende Forschungseinrichtung in diesem Projekt sein. Wir werden mit zwei Forschungspartnern zusammenarbeiten: Dem Wuppertal Institut und der Fondazione Eni Enrico Mattei. Die Ziele des „*Digital Europe*"-Projektes sind:

- Die Quantifizierung potenzieller Beiträge von IuK-Technologien sowie dem elektronischen Geschäftsverkehr in Bezug auf Dematerialisierung, Ressourcenproduktivität und Transporteffizienz.
- Die Analyse des Verhältnisses zwischen IuK-Technologien und der sozialen Verantwortung von Unternehmen.
- Die Bewertung des Einflusses von IuK-Technologien sowie des elektronischen Geschäftsverkehrs auf nachhaltige Regionalentwicklungen.
- Die Identifikation von Chancen für eine Integration von Konzepten des „elektronischen Europas" und einer nachhaltigen Entwicklung.

6.2 e-neighbourhoods- elektronische Nachbarschaften

Ein anderer Zweig der e-Lab-Aktivitäten konzentriert sich auf den Einfluss von IuK-Technologien auf Gemeindeebene. In Zusammenarbeit mit einer Gruppe von Partnern lokaler Behörden wird unser Projekt „e-neighbourhoods" die Potenziale einer Zusammenlegung der Agenden von E-Government-Bemühungen und einer nachhaltigen Entwicklung auf lokaler Ebene hervorheben, indem IuK-Technologien genutzt werden, um die Lebensqualität zu verbessern. Gestützt auf „best practice"-Erfahrungen aus Großbritannien, Finnland, Schweden und den Vereinigten Staaten wird „e-neighbourhoods" ein Verfahrensinstrumentarium für Lokalbehörden entwickeln, mit dem Ziel, die jeweilige „best practice" herauszustellen und zu reproduzieren.

6.3 IuK-Technologien und soziale Verantwortung

Ein weiterer Bestandteil unserer Arbeit besteht schließlich in dem Versuch, das Potenzial einer Nachhaltigkeitskomponente innerhalb globaler E-Business und E-Government-Strukturen zu bewerten. Unser Schwerpunkt liegt dabei auf den geänderten Rollen und Verantwortlichkeiten von Nationalstaaten, Unternehmen und Bürgern in einer vernetzten Welt. In den Kernelementen ist die veränderte Rolle des Staatseigentums und die wachsende Informationstransparenz einbezogen. Ferner werden wir die relativen Stärken der verschiedenen Technologieplattformen im Kampf um die Überwindung des digitalen Grabens betrachten sowie der Frage nachgehen, bis zu welchem Ausmaß es sich dabei um eine Angelegenheit des kommerziellen oder des öffentlichen Sektors handelt.

Anmerkungen

Der vorliegende Beitrag wurde aus dem Englischen übersetzt von Tanja Fichtner, Universität Heidelberg. Der Originaltitel lautet: Dot-com ethics: e-business and sustainability.

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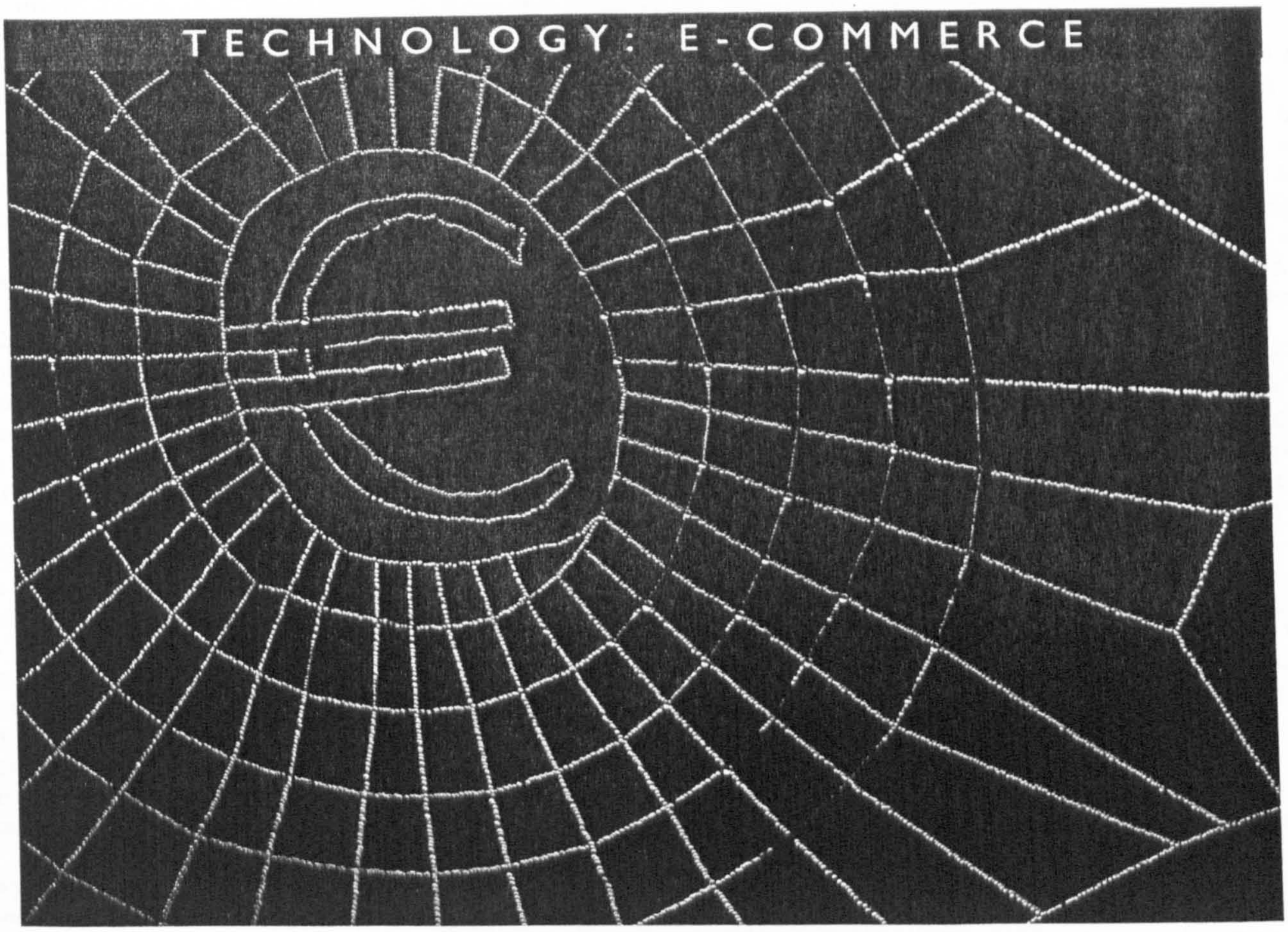

GRAY HARDEL/CORBIS

BETTER BUSINESS?

JAMES WILSDON and JONATHON PORRITT

It is argued that digital technology can be used for good or for evil purposes, but, at present, it is the military, big governments and multinational corporations that have the money, the mechanisms and the means to use digital technology to their best advantage. If the current socially unjust world order is not transformed, then even if on the periphery, NGOs, small traders and universities make use of digital technology, this will still not bring about sustainability.

In this article, the authors present the case where digital technology could be used as a tool for sustainability — but a great deal of work needs to be done to change the political and economic landscape before this can be truly ecological.

Can technology help to clean up business practice?

IT WAS LIKE a carefully planned military operation. At strategic locations across America, a fleet of 9,000 trucks revved their engines, a hundred planes rolled down the runways. Their mission: to deliver *Harry Potter and the Goblet of Fire* to a nation hungry for instant fulfilment.

It sounds crazy, but it did happen. Amazon.com teamed up with Federal Express to deliver 250,000 copies of the new Harry Potter book to eager US fans. True to the spirit of 1-click™ shopping, no effort was spared in ensuring that the book hit people's doormats on the morning of publication. A press release issued the next day declared it to be "one of the largest sales and distribution events in e-commerce history".

Over the past year, we've heard a lot about the wizardry of e-commerce. But remarkably little has been said about the wider impacts on society of the e-revolution. How will it affect jobs and local communities? What will it mean for the environment — for energy use, transport and the future shape of our cities? And how do we ensure that everyone enjoys the benefits of the new digital technologies?

Take Harry Potter. Individually wrapping 250,000 books and express air-freighting them overnight is about the most environmentally unfriendly method of distribution imaginable. It seems likely that it not only set a new record for e-commerce delivery, but also for the quantity of greenhouse gases

and packaging waste generated by a single novel.

Change is happening so fast in the digital economy that it's hard for policy-makers to keep pace. Over the past year, the Digital Futures project has tried to stand aside from the herd tendency of internet oversell to take a hard look at the impacts and opportunities of the digital economy. A consortium of three government departments — the Cabinet Office, the Department of Environment, Transport and the Regions and the Department of Trade and Industry — eight think-tanks and fourteen companies has spent a year exploring different pieces of the internet and sustainability jigsaw — from local communities and social exclusion, through to energy use, planning and transport.

As a result of this research, we recently published *Digital Futures: living in a dot.com world* which sets out ten principles for thinking about the social and environmental impacts of e-commerce:

1. Beyond the hype, there's hope ...
E-commerce creates new opportunities for environmental and social sustainability.

Despite the boom-and-bust of the dotcom startups, the significance of e-business remains undiminished. Prominent dotcoms such as Amazon.com and Lastminute.com are the most visible tip of the e-commerce iceberg. Beneath the surface, a more profound transformation is taking place, as traditional sectors embed digital technologies in their operations.

Now, in the early stages of the e-revolution, is the right time to be asking questions about the potential of e-commerce to bring wider social and environmental benefits. Unlike traditional sectors such as oil and chemicals, which have had to retrofit these concerns in response to stakeholder pressure, e-business is uniquely well-placed to incorporate them at the design stage. With the right mix of policy and business leadership, it should be possible to splice sustainability into the DNA of the new economy.

