EXPANDING THE GLOBAL e-SOCIETY

The Global Information Society

in a World of Financial and Business Realities

Newcastle upon Tyne, United Kingdom,18-19 October 2001

Report

by Judith Ryser, CityScope Europe

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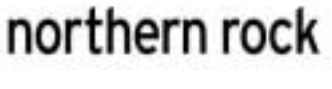
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ANUIT


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DAY 1: 18 OCTOBER 2001

WELCOME ADDRESSES

Councillor Mary Carr, Lord Mayor of Newcastle upon Tyne
Rt. Hon Gordon Brown MP, **Chancellor of the Exchequer UK**
Councillor David Wood, Newcastle upon Tyne City Council, UK
Dr. Sylviane Toporkoff, President, Global Forum, France
Andrew Robinson, Open University and Vice-President European Institute for e-Learning, speaking on behalf of **Senator Pierre Laffitte**, France

THEME 1: THE DYNAMICS OF THE MARKET PLACE IN THE 21ST CENTURY

KEYNOTE SPEAKERS: DIFFERENT VISIONS OF SHAPING THE FUTURE TO EXPAND THE GLOBAL E-SOCIETY

Chair: David Wood, Councillor, City of Newcastle upon Tyne

Speakers:

Bror Salmelin, Head of Unit, Electronic Commerce, European Commission, Belgium / *The EU paving the way for the all-inclusive information society*
Hisham El Shérif, CEO, IT Investments, Egypt / *The dynamics of the global e-Market place in the 21st century*
Richard Dumbleton, Programme Director, ICL / *Shaping the global e-society at the beginning of the information revolution*
Jorgen Friis, Deputy Director General, ETSI / *Can standards shape the future in Tel-e-Europe?*
Christine Leurquin, European Programs Manager, Society Européenne des Satellites ASTRA / *The role of satellites in the e-society*

PANEL 1: THE DYNAMICS OF THE E-MARKET PLACE IN THE 21ST CENTURY

Chair: Claude Sassoulas, General director, Teleglobe France SA
Moderator: Sergio Antocicco, President**,** Italian Association of Telecom Users (ANUIT), Italy

Speakers:

Tom Cosh, Head of Economic Development, Newcastle upon Tyne, UK / *e-Enabling business*
Hervé Rannou, President, ITEMS International, France / *Telecom markets and perspectives*
Andrew Robinson, Open University and Vice-President European Institute for e-Learning / *The e-learning agenda: internal and external challenge*
Michel Combot, Economic Affairs, French Embassy, USA / *Generating confidence in the emerging electronic market place –US and European Perspectives on digital signature*
Mike Spanner, Vice-President, e-Business Operations in the Public Sector, Unisys, UK / *e-Strategies to develop the e-Society: alliances and partnerships between network service providers, equipment providers, content and information providers, users and customers*
Ian Stewart, Chief UK Economist, Merrill Lynch / *Effect of productivity on economic growth and living standards*
Peter Connor, Head of UK Region North, BT / *Managing change*

Discussion

THEME 2: INDUSTRY REGULATION IN THE E-ECONOMY

KEYNOTE SPEAKERS

Speakers:

Councillor Tony Flynn, **Leader** of the Council, City of Newcastle upon Tyne
Dr. Hellmuth Broda, Chief Technologist EMEA, SUN Microsystem / *When things talk to things, services serving service*
John Barker, Assistant Deputy Commissioner responsible for the Compliance and Coordination Industry Canada, Canada / *Competition agencies in an e-commerce world*
Alain-Louis Mie, Senior Vice-President International Public Affairs, France Telecom, Sherpa global business dialogue, France / *Experience of the global business dialogue*

PANEL 2: INDUSTRY REGULATION AND COMPETITION IN THE E-ECONOMY

Chair : Prof. Shigehiko Naoe, Professor of Information Policy, Chuo University , Japan

Speakers:

John Ketchell, Director CEN/ISSS / *Co-regulation a winning formula*
Francois Bélorgey, Strategic Adviser on Information Technologies to the Prime Minister of France / *Intelligent regulation*
Randy Yaloz, Partner, Euro Legal Counsel Group, Paris, New York, Tel Aviv / *Legal perspective of electronic signature*
Tom Marten, Director, International Relations, WorldCom / *Telecommunication regulation*
Kim Ambler, Director, Industry and Policy Affairs, Computing and Networks Operations, The Boeing Company USA / *Regulatory issues for large business users*

Conclusion:

Prof Jean-Pierre Chamoux, Paris University V, René Descartes, France.