2. Access all areas
The digital revolution could spread benefits to all regions of the UK and all sectors of society.

A lot has been said about the need to bridge the 'digital divide'. Our research looked at the digital divide on a region-by-region basis, and found, unsurprisingly, that the benefits of the digital economy are spread very unevenly. The new economy has no intrinsic dynamic towards sustainable regional development. Yet if we could find ways of spreading its benefits around, it could become a powerful vehicle for regional sustainability, opening up opportunities for marginalized areas and communities.

To help this process, we've proposed a template for sustainable e-regions, which integrate policy on sustainability and the new economy and use the internet to boost virtual commuting, cut traffic congestion, promote dematerialization and promote social cohesion.

3. Community is alive and clicking
Online relationships, supported by e-commerce, can add a valuable extra dimension to real world interaction.

Some commentators have expressed fears that the internet and e-commerce will erode social relationships and undermine local communities. Our research suggests that the trend is in the opposite direction: towards the creation of online relationships as a supplement to existing social networks.

Historically, commerce and social networks have a long tradition of mutual dependency, from gentlemen's clubs to Tupperware parties. E-commerce is no exception. All sorts of social networks are being created by the internet, and it is e-commerce which is funding the technology, infrastructure and software that will enable these networks to flourish.

E-commerce could also be used to plug some of the 'leaks' in local economies, by keeping money flowing locally. Ten local shops have closed every day over the last decade, and e-commerce could help to reverse this trend, if new forms of local e-market can be developed, which provide local shops with a foothold in the e-economy.

4. 'e' is for environment
E-commerce could help to cut energy and resource use and improve environmental productivity.

Our research uncovers plenty of environmental opportunities being created by e-business. Firstly, there is scope for virtualization — the spread of intangible products like entertainment and software in the form of computer files. This is happening already: banking and accounting take place online; MP3 music files are distributed in digital form; and the Britannica.com website has replaced the need for millions of leather-bound encyclopaedias.

Environmental benefits could also flow from 'business-to-business' via e-commerce. Re-engineering supply chains through business-to-business exchanges can lead to less warehousing, less transportation and less wastage overall.

And e-commerce could also support green consumerism. Traditionally, the barriers to this have been the difficulty of accessing products and the limited availability of reliable information. The internet is ideally suited to overcoming these obstacles. It's only a matter of time before someone launches a green search engine, which would be capable of locating products on the basis of environmental or ethical performance, for example the most energy-efficient fridge, the most fuel-efficient car, or the most ethical pension.

5. HTML = Heavy traffic made lighter?
Virtual traffic can replace real traffic. With the right policy framework, e-business could create more efficient logistics and distribution systems.

If we look at the direct impacts of e-commerce on transport, there is a fair amount to be cheerful about. According to one study, home shopping could reduce shopping-related travel in Europe by 5% by 2005, and 10% by 2010. And in the business-to-business market, further efficiencies will flow from the restructuring of supply chains and the emergence of new business-to-business exchanges.

Yet there is also the potential for negative effects. E-commerce tends to make greater use of air freight in order to shorten delivery times, and of small vans to deliver products to consumers' homes:

6. Trust me, I'm a dotcom
E-commerce is changing the relationship between companies and stake-

E-business sits at a crossroads. Is it going to head down the old economy route of putting profit before planet and people, or can it lead the way towards more sustainable forms of capitalism? Amidst all the turmoil, there is everything to play for.

– Jonathon Porritt

holders, and could usher in a new era of corporate transparency.

One of the questions we examined in the project was how the new breed of e-entrepreneurs see the role of business in society. Between September and November 2000, we conducted a survey of the social and environmental attitudes of 150 e-businesses. The results were broadly positive:

- 65% said that social and environmental issues are important or very important to their company.
- 62% agreed that e-commerce will enable companies to be more responsive to consumers' ethical and environmental concerns.

However, our survey also highlighted a sharp gulf between theory and practice. On asking whether companies have any systems or policies in place to address these issues, we found that:

- 79% of companies do nothing to measure or manage their environmental impacts.
- 66% do nothing to measure or manage their social impacts.
- 83% offer no staff training on environmental or social issues.

This suggests that many e-businesses still have a lot to learn about the basic policies and systems. Closing the gap between ideals and action is a priority for any e-business seeking to establish a reputation for good corporate citizenship.

7. Right now, matter matters more (not less)

Potential environmental gains won't be realized without a concerted effort from government and business to align e-commerce with wider sustainability objectives.

At a time when so much is changing as a result of e-commerce, the last thing we want to do is slip into a sense of complacency about the inevitability of positive outcomes. Above all, we mustn't underestimate the rebound effect, whereby all the extra environmental 'space' created by new technology is instantly swallowed up by our insatiable appetite to consume ever more exotic products and services.

The lesson from the last thirty years is that technology is no panacea. Now — at this critical juncture in the development of the new economy — is precisely the time when we need to devote more effort to ensuring that innovation is channelled towards sustainability.

It's also important to reinforce that the environmental opportunities of the new economy do not make existing policies redundant. Far from it — to make the most of these opportunities we need to accelerate existing policy trends: more green taxation; stronger measures to promote sustainable transport; and increased responsibilities on manufacturers and retailers for products throughout their life cycle.

8. Smart technology needs smart institutions

Technology is developing at breakneck speed. Institutionally we're struggling to keep up. Sustainable e-business will depend not just on technological innovation, but also on social and political innovation.

At the moment much of the innovation is devoted to creating faster computers, smaller gadgets or broader band-width. Far less is devoted to the kind of 'whole system' innovation that will be needed to move the economy onto a sustainable path.

DIGITAL ARTS/CORBIS

If we look back at the nineteenth century, the extent to which the Victorians matched scientific and technological innovation with radical institutional innovation is striking. Fast forward to the revolution of the new economy, and we appear timid and cautious where the Victorians were confident and innovative.

We are scientific and technological revolutionaries, but political and institutional conservatives. The new economy will only reach its full potential if it can give rise to more complex webs of innovation around new energy systems, new transport systems, and new methods of production and consumption.

9. We need to join the dots

Partnership will be key to the creation of a sustainable digital economy. Dotcoms, dot-govs and dot-orgs will need to work together more often and in new ways.

Dotcoms are no strangers to partnership. Web success depends on forging alliances — with suppliers, technology firms and content providers. But as e-business begins to tackle sustainability, these networks must expand to include meaningful partnerships with government and NGOs. We need, literally, to join the dots. Dotcoms, dot-orgs and dot-govs need to share ideas and work together to embed sustainability in every area of the new economy.

10. It's about time

A year in cyberspace is said to be four months. As the internet accelerates the pace of life, we need to change our attitude to time and long-term responsibility.

As computers have accelerated, so have we. Despite the promise that technology would usher in an age of leisure, many of us have entered the digital age working longer hours

Appendix 6 – Seminar and conference presentations

Below is a list of all the conference and seminar presentations I made over the course of the project. The majority of these involved providing a summary of the project's aims or, in the latter stages of the project, summarising its findings.

21 January 2000	Presentation to a Department for Trade & Industry seminar on the aims of the project.
26 January 2000	Presentation to the Executive Team of the South West Regional Development Agency, designed to secure their support.
1 February 2000	Workshop presentation at the Fabian Society/SERA conference on *Environmental Modernisation*. It was at this conference that Patricia Hewitt MP formally launched the project.
21 February 2000	Presentation to the Alliance for a Sustainable Information Society 2000 conference, European Commission, Brussels.
29 February 2000	Keynote presentation at the Digital Futures scenarios workshop.
10 March 2000	Presentation to the Executive Board of the Countryside Agency on the aims of the project.
29 March 2000	Gave oral evidence to the House of Lords Committee on the European Union, as part of their inquiry into e-commerce.
3 April 2000	Keynote presentation on e-commerce at "Enlarging the EU Environment" conference in Prague, Czech Republic.
2 June 2000	Presentation of DProf project aims and learning agreement at Middlesex University (Module DPS 4521)
12 June 2000	Presentation to Alex Allan, e-Envoy at the Cabinet Office on preliminary findings of the project

11 July 2000	Workshop presentation at Warwick University Corporate Citizenship Conference
20 July 2000	Keynote presentation at e-commerce seminar at Henderson Investors. Event aimed at ethical investment community.
3 October 2000	Keynote presentation at "dot-com ethics" theme seminar, hosted by Amazon.co.uk at their headquarters in Slough.
3 October 2000	Presentation on the project (made with Jonathon Porritt) to the Policy Unit at No.10 Downing Street
24 October 2000	After dinner speech at the New York Academy of Science/ Tellus Institute symposium on e-commerce and the environment in New York, USA.
26 October 2000	Workshop presentation on e-commerce and the charitable sector at the Charities Aid Foundation annual conference, Queen Elizabeth Conference Centre, London
16 November 2000	Keynote presentation of provisional findings at the Forum Business Network seminar, hosted by Unilever.
23 November 2000	Chaired lunchtime SERA seminar on "greening the new economy", with speakers Charlie Leadbeater and Stephen Timms MP
5 December 2000	Presentation of provisional findings to Foresight communications panel at the DTI
15 February 2001	Keynote presentation at "sustainable government" conference, London
28 February 2001	Speech to Ethical Media network, London

1 March 2001	Keynote presentation at *Digital Futures* launch conference (alongside Patricia Hewitt MP, Minister for e-Commerce)
6 March 2001	BBC Business debate with John Browning, founder of First Tuesday
26 April 2001	Presentation to meeting of the Institute of Direct Marketing
15 May 2001	Keynote speech at OECD Forum 2001 on "Sustainable Development in the New Economy", OECD, Paris
16 May 2001	Presentation at Wuppertal Institute annual conference, Dusseldorf, Germany
28 June 2001	Presentation to AGM of the European Information Technology Organisation (EITO), Istanbul, Turkey
26 July 2001	Speech at Design Council e-futures seminar, London
1 October 2001	Keynote conference presentation at IMD Business School, Lausanne, Switzerland

Appendix 7 – Project budget

INCOME

Partner	(£K)	% of total budget
DTI	60	20.3
DETR	30	10.2
Amazon.co.uk	15	4.5
AOL UK	15	5
BT	15	5
BP Amoco	15	5
Ericsson	15	5
Kingfisher	15	5
Post Office	15	5
NatWest Group	15	5
Nationwide Building Society	15	5
Royal and SunAlliance	15	5
South West RDA	15	5
Sun Microsystems	15	5
Unilever	15	5
WH Smith	15	5
TOTAL INCOME	**300K**	**100**

EXPENDITURE

Activity	Organisation	Personnel	Days	Day rate (£)	Cost
Project management					
Project Co-ordinator	Forum for the Future	James Wilsdon	120	400	48,000
Research/admin support	Forum for the Future	Anna Browne	45	200	9,000
Phase 2 research					

	Demos	Ben Jupp	28	500	14,000
	Forum for the Future	James Wilsdon Jonathon Porritt	25 3	400 800	10,000 2,400
	Green Alliance	Charles Leadbeater Rebecca Willis	18 4	500 500	9,000 2,000
	Local Futures Group	Ian Christie Mark Hepworth	16 16	500 500	8,000 8,000
	New Economics Foundation	David Boyle Alex MacGillivray Bernie Ward	20 9 12	450 500 350	9,000 4,500 4,200
	SPRU	Frans Berkhout Malcolm Eames Richard Hawkins Gordon MacKerron	20 20 3 3	500 500 500 500	10,000 10,000 1,500 1,500
	TCPA	Nick Green Andy Gillespie Simon Marvin	8 12 12	350 450 450	2,800 5,400 5,400
	UK CEED/ Bradford Uni	Peter James Jonathan Selwyn	20 10	500 500	10,000 5,000
Participation in meetings, travel and expenses					
	Demos				2,000
	Forum for the Future				2,000
	Green Alliance				2,000
	Local Futures Group				2,000
	New Economics Foundation				2,000
	SPRU				2,000
	TCPA				2,000
	UK CEED/ Bradford Uni				2,500
Project leaflet design/printing					
					3,000
Phase 2 scenarios workshop					
	Forum for the Future/SPRU/ New Economics Foundation				4,000
Phase 3 theme seminars					
	Demos				2,000
	Forum for the Future				2,000
	Green Alliance				2,000

	Local Futures Group				2,000
	New Economics Foundation				2,000
	SPRU				2,000
	TCPA				2,000
	UK CEED/ Bradford Uni				2,000
Commissioning short "visions" for final report					
					7,500
Production of final report					
	Forum for the Future	James Wilsdon Jonathon Porritt	25 2	400 800	10,000 1,600
Design of final report					
					3,000
Printing of final report (1000 copies)					
					10,000
Forum & project website					
					15,000
Final conference - venue hire, publicity etc.					
					10,000
TOTAL					**273,300**
Contingency					**23,700**
GRAND TOTAL					**300,000**

Appendix 7 – Project budget

INCOME

Partner	**(£K)**	**% of total budget**
DTI	60	20.3
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Sun Microsystems	15	5
Unilever	15	5
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Research/admin support	Forum for the Future	Anna Browne	45	200	9,000
Phase 2 research					

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Participation in meetings, travel and expenses					
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	Local Futures Group				2,000
	New Economics Foundation				2,000
	SPRU				2,000
	TCPA				2,000
	UK CEED/ Bradford Uni				2,500
Project leaflet design/printing					
					3,000
Phase 2 scenarios workshop					
	Forum for the Future/SPRU/ New Economics Foundation				4,000
Phase 3 theme seminars					
	Demos				2,000
	Forum for the Future				2,000
	Green Alliance				2,000

	Local Futures Group				2,000
	New Economics Foundation				2,000
	SPRU				2,000
	TCPA				2,000
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Printing of final report (1000 copies)					
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Forum & project website					
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Final conference - venue hire, publicity etc.					
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TOTAL					**273,300**
Contingency					**23,700**
GRAND TOTAL					**300,000**

Appendix 8 – Evidence submitted to the House of Lords Select Committee on the European Union

House of Lords

Session 1999-2000
Publications on the internet
European Union Committee Publications

European Union - Minutes of Evidence

[Back to Report]

Here you can browse the Minutes of Evidence which were ordered by the House of Lords to be printed 25 July 2000.

WEDNESDAY 29 MARCH 2000

Present:

Bradshaw, L.
Brooke of Alverthorpe, L. (Chairman)
Cavendish of Furness, L.
Faulkner of Worcester, L.
O'Cathain, B.
Paul, L.
Sandberg, L.
Skelmersdale, L.

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Examination of Witnesses

MR JAMES WILSDON, Senior Policy Adviser, Forum for the Future, MR ALEX MACGILLIVRAY, Deputy Director, New Economics Foundation; and MR JON TUTCHER,

Select Committee on European Union Minutes of Evidence

Examination of Witnesses (Questions 581 - 599)

WEDNESDAY 29 MARCH 2000

MR JAMES WILSDON, MR ALEX MACGILLIVRAY AND MR JON TUTCHER

Chairman

581. Good afternoon, gentlemen. It is very kind of you to give us your time and thank you also for the paper which you submitted in advance of this afternoon's session which the Committee has had an opportunity of reading and found very enlightening, putting some flesh on the bones of your activities. It is a wide range of activities that you are, indeed, undertaking from the programme before us and we wonder if you would like to start off by saying something about the scope of the research and how far you have managed to get. It is a relatively short period since you have got off the ground but I am sure developments are already taking place.

(*Mr Wilsdon*) Certainly, my Lord Chairman. If I speak first, I work for an organisation called Forum for the Future which, for those of you who have not come across us, is a sustainable development think tank and charity set up by Jonathon Porritt and others to promote positive solutions to today's social and environmental challenges. We work a lot with business on these issues and obviously, as e-commerce has risen up the business agenda, so we from the perspective of a think tank have been looking with interest at what issues this raises for policy more widely, particular for the opportunities that it presents to promote environmental and social gains. We therefore set up this project in partnership with a group of other think tanks and NGOs and a group of companies really to try and attempt a comprehensive analysis of what is going on and what the policy opportunities are. The project was launched in February by Patricia Hewitt at a conference on environmental modernisation, and our aim is to look quite far ahead, first at 2010 and then to 2020, and to assess what the likely impacts of e-commerce and the digital economy would be on wider social and environmental trends. The way the project is structured means that there are eight themes; they are listed and I will not go through them in detail now but they cover things like social exclusion, planning, transport, energy use, regional issues and we are really just trying to look, in partnership with our corporate and government partners, at what is likely to happen and try and chart a way through these challenges.

582. I was wondering if I could ask Mr Tutcher if he could say a few words about his organisation, both at world and UK level.

(*Mr Tutcher*) As you may already know, I work for an organisation called Sun Microsystems. We are a global company with revenue somewhere approaching $15 billion a year and a market capitalisation of about $170 billion, so we are a large company with about 30,000 employees worldwide. Most of our business is being generated through power on the internet so we are an organisation that supplies the technology that drives the internet and is fuelling this new economy, and one of the reasons that we are involved and were a corporate founder of Forum for the Future and a member for the last eighteen months is that we started to see that e-commerce will revolutionise everything we do from the way we

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play, work and interact with each other. It will have a profound effect and we are just at the very start of that revolution, for want of a better word. We see ourselves as being a pioneer and a driver of that revolution and there is, therefore, some responsibility on us to look at what are the implications from a social wealth, economic wealth and environmental wealth perspective as to that revolution that we are driving.

583. What is the scale of the operation in the States, primarily?
(*Mr Tutcher*) Something like 52 per cent of our revenues comes from the US. We have two manufacturing plants in the US. The only other manufacturing plant we have is in Scotland, in Linlithgow, which generates about 38 per cent of our worldwide output. The UK is the second largest part of Sun's organisation from a revenue perspective and from an employee perspective. As I have indicated, it is the only other place outside the US that actually does manufacturing and assembly. The UK is seen, therefore, as being a very core part of Sun's empire, for want of a better word, but the US is where most of our business is driven and is where, of course, most of the internet is going on today. We are in a relatively privileged position to see and to be able to compare what is going on in the US compared to the rest of the world. We do sometimes get a rather skewed view of that given we are Californian company so most of us when we visit actually see what some would arguably call the richest part of the US. We do not tend to go that much to Chicago and places where clearly that feeds into our network.

Baroness O'Cathain

584. I am very interested in what you say because just before you started our session this afternoon I told members of the Committee that in the latest Monetary Policy Committee minutes from the Bank of England there was a statement about e-commerce saying that in the States only 0.6 per cent of total retail sales are actually carried out over the net, yet you have just said that the internet and use of the Net is much more a feature of US life, even though you did qualify that by saying it is California and not necessarily Arkansas where they all have flat trucks and do not use the internet. But do you really think that the huge use of the internet in the States is more of a cult—that is a bad word to use at the moment—or of interest for people just going into their studies, who fool around and play on the Net, talk to each other on the Net? Do you really think it is going to transform the whole way we do economic business?