DAY 2: 19 OCTOBER 2001

THEME 3: VIRTUAL SERVICES IN THE INFORMATION SOCIETY

KEYNOTE SPEAKERS

Chair: Giorgio Prister, Manager of Local Government Market Segment, Global Government Industry, IBM, EMEA

Speakers:

Bror Salmelin (representing Michel Richonnier, Director, Directorate C,DG INFSO), Head of unit, Electronic Commerce, European Commission, Belgium / *The information society, challenges for Europe and possible answers regarding e-Europe*
Rt. Hon. Nick Brown, MP for Newcastle upon Tyne, Minister of State for Work and Pensions, in Cabinet of Tony Blair Prime Minister, UK / *UK government on-line programme*
Edith Cresson, Former Prime Minister, France / *ICT as means to assist social integration through second chance education*

PANEL 3.1: NEW BUSINESS MODELS

Moderator: Frederic Tatout, Ministry of Economy, Finance and Industry, France

Speakers:

Roger Watson, Head of e-Business Strategy and Planning, BT Ignite, UK / *New e-business models*
Andy Kyte, Vice-President & Research Director, Gartner, UK / *Virtualisation of services*
David Ankri, Development Manager, Smart is Marketing, France / *e-smart cards*
Tim Brunton, Senior Commercial VR Developer, The Virtual Reality Center at Teeside Ltd

PANEL 3.2: ADDRESSING USER NEEDS

Moderator: Maitland Hyslop, Head of Knowledge, Information and ICT, One NorthEast Regional Development Agency, UK

Speakers:

Prof. Kel Fidler, Vice-Chancellor at Northumbria University, UK / *e-learning services in the virtual services*
Prof. Louis Lareng, Director of the European Institute of Telemedecine, France / *Development perspectives in telematics*
Jacques Pomonti, President, Sorbonne Radio - France, France / *Role of radio in lifelong learning*
Bernard Garner, Public Transport Development Director, NEXUS,UK / *Use of IT to improve public transport for users*
Graca Pombeiro, Deputy Director of the Secretariat for the Modernisation of Public Administration Portugal, INFOCID / *The Portal of Portuguese public administration*

PANEL 3.3: KNOWLEDGE MANAGEMENT: A STRATEGIC TOOL FOR THE INFORMATION SOCIETY

Moderator: Prof. Michael Stankosky, The George Washington University USA / *Knowledge Management*

Speakers:

Dr. William Halal, Professor of Management in the School of Business and Public Management at George Washington University USA / *Knowledge creation*
Dr. Charles Despres, Professor at College of Higher Commercial Education & **Daniele Chauvel**, Research Director ecKM, Marseille – Provence, France / *An emerging precis of knowledge in knowledge management*
Prof. Trevor Page, Pro-Vice Chancellor of Newcastle University, UK / *New e-science network in the virtual services*

THEME 4: E-SOCIETY: APPLICATIONS FOR CITIZENS

KEYNOTE SPEAKERS

Chair: Gérald Santucci, Head of Unit, DG INFSO, European Commission, Brussels

Speakers:

Stephan Brunessaux, Deputy Director of ITC Management, Matra Systems & Information, France / *Cybervoting*
Ari Schwartz, Associate Director, Center for Democracy and Technology (CDT) USA / *ICT as tool for consensus building*
Dr. Steve Marsh, Assistant Director, Office of the e-Envoy, Cabinet Office, UK government / *The UK government's gateway*

PANEL 4.1: INNOVATIVE APPLICATIONS: BEST PRACTICES AND USAGES

Moderator: Tom Cosh, Head of Economic Development, Newcastle City Council, UK

Speakers:

Dave Denison, Channel Marketing Manager Government, ICL/ *Future technologies: how citizens use technology*
Kevin Curran, Director of Next Level Systems ltd, UK / *Need for holistic change*
Brian McCandless, e-Government Director, Oracle, UK / *e-government: from vision to reality*
Antoinette Moussalli, Head of International Affairs, London Borough of Lewisham, UK / *e-society applications for citizens*
Ann MacIntosh, Director, International Teledemocracy Centre Napier University, UK / *e-participation; new forms of citizen participation in the democratic decision making process*
Alfredo Ronchi, Polytechnic of Milan, Italy / *Report to the G-8 on culture in a worldwide information society*

PANEL 4.2:THE DIMENSIONS OF THE DIGITAL DIVIDE

Moderator: Tom Cosh, Head of Economic Development, Newcastle City Council, UK

Speakers:

David Brown, Managing Director, In-Touch, UK & **Neil Bravey**, Head of Customer Services, East Riding Yorkshire, UK / *e-government services to remote rural locations*
Helena Lindskog, CEO, HelDag AB, Sweden / *Time-rich, time-poor division – consequences for society*
Anna Lisa Boni, Telecities Manager / European cities for digital inclusion

Conclusion

Gerald Santucci, Head of Unit, DG INFSO, European Commission
John Littleton, Head of IT, Newcastle City Council, UK
Sébastien Levy, Partner ITEMS International,
Councillor David Wood, Newcastle City Council, UK.

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SHAPING THE FUTURE
EXPANDING THE GLOBAL e-SOCIETY
The Global Information Society in a World of Financial and Business Realities

Global Forum 2001

Newcastle upon Tyne, United Kingdom 18-19 October 2001

B. Report

I. ITEMS International Global Forum 2001: Background

1. Global Context

The new millennium has started in a positive mood. Technological advances are perceived at the heart of long term growth, sustained by the strongest world economies beyond normal business cycles. Besides labour productivity gains, more would be achieved with fewer material resources. Creativity and innovation are going to increase wealth – real and virtual. Ultimately they will provide enough for all to benefit. Information and communication technologies are contributing to global sharing. They will provide access to, and distribution of such newly acquired wealth. The Global Forum 2001 aimed to focus on financial and business realities because they are seen as the prime movers expected to shape, advance and/or constrain progress in the information society. The outlook would have been one of optimism, despite continued and significant value losses among (tele-) communications and dot-com companies, if it was not for the unexpected and devastating effects of September 11. They had indeed an effect on the Global Forum 2001 which however brought together so many global businesses in a globalising world, facilitated by the global powers of communication and information technology, developed and/or applied by the Global Forum participants.

As a number of participants underlined, it is possible to read these tragic events as a yet another signal that ICTs have become genuinely global. They were used by terrorists to meticulously prepare mass destruction. Obviously, ICTs were at hand, infrastructure was widely available, and users were sufficiently knowledgeable and skilled to handle one-sided, undetected and perhaps undetectable worldwide communication.

Geography has become ubiquitous in as much as communication footprints offer a seamless coverage of the whole planet earth, securing satellite communication from anywhere to everywhere. Maritime cables surround all continents and connect them across major oceans. The mobile phone networks expand continuously and interconnect. Terrestrial networks increase their capacity by providing broadband infrastructure to both businesses and homes, and the local loop is gradually opened up to multiple service providers, users and uses. Infra-red connections link up all types of terminals which become both more powerful and cheaper to purchase and to run.
By 2005 the million mark of cellular subscribers is expected to be overcome. Thus, universal access to means of communication gets less hampered by technological or geographic barriers than by cost, regulatory conditions and know how.
The question, therefore is who will use ICTs and to which ends? And who should have the authority and legitimacy to approve or sanction such uses? Already the Internet which was conceived as a universal instrument, accessible by all, for self-selected purposes has grown to such proportion and diffusion and evolves at such speed that no individual country is able to tame it. Censorship, taxation, protection against fraud are today among the most important issues. The communication dynamics has shifted from thinking globally and acting locally to the need for acting globally while thinking locally.