(*Mr Tutcher*) Simply, yes, we do, because the retail part of it which we would call business-to-consumer is the smallest part. We see the business-to-business side of e-commerce being somewhere between 10 and 20 times the size of the actual business-to-consumer part and it is really the business-to-business end that fuels the economy much more than people buying books and CDs straight over the Net. As an example of how things are changing, there is an organisation called freemarket.com who have a very simple concept. They will fix your procurement for you, so they will go to an organisation buying commodity products and they will actually assess the quality and the volume requirements you have, and then go and search the rest of the world for suppliers of those products. The example they have used with us is simple PCBs—printed circuit boards—and in this instance they found 13 suppliers around the world who could match the volume required at the right quality in the right kind of ballpark. They then conduct a live auction on the web where the organisation who is actually going to do the buying commits to buy at a certain point in time, and those 13 suppliers bid live from a different parts of the world for that annual supply of product. Freemarket.com then plot a graph and you can see in the first half an hour there is very little movement on price but, as you get closer to the deadline, the price plummets through the floor and on this particular instance they drove a 43 per cent discount on the purchase price the organisation was paying. That has a pretty fundamental impact on how you as an organisation selling product can sell because you have to strip out all costs, you have to dematerialise the product you are selling because you cannot afford to

have that many components on board, and you have to find other ways of doing it, so there are very positive aspects from an environmental point of view to some of those things that are happening.

585. That is fine for the people buying the PCBs but what about the people producing them? Surely you then get to the stage where a lot of people are going to be put out of business?

(*Mr Tutcher*) Absolutely. There is a logical conclusion and what you have to do is add value in some way and perhaps in a commodity environment it is difficult to add value. What it clearly does is it decimates the supply chain. It gets rid of "Am I playing golf with the managing director tomorrow because great, if we are, we can talk about the business and that is fine". It gets rid of that because relationships do not play a part any more. It is purely quality and price and those sorts of issues.

Chairman

586. Mr MacGillivray?

(*Mr MacGillivray*) That is very interesting. I am from the New Economics Foundation and we were set up 15 years ago, before "new economy" came to mean the digital economy. We had something else in mind when we named ourselves but we have reacted to the challenge that everyone else sees it as being the digital economy. One aspect we will be looking at in this study is some of the less expected social rebound effects, the second order effects, of the revolution in e-commerce—particularly at the impact on UK communities but, with your prompting, it is interesting to start thinking about suppliers in the distant past as well. There will be quite a lot to look at just in the UK because one of the effects that you can predict in terms of business-to-consumer e-commerce is that people who have connections will be able to get the best prices and therefore, by implication, people who do not have a connection will get the worst prices. If that follows the current pattern then you can assume that affluent people will be getting better prices by searching around and organising buyer's clubs on the internet. That is one of the things we will look at and the government's report yesterday from the policy action team of the social exclusion unit talking about closing the digital divide is a welcome contribution. There is no known prescription there about how to make sure that e-commerce does not increase social exclusion. There is a lot of sentiment there. We will also look at how you can take concrete steps to make sure that low income people benefit from this as much as, if not more than, more affluent people.

587. One of the omissions as I saw it, following Lady O'Cathain's point, is the topic of jobs. Looking at the eight subjects, I see you have social inclusion/exclusion. Maybe jobs figure there, or do they not? We have heard after Lisbon that all these jobs are going to be created and we are certain that there will be many new ones created, but the downside is never mentioned. Are you doing any work in this area?

(*Mr Wilsdon*) Yes, we are. You are right in that there is not a theme that takes jobs as its headline, if you like, but certainly it will be featuring as an important part of New Economics Foundation's work.

588. Is there any reason why it did not figure in its own right?

(*Mr Wilsdon*) No. It is more of a cross-cutting issue really that features in several of the themes. I think it is always hard with a subject as vast as this and so many areas that one could look at to know how to cut the cake. The theme that will look at jobs in some detail is the work being done by the Local Futures Group under the title e-regions. The Local Futures Group has done some very interesting work already and is doing more in an on-going way for the DTI looking at the economic geography of the knowledge economy, looking at the different patterns of job creation and job loss that will arise out of the knowledge economy over the next 5/10 years so it will be doing some work for us there and

picking up on many of the RDA economic strategies and the focus there is in those strategies on e-commerce and the knowledge economy as a driver and generator of new jobs.

589. Are we going to get a comprehensive view of the future for jobs on the negative side? I am not asking you to do it but, if you are not doing it, are other parts of the public community endeavouring to do it? Are you confident it is being fully examined?
(*Mr MacGillivray*) I think it would be a good idea to go back to the e-Europe Information Society project, and flicking through their document here it is pretty weak on working out what the impact on jobs is. It mentions a figure for the US of Internet-related jobs but no figure for Internet-related loss of jobs and no figures at all for Europe so someone at the European level ought to look at this.

590. You are having a bit of a stab at it but not necessarily covering the whole aspect?
(*Mr Wilsdon*) It is so hard, there are so many variables in this debate that are, as yet, almost impossible to pin down that we certainly would not pretend to be providing a full overview of this. What we want to do is point to some of the potential pitfalls and some of the opportunities. Just picking up on another point raised about jobs further afield, particularly in the developing world, that is something we will be looking at in what we call sustainable e-business. We there want to look at how companies that have an existing commitment to corporate social responsibility can carry that over to this new world of on-line commerce and we want to look at issues around labour conditions in the developing world, supply chain issues, codes of conduct, and try and again look at ways from a voluntary perspective as opposed to from a government regulatory perspective. Companies can proactively implement strategies and policies that will protect and enhance the livelihoods of workers overseas rather than pushing more of them into poverty.

Lord Bradshaw

591. I would like to take you to a totally different area. We have heard for a long time about the impact of e-commerce on jobs and business. I work in the area basically of providing transport infrastructure and there is nothing the Treasury like better than lots of uncertainty because that allows them to postpone any decisions on investment for ever and ever. Now we are looking at several river crossings in east London and at the refranchising of the rail passenger services and we have to work on predictions of levels of commuting, levels of movement between regions—the whole issue of regeneration of Thames gateway. I really want to ask you what firm evidence there is of the likely effects of e-commerce on employment; to confine it we will take the London commuting region but the effects are obvious elsewhere. What evidence is there which would lead you to suggest that e-commerce will have an effect either way?
(*Mr MacGillivray*) You have to pick the types of impact and, in terms of an aggregate, I am not aware of any evidence that would come up with a number saying "Therefore the total is plus X thousand new jobs or minus X thousand loss of existing jobs", but I think in terms of the transport side of the question there is emerging evidence that there will be increased transit and increased freight and therefore, by implication, an increased number of jobs in delivery industries. There is a reduction in transport because of increased possibilities of telecommuting and those may or may not be roughly about the same and balance out, so you would look at a shift in transport from personal travel to freight, perhaps. British Telecom, who are one of the partners, have started to look at some of these impacts and have done quite a lot of study on telecommuting and certainly there is evidence from the US that shows that increased e-commerce can generate reduction in individual commuting. It seems, anecdotally at least, that the white van culture means there is going to be evidence of an increase in small transit movements.

Chairman

592. It is not substantial though, is it?
(*Mr MacGillivray*) It is not substantial yet and we hope to be generating some more concrete evidence in this area. Also, we are trying to examine and pioneer some schemes where socially excluded and deprived neighbourhoods are wired up with certain schemes such as time banking, which the Economics Foundation has been promoting in the UK following from the US, and these types of networks do increase the skills of low-skilled unemployed people. There is evidence from the US that that enables people to get into the job market for the first time so while you can imagine there will be some loss from, for example, the Pringles factory in Scotland being bought by Fane Brothers, correspondingly you can expect to have people coming in as a result of getting increased skills and confidence from excluded areas. So, again, I am not sure what the net balance would be but there will be a lot of significant movement in subsectors and we will wait and see what the overall effect looks as though it has been.

Lord Bradshaw

593. It is difficult to understand. You get areas of deprivation cheek by jowl with areas of considerable affluence so you get a lot of people in east London almost looking out on areas of very great affluence and certainly in Oxford there are two wards in the county with extreme deprivation surrounded by areas where there is a lot of affluence and where the overall unemployment level is 1.6 per cent. Why do you believe that e-commerce is going to be of any benefit to what I almost call the hard to employ, the hard core unemployed? Why is it going to get them back into work?
(*Mr MacGillivray*) I think that our project, without being too modest about it, aims to explode some of the myths—and that may be one of them—and to try and assemble all of the evidence from where it currently is and have a really good hard look at it.

Chairman

594. You were saying earlier that there are some examples in the States. Which part of the States do they come from?
(*Mr MacGillivray*) There are about 200 initiatives in the US at the moment. They have been particularly prevalent in the Washington DC area because the Time Dollars Institute is located there but they are quite widely spread out.

595. Could you give us, as a supplementary after the meeting, some further information about that because we are going to Washington?
(*Mr MacGillivray*) I would be delighted to.

Lord Cavendish of Furness

596. Lord Bradshaw had a myth which you were about to explode. What was the myth?
(*Mr MacGillivray*) The myth, I think, is that e-commerce will necessarily include socially excluded people and generate jobs for them.

Lord Bradshaw

597. Yes.
(*Mr MacGillivray*) There is evidence that that happens in small quantities even from LETs schemes which are quite prevalent in the UK. They do generate employment but of a small order and it is quite incremental compared to substantial job losses from factories.

598. My experience of local economic trading schemes is that it is the middle classes who simply swap macrame lessons for baby-sitting, not the hard core unemployed.
(*Mr MacGillivray*) One of the things we are really trying to do with this study is, if you

like, to move the debate beyond questions around access to the internet. Government is doing some great things in this area. In the report yesterday, the Prime Minister's target for 2005, there is some great activity going on but social exclusion in e-commerce is not just about making sure everyone has a PC in their local library. We are interested in looking at how e-commerce affects quality of life in a more general sense, the opportunities that this technology provides to change the planning system, to create new forms of settlement, new types of cities, to cut congestion, to cut childhood asthma—these second order effects that are not actually directly to do with the technology. The technology, if you like, is a means to an end but it is not an end in itself and currently, certainly in terms of the strategy from Europe and a lot of the material coming out of the UK government, there is an understandable focus on the immediate horizon which is to maximise the number of people in our society who can use this material and who can get the immediate consumer benefits, if you like, from logging on. We want to look five/ten years beyond that at what the rebound knock-on effects are for society.

Lord Skelmersdale

599. Can I try and marry up the two questions and ask all three of you, given that business-to-business e-commerce has grown exponentially over the last five to seven years and that business-to-consumer has failed by comparison, what should either the British government or the European Community itself do to facilitate that? In other words, what are the inhibitions and how should we deal with them?

(*Mr Tutcher*) It is our belief that government has a very pivotal role to play in what is going on. I think those people involved in e-commerce to some degree, particularly the entrepreneurial community, consider government to be almost an irrelevance; they are going to just go and do whatever they do, but it has a much wider impact for all those people who are not true entrepreneurs at this moment, in areas like skills and education. The government has laid down or is starting to lay down some targets in terms of what each school child should come out with in terms of literacy and numeracy and in relation to IT as well. I am not sure whether those targets accurately or truly reflect what an employer wants when somebody comes out. I do not think those targets are quite as explicit as saying, "This child can create a web site, can create something that could facilitate e-commerce", for example, and there may need to be explicit targets along those lines that are easily measured and have direct relevance to the areas we are talking about. A classic example is India. India today is becoming a real software powerhouse and it has effectively come from nowhere to do that. There is a huge amount of investment—and Sun is one company—because (a) they are very good at doing what they are doing and they are very highly educated and (b) the cost of the work force today is not that high, although it is growing pretty rapidly, so we will get to the point where some of those trade-off decisions are being made about where investments are going, but the primary one is the quality of the education and the quality of that person coming out.

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Examination of Witnesses (Questions 600 - 619)

WEDNESDAY 29 MARCH 2000

MR JAMES WILSDON, MR ALEX MACGILLIVRAY AND MR JON TUTCHER

600. That is all very interesting but it does not actually answer my question which was what can the British government and/or the European Community do to increase the growth of retail trading in the e-commerce?
(*Mr Tutcher*) It has started to do some things in terms of the e-communications Bill currently going through and we are expecting Royal Assent later on in the spring. That we believe will provide enhanced confidence and trust that security measures are in place. There is a downside we believe in that the RIP Bill may well have a detrimental effect overall in that people may not trust the system they are using; it may add an additional overhead into the service provider community delivering those services to businesses and, therefore, our concern is that the UK may not be as competitive in what is now becoming a global market place. The EU, therefore, has a role and the government needs to prompt the EU—and is doing so through the EU initiative, I think—to have equivalent standards across Europe and what we would like to see is equivalent standards across the world. Another example would be how you treat tax from an e-commerce perspective. It is treated in-country or wherever the server is sourced? If we start to have differences across the world—and we have to recognise that we are in a competitive environment here in the UK—we want to be the best place to trade electronically but so does Ireland, France and every other country, and most of the Third World countries see it as a great opportunity to pull e-commerce away from the existing power base which is western Europe and the United States. So harmonisation should be a priority for the government.

601. Is that going to sell another car, for example?
(*Mr Tutcher*) Ultimately it may well do.

Baroness O'Cathain

602. They do not want to sell cars; they want to cut down emissions.
(*Mr Wilsdon*) To come back to your question, it is somewhat premature to say that retail e-commerce has failed—

Lord Skelmersdale

603. I said by comparison, which is what Mr Tutcher said earlier.
(*Mr Wilsdon*) Yes, but obviously, if the predictions for the take-up of initially PCs then digital TV and mobile phones are correct then I think we are just at the very beginning of a genuine explosion. That said, it is obviously wrong and foolish for government or for business or anyone to pretend we are all going to suddenly buy everything online. Sometimes in the rhetoric of dot-com entrepreneurs and of government there is this sense that we may as well pack up the high streets and go home, and we are all going to be sitting there tapping away, which is ridiculously naive. There are very negative developments that

could arise out of the growth in retail e-commerce if we think, for example, about the impact on high streets and particularly rural shops. You could end up with what we might call the digital doughnut where you have inner cities and people tapping away at home on their computer, with most of the shops having shut down, who go out at the weekends to retail leisure parks to enjoy the weekend social experience of shopping. That is obviously the worst case scenario but there are other ways you can evolve retail e-commerce alongside conventional commerce that would be far more beneficial to society. We are interested at looking at those different opportunities and charting the best way forward.
(*Mr MacGillivray*) It is a very concrete observation which is something that has already happened and we hope the results will be taken seriously. The Department of Trade & Industry and the Department of Environment, Transport and the Regions have asked to us look into differentiating a little about which types of commerce over the internet are environmentally and socially beneficial and which are not, and if they take note of that then the role of government will be much clearer because hopefully they will realise it is not their job to promote all and sundry kinds of e-commerce willy nilly but, if they want to use their influence for social progress and environmental sustainability, they will be able to differentiate a little more clearly than they do now, whether you are buying a Mig fighter pilot on lastminute.com, for example, as opposed to some sort of dematerialised music online where you can see some instantaneous benefits. So we hope people will take note of a little bit of clarity by this time next year.

Chairman

604. On this point, are there any emergent findings yet?
(*Mr Wilsdon*) No. The project started in February so it is still far too early. We are very grateful for the chance to tell you about what we are doing.

605. So there is nothing you can tell us immediately?
(*Mr Wilsdon*) We cannot give you any concrete recommendations as yet.

Lord Cavendish of Furness

606. Could I bundle three questions into one? The first is I do not have a feel for the technical side and I would like to ask about the e-technology world and how many players with the same sort of capitalisation are operating? What sort of competition is around? Secondly, you gave an example of who might be disemployed when you talked about the decimation of the supplier chain, so you have those people and you can say whether they are likely to go into the jobs created—there is a plus or minus balance sheet there. Experience suggests that the poor do not benefit from anything new and I do not know what is different about this. Furthermore, there has been another trend which started in America and came here but which is probably not in mainland Europe which is governments creating a lot of competition at the bottom of the labour market so that you do not get strikes. Again, I would have thought this would mean an exaggerated effect of the supply chain being decimated; the bottom end of the labour market not getting help made worse because that labour market is not getting so competitive. Thirdly, there is a growing expectation put around by all politicians that people deserve and have coming to them greater protection and greater redress, and surely this is going to reverse that and will hit, again, the poor who are least able to cope?
(*Mr Tutcher*) From a competition point of view with regard to the technology that drives what we are doing, there are companies ranging from Microsoft as the largest through Sisco, the next, right through Oracle, ourselves, right down to very small players and the common theme from what you are saying is that the poor generally do not benefit from new areas. The bottom line is that the cost of entry into this kind of market place is amazingly low compared to historical new market places and there is plenty of evidence of entrepreneurial individuals and small companies here in the UK who have established

themselves and are making a great success in this market place.

607. Entrepreneurs always bubble up, do they not?
(*Mr Tutcher*) Maybe they do. I think the opportunity for people to do that is much greater in this market place than previously so I think there is a large cross-section of technology companies who are involved. To date there has not been any company who has been able to establish itself in the same way as Microsoft has and the PC, what one might call a very dominant market share, partly because the internet is all about open standards and about sharing information about companies and partnering, so I think there is a real opportunity here for UK companies to establish themselves on a world market base and we already have one of those in Psion/Simbia who have a great piece of technology. I think, therefore, that there is real competition. I would not want to see us doing anything that would clearly reduce the amount of competition we have because choice is good for the consumer, and it is innovation that derives from that. So it all comes down to the cost of entry being very low.
(*Mr MacGillivray*) One observation is that if you wanted to do something very soon before our findings come out, you might invite an organisation called First Tuesday to come and give evidence—

Chairman

608. We have.
(*Mr MacGillivray*)—and hear what their view is on whether this revolution is intended to benefit the poor or not because we certainly have not had all that much response from them in terms of contributing to this study, so far.

Baroness O'Cathain: I am not surprised.

Chairman: They are very much into the free market and I do not think sustainability actually figures at all.

Baroness O'Cathain

609. "The poor we can live without".
(*Mr MacGillivray*) One of the things that came out of the discussion organised by the Fabian Society yesterday lunchtime was that so far the social entrepreneurship in this area has been a bit lacking and we had hoped to find over the course of our studies some real examples of interesting new ideas coming up intended for social benefit primarily—even maybe not for profit. Some of the material around so far is a bit dull and I think that is recognised in the government's report. There are some rather worthy community internet projects not likely to captivate low income people. Quite a lot of energy needs to go into that and we hope we will stir up enthusiasm for that. It is lagging behind a bit at the moment.
(*Mr Wilsdon*) On the point about First Tuesday, I read with interest First Tuesday's submission to you and I was very interested to see the role they think government had in all of this. One of our target audiences out of this process is very much that dot-com community, those young entrepreneurs driving a lot of this. What we would like and hope to achieve is some engagement from them in the social and environmental opportunities in the technology that they are promulgating. As we have said, we had real difficulties when we were setting this up; we put a lot of effort into getting one or two start-ups to join the consortium of companies and met with a stoney wall of silence, really, and government certainly has a role here in calling on these entrepreneurs to raise their sights from their IPO or their next million pounds through share options, or whatever, and to start thinking about their responsibilities as business men and business women to society in a wider sense. That is certainly what we want to push. We, and NEF for that matter, work with progressive

companies on these issues and there is no sign yet that these new companies are starting to feel pressure from stakeholders to take these things on board and we want to urge them to do that.