Even international companies understand that needs and wants, technical requirements and performance specifications vary from location to location, from culture to culture and they build such constraints into their business strategies.
ICT training is also offered -together with Cable and Wireless- to provide distance learning opportunities for telecom professionals to make in-kind contributions in equipment and experts to train telecom trainer. All these initiatives in partnership between international agencies and private companies aim to diminish the digital divide between the information rich and the information poor. This was also an issue mentioned by the participants at the Global Forum.

2. Concept and Organisation of the Global Forum on Shaping the Future of (Tele-) Communications and their Applications

The Global Forum aims to generate synergy between suppliers and clients of (tele)communications applications and to set up partnerships between practical applicants of innovative ideas. It has also been a catalyst for wide ranging applications of (tele)communications. Since its inception in 1992, it has brought together international key actors who shape the information society. It gathers experts from advanced economies - the USA, Canada, Europe and Japan - and increasingly from developing countries in response to WTO Agreements on telecommunications. They include countries on the Mediterranean fringe of Europe (such as Morocco, Egypt and Turkey), Mexico in the sphere of NAFTA, and other countries in need of upgrading their telecommunications infrastructure, such as Russia and other central and Eastern European countries who wish to join the European Union.

Due to the dynamic evolution of ICTs, ITEMS International and the "Foundation Sophia-Antipolis", the curators of "the Global Forum on Shaping the Future of (Tele-) Communications and their Applications" turned it into an annual event. It enables its participants to keep abreast with the latest developments in technology, regulation, markets and application of (tele-) communications. The Global Fora are attended by over 250 key executive and expert delegates and 2001 was no exception.

Since 1992, nine interactive events were held in the USA, Japan and Europe, with the support of the European Commission, and also of prominent hosts and sponsors. The Global Forum investigated "The Merits and Drawbacks of Cooperation and Competition in Telecommunications" in Washington and New York in 1992. It subsequently extended the dialogue to Europe in Rome in 1993 and Paris in 1994 where Japan joined. A "Forum on Communications" took place in Kyoto in 1995, followed by a road show with demonstrations on "Cities and Local Development in the Information Age" in New York, Washington, San Francisco and the Silicon Valley. Together with the Sophia Antipolis Foundation and Professor Sergio Antocicco of the University of Rome, ITEMS International organised the first "World Forum on Smart Communities: Shaping the Future" in Sophia Antipolis, France and Rome, Italy in September 1997. In 1998, ITEMS curated a Global Forum on "Shaping the Future" in Paris, together with the Foundation Euromed Com, headed by **Pierre Laffitte, the French Senator for Alpes Maritimes**. In 1999 and for the Millennium, the Global Forum took place in the science park of Sophia Antipolis in France under the aegis of ITEMS International and the Foundation Sophia-Antipolis. They focused respectively on "New satellite and terrestrial applications" and "The future of a global e-society".

The Global Forum 2001 took place in 2001 in Newcastle-upon-Tyne, United Kingdom. It was hosted by the city administration which provided access to hands-on demonstrations of its many applications of (tele-) communications for citizen participation. **The Global Cities Dialogue** chose the Global Forum as the occasion to sign a memorandum of cooperation on ICT for civil society between several cities from the North East of England and Scotland.

The sponsors of the Global Forum 2001 were ANUIT, AUSY, Boeing, British Telecom, ClubSophiaUK, Sophia Start-up, One NorthEast, Centre National d' Etudes Spatiales (CNES), CEN/ISSS, City of Issy-les-Moulineaux, Department of Trade & Industry UK (DTI), ETSI, European Commission, France Telecom, IBM, ICL, iF Information Futures LLC, In Touch, Northern Rock, Leighton, NEXUS, Northern Informatics, Oracle, Telecities, Teleglobe, Tyne Tees Television, Tyne & Wear Development Company, UNISYS, University of Teesside, Worldcom.

Each year the Global Forum reflects on the latest state of the art and aims to detect representative trends. The expertise of the speakers who are chosen from among the (tele-) communications industry, regulators and implementers reflects the complexity of the (tele-) communications situation and contributes to an authoritative contemporary perspective.