Lord Cavendish of Furness

610. But are they going to get jobs by the expansion of e-commerce? I have not heard a suggestion that they will.
(*Mr Tutcher*) Our view is that you have to be adding value in whatever you do, so if you are involved in a relatively low value/low value add industry then you have to find other ways of servicing your customer or for that customer to come to you and there are plenty of other organisations round the world who will do that in your place if you cannot do that, which means you may need to find another niche. Our belief is that the net result is that there will be jobs lost but jobs gained elsewhere by virtue of the low barriers of entry into this new market place but you have to be skilled to be able to go and do that. So it comes back to the education point.

611. I am not happy. The question is that unemployment is a vile and horrible, almost universal, problem. I think the anxiety has been expressed here that this could create it and growth will not help the very people pushed out. They are at a different level and are not necessarily the entrepreneurs. However cheap it is, of course there will be some. I am trying to get a feel of the impact of unemployment which we are just coming out of. Is there going to give another twist to the old problem of unemployment?
(*Mr MacGillivray*) I do not think there is a straight answer to that. One possible effect you could imagine is a shift from people working in the service sector to manufacturing. For instance, if you take the case of books, which is one of the areas that is beginning to succeed now in the UK, you would imagine there will be a loss of jobs in bookshops and an increase of jobs in distribution centres, packaging up books in these very large distribution centres that hold a lot of titles. Now you might argue that (a) they might be different people, because the craft of being a bookseller is not the same as the craft of being a distribution packager and (b) that it sounds as though it is going to be a less desirable job, so it is certainly possible to plan out, theoretically at least, some negative effect there. On the other hand, you can also start to think about some improved jobs as well in terms of some of the distribution work that already goes on so we will try and have a look at that.

Lord Paul

612. One of the advantages spoken about e-commerce business-to-business or e-commerce retail is that it will bring costs down. I am seeing in my own business that the costs of purchasing have come down, but on the other hand the costs have gone down on selling so I am not sure who wins in the end. Listening to Mr Tutcher talking about freemarket.com and the saving of the 3 per cent, would this not lead to a lot of companies going into bankruptcy which will create more and more monopolies? If there are no antimonopoly laws and no competition laws, where is the business going to be? In the end, would the consumer not pay much more, after a lot of bodies lost lying on the way? Secondly, the Lisbon summit ended giving figures of 20,000 more jobs for Britain. What is the guarantee? Why not China? Why not India? Is it pie in the sky? Here we are losing jobs in the manufacturing industry partly because of dot-com. Everybody knows the prices are cheaper, etc, but then we hear that there will be 20,000 more jobs. There might be 20,000 jobs but are they all going to be in Britain? Thirdly, and I find this specially worrying, dot-com business is in fashion and, as Mr Tutcher said, a lot of Indians are involved in it. For the last year I have had a request every week from somebody wanting to start a company saying that he has done a lot of work and would I be the chairman, and I have been declining every week for this reason only: that if it does not take off all those expectations that you are going to be a billionaire overnight will disappear. What is the answer to these young boys and girls,

working very hard to set up these businesses? They almost think I am arrogant that I do not want to accept their chairmanship but I genuinely ask whether it is for real.
(*Mr MacGillivray*) On the guaranteeing of jobs, at the moment, certainly, a lot of the jobs are not virtual and therefore they need to be done in Britain if the market is in Britain. For example, book distribution is not something that can be out-sourced to India—certainly yet—until we become more virtual five/ten years down the line so currently there is a reasonable guarantee that a large majority of the jobs being generated need to be close to the market. One very important potential source of not necessarily new jobs but of safeguarding existing jobs is if a clever solution can be worked out for the future role of post offices in the UK as centres for e-commerce, e-government and so on, and the performance and innovation unit is looking at various solutions at the moment and is going to report in July on this. It does not seem at the moment clear what the solution is but there are 20-30,000 post offices with an uncertain future and there ought to be something pretty concrete coming out of e-commerce to make the future look brighter for them and, again, rooted in the UK—at least until we start thinking about out-sourcing benefits administration to other countries, which I hope would be somewhere off.

613. I am not sure I agree with you. If there was another dot-com for selling books, you could have this system anywhere in the world. You could have a warehouse in Jersey because you will not have any tax, so what makes it a necessity for having it in Britain?

Baroness O'Cathain: You are talking about the delivery, are you?

Lord Paul: When I say delivery—

Baroness O'Cathain: Well, the post office is ideal.

Lord Paul

614. But the books have to come from somewhere.
(*Mr MacGillivray*) Yes. One view long term is that books get printed very close or maybe they never get printed at all and get down-loaded on to screens but certainly, at the moment, certainly best sellers get printed pretty close to where they are going to be bought because they weigh too much to get freighted around. Thirdly, a lot of people say that only 30 per cent, if that, of dot-coms are going to make it so you should only accept three out of ten offers of chairmanship and choose very carefully!

Lord Faulkner of Worcester

615. Could I press Mr Wilsdon on a quote he gave to The Guardian which you were brave enough to include in your evidence where you say, "The jury is still out on whether the digital economy will evolve into a powerful ally of sustainable development, or a spur to greater social exclusion and environmental destruction." It is one or the other and you are on that jury, so which way would you be voting?
(*Mr Wilsdon*) The entire purpose of our project is for us to find out and I think it would be wrong to prejudge the research we are going to do. Our disposition, if you like, going into the inquiry was to focus on the opportunities. The Green movement traditionally is often accused of being luddite about new technologies; we are not trying to hammer e-commerce or the potential that it offers society. We very much want to go with the flow, if you like, of all the great new innovations that it brings about but just to make sure that government and business is looking at some of these wider impacts.

616. What more do you think government can do to achieve sustainable development as part of this process?
(*Mr Wilsdon*) That is a very big question. There is a lot government needs to do and

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obviously we will be recommending specifics in key areas. Take transport, for example. You read the Transport White Paper and, unless I missed it, there is no reference in there at any point—or even in John Prescott's subsequent ten year transport strategy that came out last November—to the impact of all of this on transport and it seems to me a glaring lack of joined-up government. It is obvious that out of this local distribution we could have the white van man taking over. There will be people buzzing books and groceries and Heaven knows what all over the place. Equally, it could be very positive in terms of people reducing the amount of time they need to get in their cars to go shopping. DETR are funding in part the work we are doing and we are grateful to them. I think certainly the people in government who are looking ahead and thinking strategically long term about transport trends in the UK need to be taking this very seriously and I do not yet see much evidence of that. The same applies to planning and a number of areas. There is very little clarity at the moment on what this means for energy use. There are obviously sectors where what we call dematerialisation, reducing the energy material flow into goods and services, can be achieved through e-commerce. For instance, on-line banking or down-loading MP3 records rather than going and buying a piece of plastic in a record shop. In a wider sense there are all sorts of energy savings that could arise, particularly through business-to-business e-commerce, as we improve supply chain efficiency in environmental terms as much as economic terms, but there is a lot of uncertainty and a great need for joined-up government in this area.

Chairman

617. You have already identified some recommendations you could make. One was that Mr Prescott's White Paper for the next ten years did not have anything about e-commerce in it.

(*Mr Wilsdon*) That would be me speaking from Forum for the Future. Our inquiry process will come up with recommendations from us as a consortium. There are a number of things that I as a representative of an environmental NGO could say that I think government should or should not do, for example, freight. Obviously this e-commerce could dramatically increase the international flow of goods. A lot of those would come by plane and we all know the impact that aviation is already having on global warming and the predictions for the percentage contribution that aviation is making to global warming will obviously go up. Unless government and international regulatory authorities get the fiscal structures right around aviation—tax aviation fuel or whatever—e-commerce could create a negative environmental impact in that sense. There are lots of specific examples we could give.

Baroness O'Cathain

618. I am going to twist this round again now. I am fascinated with what you have said and that you have got together to do this study. You have some real hard hitters supporting you, like BP Amoco, BT, Ericsson, Kingfisher, The Post Office, NatWest Group, Nationwide Building Society, Royal & Sun Alliance, Sun Microsystems, Unilever, etc, etc. They, of course, if they were approached by a group of young people like you, enthusiastic and into sustainable energy and development and really thinking about the planet, will say "Yes, this is a good thing to do", but do you think they are fully engaged in this process? Quite seriously, inertia is setting in to large organisations and it will just be seen as a nod in the right direction, "Get the community resources budget, give them a few hundred thousand let them get on with it", I would like to know what your views are. Secondly, jobs. Can I suggest to you three young people that you really do not understand the impact of unemployment, the real social impact of unemployment, in areas other than the places you see and also that, hand in hand with the impact of the fact that now some 39 per cent of households in this country are single person households, do you think that e-commerce is a good thing to try and push for all these people, so that they become even more socially

excluded by staying in their own homes? I see in your document you talk about people not travelling as much and not going by car but shopping is their one way of social inclusion. Secondly, we have all these great projections about how much you can buy on the net—for instance, all your groceries—but 39 per cent of households do not buy very many groceries and they use their shopping expeditions as socially inclusive operations, so there are a lot of social implications here and I am just wondering if these big hitters are going to help you on all of that.

(*Mr Wilsdon*) Certainly we can ask John Tutcher as a representative of one of the corporates to give his view. From our perspective, we are a charity; we do a lot of work with big business—and we are not just young people—well, we three are but Jonathon Porritt heads up my organisation, and he is getting a bit more grey around the ears these days! So far as the businesses that we work with are concerned, we only really go to businesses if they seem to us to have a genuine engagement in these issues. Obviously one can argue about the extent to which that is PR driven and the extent to which it is genuine. The reality is that in most corporations there are people who are committed who are trying to push these issues and people who are not. Certainly a number of the companies you mention that we are working with, BP Amoco, BT, Sun—several of the companies in the consortium—do have very good track records in this area, particularly on the environment, and it is that track record that has attracted us to going and approaching them about these issues. There is always a danger, however, in that in the think tank, charity world you need funding and support to do this kind of work. Government very generously has given us some money but that is dependent on us getting matched funding from the corporate sector, so we are always dependent on the philanthropic support of progressive businesses, and we are very grateful to them for that.