The Global Forum of Shaping the Future will continue to join up the (tele-) communications industry with public and private information and communication technology producers, service providers and users, as well as regulators. Next year, the Global Forum will take place in Washington DC, USA, on Thursday,

October 17th and Friday, October 18th 2002 at the George Washington University, Media & Public Affairs Building.

3. Characteristics of the Global Forum 2001

The Global Forum 2001 took place in Newcastle-upon-Tyne. The choice of this location results from the fact that Newcastle City Council has acted as a pioneer in attempting to redress local inequalities, by reforming the delivery of its public services using ICT.

The UK itself embraces the information society whole heartedly. Its government believes in a knowledge based economy, thus wants more than half its youth to obtain a university degree and has pledged to equip every school classroom, if not every pupil, with a computer and access to the Internet.

Dealing with ICTs, it was informative to gather in the United Kingdom where the political will exists to alleviate social deficiencies, to modernise its economy and to regenerate its cities.
Newcastle City Council has been consistently pushing the use of ICTs to improve its fate in the transition from a city having suffered from industrial decline to a 21st century city region aiming to benefit from the e-economy. Newcastle University has one of the longest standing communications research centres in the UK. The City Council cooperates with local universities and economic development agencies to create a sustainable economy based on services and advanced technology. Building in part on its traditional activities, Newcastle is revitalising naval and marine engineering by providing ICT based contributions towards navigation, meteorological technologies, oil and gas extraction and other high tech applications. Newcastle has been very successful in establishing itself as a regional retail centre and place of entertainment. According to **Councillor David Wood from the Newcastle City Council**, Newcastle has been voted in the 7th position for its hospitality as a cultural city in the world and has underlined its willingness to share its experience with the "global village"
Through, in particular the Global Cities Dialogue, it has rejuvenated its historic links with Scandinavia and established closer cooperation with other cities in the North East and Scotland. Although in competition with each other, they are aware that in terms of ICT infrastructure and development they can benefit from cooperating and obtaining synergy between their experimental projects.
As the **leader of the Council, Councillor Tony Flynn** explained that the City Council, as an important employer itself, has put a lot of energy and investment into electronic democracy. Starting with people with special needs, such as the impaired and the elderly, the Council has established on-line facilities and smart cards to give them better access to public services. Early on in these technological developments, Newcastle linked up with other cities, including abroad and became a dynamic player at the European level.

Andrew Robinson, from Open University and Vice-President of the European Institute for e-Learning, speaking on behalf of **Senator Pierre Laffitte** of France pointed out the venue of the Global

Forum in Newcastle gives it its specific cultural identity, as it will benefit from experiences of the region, the city and its partners. North East England is cooperating with France on new solutions against the digital divide.

The aim of the Global Forum is to maintain a dialogue between key executive and expert participants from different cultures, involving national governments and institutions such as the European Commission. Findings or solutions developed at Global Fora have often repercussions elsewhere in other capitals, throughout the network of science parks which accommodate telecommunications and elsewhere in the world. The Global Forum is keen to link its contributions to the development of the e-society to people from other cultures all over the world.

It is well known that Europe has the ambition to become the most dynamic e-economy of the world. This must not happen within "fortress Europe" and the Global Forum is keen to extend its activities to all international organisations as well as to countries from all over the world.

Many other speakers were from Western Europe and North America. Together with the Far East, they represent areas endowed with the most lucrative (tele-) communications markets and where the most significant technological and regulatory changes are taking place. Yet speakers from developing countries signalled their need to catch up with (tele-) communication infrastructure installations. Especially newly industrialised countries insist on better access to networks of communication and information and request greater participation in regulatory and technology debates. Eastern Europeans expressed their desire to be bound into global (tele-) communications markets to ease their EU membership.

4. Institutional context

The European Commission was again well represented at the Global Forum 2001. It has put a lot of resources into studying the technological needs of the information society. It is thus well equipped to assist its member states to remain competitive in this key driving force of the 21st century. It took advantage of an audience of key industries and user communities to present the latest EU 'telematics' strategies and other information society policies and it was able to get and receive feedback which it is expected to convey to the many global and intergovernmental organisations on which it represents Europe collectively.