(*Mr MacGillivray*) There are a couple of promising signs; one is that we are asking the companies to commit more than just money because money is quite easy for them to commit, especially such modest sums as we are asking for on this project. We are asking for time as well which is much more of a crunch and those organisations are all committed to be active in the research process and to provide time, which I always take as an indicator of how serious people are. Also some of these organisations are up against it in one way or another and, particularly for the Post Office, Nat West and BT, this would be a time when you would not expect them necessarily to be messing around with frills so I think there is an indication that they take this very seriously and even when times are hard they are prepared to go this route. On the downside, we notably have not managed to get a food retailer on to the project despite trying quite hard and your points about some of the easy assumptions about the benefits, particularly for single parent households, of shopping on-line with people just being driven deeper and deeper into their homes by this and the idea of the internet meaning no provision needs to be made for disabled people, another very important group who could lose out here, need to be challenged and we need to go and talk to some other companies who are not sponsoring this and work on them.

Chairman

619. As one of the subscribers, Mr Tutcher, would you like to make a point?

(*Mr Tutcher*) It is interesting to note that some of the retail organisations today that are considered to be successful are actually going in the reverse direction. If you look at, for instance, Gap, they have a very successful online business and a very successful bricks business and I think the generally held view is you have to have a balance of those two to be a success. Without being able to see the conclusions that will come out of this project, I do not think we see a Doomsday scenario that says that the high street is going to close down, so people will still have interaction at a shopping level. The experience inside my own company so far is that people use on-line shopping, particularly retail shopping, to take some of the chore out of the things you buy every week, maybe some of the heavier items, and most of the people who get all those things delivered to work—which is where it happens today—still go to the supermarket to buy some of the luxury goods, so they still

continue to shop and interact. Clearly, one of the outputs from this project will be to look at is there an increase in the number of people who are staying at home for longer rather than coming out. Going back to one of the earlier points, it is interesting to note that amazon.com, which is a US organisation, actually does have a UK organisation—amazon.co.uk—so there is a requirement to do that locally which does have an impact on employment in some way, and we have discussed that. In terms of single households, rhetorically the jury is very much out on that. We as an organisation have the ability to work flexibly, so there are some days I can work at home, I can log on to the system, I do not go into the office. I suspect, as the ability to do that increases, and some of that is driven by the cost of access and by the availability of band width and those things, as that becomes much more readily available the opportunity to work at home will increase. Inside Sun Microsystems, people still go into the office because they still want interaction.

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Examination of Witnesses (Questions 620 - 630)

WEDNESDAY 29 MARCH 2000

MR JAMES WILSDON, MR ALEX MACGILLIVRAY AND MR JON TUTCHER

620. And always will.
(*Mr Tutcher*) That is something we would not want to stop. Just as we may all frown on smoking and smoking rooms and all those things, there is actually a lot of good communication which happens in some smoking rooms, so we would not want to cut down on people coming into the office, we would not want to see that interaction reduced by virtue of being able to work virtually.

Chairman

621. Can I move on to another area now? Looking at the work you are undertaking, is there similar work being undertaken in other countries? In particular, in the most successful, the furthest advanced with e-commerce—the States, Scandinavia, maybe Sweden and Finland—has work been done there? How are they dealing with these issues? They are further advanced in some respects than we are.
(*Mr Wilsdon*) When we were setting up this project, we did do quite a comprehensive search for similar initiatives both within Europe and further afield. There are studies which have been done, there has been a lot more work done on the social side than there has been on the environmental side. Some very interesting work has gone on in the States, sponsored by the US Government and done by NGOs and community organisations. On the environmental side, there is more interest now and we have seen quite a lot of work appearing in the last six months or so. There was quite an interesting report published in the States in December by an academic called Joseph Romm which looked at the impact of the digital economy and particularly of e-commerce on global warming in the context of what the new economy is doing in the States. He came up with some very optimistic conclusions as to the percentage of CO 2 emission reductions which are going to be achieved through this route. Some have criticised him for perhaps under-estimating the rebound effect in all of this, in that yes, people save energy in some ways but then they obviously use more energy in other ways—they go and buy more new products or they travel further to do other things apart from going to Tesco or whatever. I think that is true. Within Europe, the Commission has for a couple of years now sponsored a project called ASIS, the Alliance for a Sustainable Information Society, which is looking more widely than just e-commerce, it is looking at all information communication technologies but is very much looking at them through the prism of sustainable development and trying to weigh up the economic, social and environmental consequences. ASIS has produced some interesting pieces of work from all sorts of European countries. There was a conference in February which I attended on our behalf and we made some useful links with people there and will be pursuing those over the coming months.

622. That was going to be my next question. How are you going to link up with initiatives elsewhere?

(*Mr Wilsdon*) We will be talking to quite a few of these organisations. There is another big initiative going on in the States at the moment run by a body called the World Resources Institute. They have a big programme called the Digital Dividend which is about the social and environmental dividend which IT and e-commerce will bring. So we will be talking to all these people and hopefully forging links. Our focus in terms of our outputs is primarily the UK in that we are making recommendations to the UK Government, to local authorities, regional development agencies and UK business. Obviously, though, e-commerce is global and you cannot put a ring around it in that sense. That is a challenge for us, I am sure it is a challenge for you in your enquiry as well. It is hard from a government perspective to grapple with something which by its very nature is global.

623. I am conscious this afternoon we have concentrated primarily on the social issues rather than the environmental ones, I was wondering if there is anything you feel in particular we might be saying about what Europe might be able to do further on the environmental aspects?

(*Mr Wilsdon*) I think it would be a very valuable thing if the Commission were to be carrying out research similar to what we are doing here in the UK but looking more widely across Europe. There is a great need, as we have said, for more analysis of these issues and I do not think we are yet at a stage where we can make firm predictions or firm recommendations. As I say, the Commission has been funding some work but nothing which has looked as comprehensively as we are hoping to do in the UK.

(*Mr MacGillivray*) I certainly take on board the interest in the question about jobs at the macro-level. We have been thinking rather more about particular impacts in deprived neighbourhoods which we certainly do not intend to ignore, but in terms of the more macro-picture and, if you like, the middle men and women and the impact which came up from Lord Cavendish, that is something which would be very suitable for the Commission to do some research on at the European level, as they have done quite a lot with other sectoral studies.

Lord Skelmersdale: Many years ago I did an economics course and the one thing which I have retained from it is that economics is an historical science—

Baroness O'Cathain: Really!

Lord Skelmersdale

624.—in that you cannot predict the future from it with any degree of accuracy. Would you not say the same is true of your research?

(*Mr MacGillivray*) Personally, I think I probably agree with you, but in terms of the metaphor of us being the jury which is deliberating, the important thing to emphasise about this is that the e-commerce revolution has not happened yet and is not inevitable yet. It is not one of these mysterious forces of globalisation which will steamroller over this country. There are a huge number of policy interventions which can be made to steer it one way or the other. So as well as being the jury, it would be nice to somehow shape the outcome of this, because it is not something people are powerless to change. Economics is not the tool to do that but there are ways that the future can be shaped, maybe not predicted entirely but certainly shaped and nudged in a certain direction. I think it is fairly clear from what we have said that we are not completely dispassionate about what we are going to find over the next year and what we will be recommending.

(*Mr Wilsdon*) Absolutely. I agree with you, it is going to be very hard to predict in any firm way, but I do not think that removes the obligation on Government, on business, on the policy-making community of which we as Think Tanks are a part, to grapple with these issues in a serious way.

Baroness O'Cathain

625. Absolutely right.
(*Mr Wilsdon*) We are using in methodological terms a scenario-based approach which does enable us to have a bit of flexibility in the way we think about the future. We are not saying, "This is what it is going to look like", we will map out three or four possible worlds if you like and then use those as the under-pinning basis for the research we are doing on specific themes, and the purpose of that is precisely to try and overcome this problem of not knowing.

Lord Skelmersdale

626. The other problem we have, of course, is that the whole ball game is moving so fast it is likely to be out of date before you get round to publishing it.
(*Mr Wilsdon*) Absolutely. We must not forget however many internet years there are to a calendar year.

627. You are clearly conscious of that fact?
(*Mr Wilsdon*) We are, very.

Lord Skelmersdale: Although I might have done, I did not set out to annoy Lady O'Cathain. It was a serious question. I am glad you are treating it seriously.

Chairman

628. Do you think it is inevitable, or if it is not inevitable, what can you do or others do to derail it? I hear of some quite outlandish things being done in the States in the form of campaigning using the internet.
(*Mr MacGillivray*) There are definitely some anti-technology movements. My personal view from the Economics Foundation is that some of the most exciting innovations in social policy are coming from a judicious use of new technologies rather than an escape from them. It seems to me that as people come back from their Y2K exile and re-engage with the 21st century, there is a lot of social problems where the new technologies can actually play an active part in alleviating them rather than just being a negative factor which has to be guarded against as best as possible. Some of the work we are promoting at the community level is directly intended to produce benefit rather than being in some way a fire-fighting exercise against the dark forces of globalisation. I think it is inevitable but there is potentially more benefit than harm to be had out of it.
(*Mr Tutcher*) Can I add a slightly different view? One that says that I think there is a real opportunity to create economic wealth and we have to be very careful about the environmental implications of that because we are very aware of the consumerism which could result. I think one of the numbers which is produced out of the US is that e-commerce or trading electronically, however you may like to define that, has already contributed something like 0.7 per cent off the inflation rate. Whilst I have not done an economics course, something inside me says there is probably something which is pretty good about driving down inflation through using technology in that way. I think the issue becomes one of how does Government ensure that the extra wealth which potentially can be created is distributed fairly to those who need it most, and yet still give an incentive to those people who are doing most of the creation to actually retain some of it. I think there is a balance to be drawn there, that Government probably does have a role to play through whatever levers it has to make those decisions.

629. Mr Wilsdon, would you like the last word?
(*Mr Wilsdon*) Picking up on John's comment about distributing the wealth, as I say, our study is focused on the UK, there is a lot of good stuff being said by the UK Government about closing the digital divide in this country. From the sustainable development movement, obviously we like to think global, as the phrase goes, and I think there the real

challenge lies in the fact that 40 per cent of the people on this planet still have not made a telephone call. That sometimes puts into perspective the hype and the over-enthusiastic way in which governments, businesses and others talk about this stuff, and that makes the real challenges we have in the UK pale into insignificance to some extent.

630. On that sobering thought I think we will draw the proceedings to a conclusion. Thank you very much indeed for your evidence, it has been very helpful.
(*Mr Wilsdon*) Thank you.

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Forum for the Future

E-COMMERCE: POLICY DEVELOPMENT & CO-ORDINATION IN THE EU

Response to the House of Lords Select Committee on the European Union

"The increasing use of e-commerce could have a profound impact on our ability to be more sustainable, but it is important that we assess the benefits and problems in a systematic and balanced way. My Department, with the DETR, is supporting a year long inquiry into the environmental and social impacts of e-commerce."
Patricia Hewitt, e-Minister, DTI

"I am delighted to be involved in the Digital Futures project. My role is to co-ordinate the Government's drive towards making the UK the best place in the world for e-commerce. This project gives us the chance to think about what the effects of that will be for our society, our environment and our daily lives."
Alex Allan, e-Envoy, Cabinet Office

A. Background to the *Digital Futures* project

1. Forum for the Future welcomes the opportunity to contribute to this inquiry on behalf of the *Digital Futures* consortium. *Digital Futures* was launched on 1 February by e-Minister Patricia Hewitt, and is being backed by the DTI, DETR and the Cabinet Office. Its aim is to explore the social and environmental implications of the predicted explosion in e-commerce, and recommend ways in which the digital economy could evolve into a powerful ally of sustainable development.

2. The research for *Digital Futures* is being carried out by eight think-tanks, including Demos, Forum for the Future, New Economics Foundation and the Town and Country Planning Association (a full list of research themes is attached). The project will look ahead to 2010 to assess the impacts of e-commerce in several key areas:
   - ***Energy use*** - Will e-commerce help to create a low-energy "weightless" economy? Can it help the UK to meet its climate change targets? How many products and services (such as records, banking, estate agency) will be dematerialised altogether?
   - ***Transport*** - What will internet shopping mean for patterns of transport and distribution? To what extent will home delivery replace the need to travel?
   - ***Planning*** - How will e-commerce shape the future of our towns and cities? Will the shift away from bricks and mortar towards "clicks and mortar"accelerate the decline of the High Street?
   - ***Social inclusion*** - How do we overcome the "digital divide"? What will e-commerce mean for communities, neighbourhoods and relationships?

3. In February 2001, the *Digital Futures* consortium will publish its final report, which will include a set of recommendations as to how Government and business can maximise the wider benefits to society of the dot-com revolution.

4. The project is being supported by eleven companies with a stake in the digital economy: AOL UK; BP Amoco; BT; Ericsson; Kingfisher plc; Nationwide Building Society; NatWest; the Post Office; Royal & SunAlliance; Sun Microsystems; and Unilever. These companies are becoming actively involved in the research process, as well as contributing financially to the research.

B. Setting the context

5. Two of the most powerful drivers of change in contemporary society are the explosion of digital technologies, and the shift towards sustainable development. Both require us to rethink the nature of goods and services. Both have the capacity to transform companies, markets and entire economies. Yet surprisingly few attempts have been made to assess whether the digital and sustainability revolutions will complement or conflict with one another.

6. In the past decade, internet use has grown at a phenomenal rate. There are now more than 150 million users worldwide, and each day 80,000 new users go on-line. Although the internet was originally perceived as a source of entertainment and information, the advent of electronic commerce means that it has evolved into the world's fastest growing marketplace.

7. E-commerce is still in its infancy, but most commentators agree that it is set to grow as rapidly as the internet itself. Conservative estimates suggest a near-quadrupling of e-commerce in Britain by 2002, from £200 million per annum to £720 million. On the more generous side, the OECD forecasts that the global market will be worth $1 trillion by 2005.[1] This will have far-reaching implications for all aspects of business: creating new brands and new markets; transforming product and service delivery; and forging direct links between companies and consumers.

8. The UK is well-placed to take advantage of the boom in e-commerce. The 1998 Competitiveness White Paper placed e-commerce at the heart of the Government's vision of a knowledge-driven economy, and set the ambitious goal of making the UK "the best environment in the world for e-commerce by 2002".[2] This goal was further reinforced by the publication of the Cabinet Office report *e-commerce@its.best.uk*, and is now being driven forward by the e-Envoy. But although much attention has focused on the economic potential of e-commerce, far less research has been conducted in the UK or internationally into its wider social and environmental impacts.

9. A high-tech economy based on knowledge, skills and innovation should be a cleaner, greener economy. Foremost among the potential advantages of e-commerce are reductions in travel and material throughput. For example, some studies show that ordering groceries and other daily essentials on the web, and having them delivered direct, could cut four out of every five shopping trips. This could lead to sizeable reductions in vehicle emissions, and fewer retail developments on greenfield sites.

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[1] OECD *The Economic and Social Impact of Electronic Commerce: Preliminary Findings and Research Agenda*, October 1998

[2] DTI *Our Competitive Future: Building the Knowledge Driven Economy*, December 1998

10. In terms of energy and material flows, there are some sectors where dematerialisation is already taking effect as a result of e-commerce (e.g. books, records, banking). As the table below shows, the ratio of energy used per book sold in a traditional bricks-and-mortar store versus Amazon.com is 16:1. By far the biggest environmental savings will come from increased supply chain efficiencies through business-to-business e-commerce.

	Traditional book shop	**Amazon.com**
Titles per store	175,000	2,500,000
Revenue per employee	$100,000	$300,000
Sales per square foot	$250	$2,000
Energy cost per square foot	$1.10	$0.56
Energy cost per $100 sales	$0.44	$0.03

11. There is growing interest internationally in the environmental impacts of the internet. In December 1999, the US Centre for Energy and Climate Solutions published a major report which suggests that e-commerce could reduce overall US CO_2 emissions by 1.5% per annum between now and 2007.[3] Another Swedish study published in January suggests that e-commerce could cut up to 5% of shopping-related CO_2 emissions.

12. But it is important not to under-estimate the rebound effect, which could see these environmental gains being outweighed by an increase in overall consumption. Freight transport could increase through inefficient distribution systems, and consumers might replace shopping trips with other, longer journeys. The ease of access to goods from across the world could increase air traffic, and might reduce the capacity of consumers to ensure that adequate social and environmental standards are maintained at the point of production.

13. On the social side, debates have focused on ways of closing the "digital divide", and the Government has now set the admirable goal of ensuring universal access to the Internet by 2005.[4] But looking more widely at the social consequences of e-commerce, there is great uncertainty about it will mean for local communities. High Streets, which have already lost most food retailers, are likely to see the disappearance of many other service sector outlets. And with geographical remoteness little barrier, social dislocations could take place on a far larger scale. Much of British Airways' routine accountancy work, for example, is now conducted in Bombay.

14. At a broader cultural level, some have warned of the erosion of "social capital" that could result from the shift towards disembedded on-line communities. As e-commerce evolves, it raises important questions about the social function of shopping, and the nature of community in the digital age.

C. Taking this agenda forward

15. Despite the opportunities for synergy between emerging policy on the knowledge economy, e-commerce, and sustainable development, there is currently little evidence of the joined-up thinking that is the supposed hallmark of Government policy-making. BT has pointed out that "technology is essentially neutral with respect to sustainable development - it is how

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[3] Joseph Romm *The Internet Economy and Global Warming: A scenario of the Impact of E-commerce on Energy and the Environment* Centre for Energy and Climate Solutions (December 1999)

[4] Tony Blair, *Speech to the Knowledge 2000 Conference*, 7 March 2000

		• Developing the concept of the "learning city", to strengthen and enhance local knowledge and intellectual capital flows	
Science Policy Research Unit	E-topia: scenarios for e-commerce and sustainability	• Development of a set of e-commerce scenarios for 2020 • Inventory of potential social and environmental impacts under these scenarios • Calculation of key indicators for each scenario: energy use, CO2 emissions, materials throughput, pollution, employment, social exclusion, land use etc.	Frans Berkhout Malcolm Eames Gordon MacKerron Richard Hawkins
Town and Country Planning Association	Planning in the digital economy	• E-commerce and the future of planning • Relationship between the physical and virtual environments • Impacts of e-commerce on the high street and out-of-town retail developments • Implications for UK planning policy (and links to Urban & Rural White Papers)	Mark Daniels Simon Marvin Andy Gillespie
UK CEED/ University of Bradford	Transport & distribution	• Assessment of impacts on transport and distribution efficiency • Analysis of likely changes in transport modes e.g. increased use of smaller goods vehicles, air freight • Exploration of alternative distribution methods for e-commerce goods and services • Implications for integrated transport policy	Prof. Peter James

people apply it that really matters."[5] If we are to harness e-commerce to maximise wider social and environmental goals, there is an urgent need for dialogue between policy-makers and the companies who will be driving the dot-com revolution. Our project is still at an early stage, but the *Digital Futures* consortium hopes to play a positive role in promoting this dialogue over the next twelve months.

JAMES WILSDON
Senior Policy Adviser
Forum for the Future

Date: 24/3/00

On behalf of the Digital Futures consortium (full membership listed at Appendix A)

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[5] BT *A Question of Balance* (1997)

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