The EU plays an important role in putting forward a consolidated European voice in the debates of the World Trade Organisation (WTO) on (tele-) communications service provision and trade, such as the basic telecommunications agreements and follow-ups on tariff rebalancing, cost-based pricing and other financial and service issues.
Similarly, the EU plays an active role in the International Telecommunication Union (ITU) and its many technical and regulatory committees. With its unique membership of government and industry.
Thus, the Global Forum is privileged to work in close association with the EU which is able to influence global organisations.

II. HIGHLIGHTS OF THE GLOBAL FORUM 2001
Synthesis of Panels and Summaries of Discussions

This part of the report presents the key ideas of the keynote addresses. It is also summing up the main points of the papers given during the two-day Global Forum 2001 and the discussions which took place between the panels and the audience. The report is structured according to the seven areas selected for this year's Global Forum:

- The Dynamics of the e-Marketplace in the 21st Century
- Industry Regulation and Competition in the e-Economy
- Virtual Services of the Information Society: business models and user needs
- Knowledge Management: a strategic tool of the Information Society
- E-Society: applications for citizens
- Innovations, best practices and usages
- The Dimensions of the Digital Divide

The detailed programme of the Global Forum 2001 introducing this report lists all the speakers, together with the topics they have addressed during their interventions. Subject to availability, full papers (including the different dia indicated in the report infra) can be consulted on the ITEMS international website.

See: www.items.fr ;
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DAY ONE

1. THE DYNAMICS OF THE E-MARKETPLACE IN THE 21th CENTURY

After the opening and welcome speech of **the Lord Mayor of Newcastle upon Tyne, Councillor Mary Carr**, the main issues discussed under this topic were the challenges of deploying competitive and strategic information infrastructures capable of delivering effective electronic services in a global e-society. The key to providing adequate infrastructure is to well understand the needs and constraints of the workings of the e-society. The next generation networks will play a special role in shaping the 21st century e-society. E-strategies for the development of the e-society include alliances and partnerships between network service providers, equipment providers, content and information providers, users and customers. Virtual Network Operations (VNO) may prove a new challenge for mobile networks. Convergence may be limited by cultural behavioural aspects rather than technological possibilities. The crucial question is what strategies will enable innovative firms to cope with financial constraints and industry consolidation.

Rt. Hon Gordon Brown, the UK Chancellor of the Exchequer (Minister of Finance) addressed the Global Forum 2001 in true virtual style, in video-conferencing mode. He dwelled on the digital divide, but insisted that the UK government was making a great effort in providing its citizens with the necessary ICT infrastructure to remain informed and competitive. 10 million people were using the Internet in 1999 (out of 60 million inhabitants). They are 23 million in 2001 which means that half the adult population of the UK has access to the Internet.

UK policy concerning the digital divide (also in the developing world) is drawing lessons from the 19th century when poverty was perpetuated because deprived people had no opportunity to improve their lot. Giving the whole population access to the Internet and, through it, to education and information is a prerequisite for the betterment of society at large. For that reason, the UK is installing centres with on-line computers everywhere, and in particular in the most remote and poorest communities. 500 have been provided and one thousand are planned this year. By 2002, 2800 centres will be installed in schools, high street shops, local radio studios and disused council property. 200.000 computers will be lent to deprived households. Whole cities will be wired up. Liverpool, a city in difficulty will receive cable throughout its urban area with services and Internet access for all.

The British government considers education and access to information the key to improving quality of life. Therefore, in 1997, 91% of primary and secondary schools had access to the Internet. The target for 2002 is 100%. The government is also keen that businesses should have access to on-line services, including those provided by the government. The government itself is adapting its services and will provide access to all of them on the Internet. Each government department has its website already, and interactive services (e.g. for taxation, civic information, other administrative provisions) will be available shortly, together with detailed information on education, civic services and business support. It is important to learn from other countries. Newcastle has made a great effort but there is still a long way to go to reach its whole population with information technology.

Bror Salmelin, the Head of Unit of Electronic Commerce at the Directorate-General INFSO at the European Commission, presented the e-business policy and research programme of the European Commission (EC). At its Lisbon summit, the EU has declared its ambition to become the most competitive and dynamic knowledge based economy in the world, combining economic growth with social cohesion. The Directorate General of the Information Society has undertaken many studies towards this goal, based on a continuum between technology and e-policy. For that reason, the EC is focusing on legislation and self-regulation, the economy and security, as well as infrastructure provision and ICTs.

ICT investment has had a major impact in the USA, both on short term business cycles and long term structural effects. In Europe, e-society growth is driven by telecommunication rather than ICT investment, contrary to the USA which benefits from financial markets and entrepreneurial spirit. The completion of the internal market and enlargement should stimulate the European e-society.

The future of the e-society will have an impact on enterprise related policies:

- the e-economy will show the cost of "non Europe"
- new policies will have to include consumer protection
- the ICT skills weakness needs to be redressed

Content development, secure networks and better access are the key conditions for successful e-business.

The EC is currently working on a number of e-policy themes by means of brainstorming, scenario development and soft system analysis. Among them are:

- new technologies as new challenges and their structural impact on the e-economy
- dealing with dependency on technology
- innovation to compete within the digital economy
- transforming public services for business
- transforming employment
- unlocking consumer potential and using identity as a resource
- skills management and leadership
- policy mechanisms for global cooperation
- ethics of the e-economy.

Extensive interviews among the business community have produced interesting results. 97% considered that besides product quality, cost effectiveness and other traditional values, the key business drivers are networking, technology and the Internet [dia7]. This may explain why the dot.com phenomenon has not disappeared and that investment is being maintained [dia8]. In France, Sweden, Italy, Germany and the UK investment has decreased to 87% but the interviewed business community estimated the drop to only 93%. They saw the benefit of IT investment as a positive influence on the behaviour of the business cycle [dia9]. It provides for better outreach and market opportunities, speedier decision making and a more effective supply chain. Thus time has come to exorcise the myth of excising reality.

A topical issue of the e-society is dependence on technology. “Ambient Intelligence” is made up of pervasiveness, interdependency and intrusiveness of technology infrastructure. Correctness, safety, fault tolerance, reliability, information, together with network security and serviceability are all components of “Technological Dependability”. This concept characterises (or certificates) affordability (and quality of information), global interoperability of traditional networks and, more generally, heterogeneity, complexity and large scale distribution. It is necessary therefore to create a dependability aware culture.

Networking within the e-society should be seen as a winning game. Interoperability and openness enable its new players to win by sharing, make use of intangibles, break down boundaries, draw on entrepreneurship and benefit generally from a new mind set. Convergence will be able to remove sectoral boundaries. In future it should be possible to combine voice, data and broadcasting services in any way by using the Internet through satellite, cable, telecom, or wireless means with any permutation of terminals, such as PCs, TV sets, mobile phones, and other telecom equipment. This means that the current PCs need technological development which is vital for the ICT future of Europe. At present, only one in three households are connected to the Internet and 15% of them have ISDN or other fast communication technology. 68% of people have a mobile phone on average, but the North South divide also persists in Europe [dia 13], not least because of the multitude of devices. Easier and cheaper access to the Internet should level this division out.

The EC has designed a European Action Plan and Research programme to improve “Ambient Intelligence” and “Technological Dependability”. The action plan aims to make Internet services cheaper and faster. It focuses on investing in people and skills and stimulates the use of the Internet by developing e-content programmes, public services and public information, as well as a new Net protocol version 6 (Ipv6). E-society research is incorporated in the 6th framework programme for RTD 2002-2006. The research encompasses 300 programmes of technology development with 1000 participant organisations. The aim of the programme is to bring the user to the fore while keeping innovative technology invisible in the background. This initiative should enable EU member states to remove existing obstacles from the e-society.

Getting business conditions right is a priority of future IST research. It means tackling obstacles to risk, entrepreneurship and employment. This is the responsibility of EU member states and interest groups, while the EC is in charge of benchmarking and the legal framework.
For details see:
www. europa.eu.int (on the EU generally)
www.europe.eu.int/ISPO/ecommerce (on e-commerce and e-business)
www.cordis/lu/ist (information society technology programme)

Hisham El Sherif, CEO of IT Investments from Egypt considers that the e-society presents a life challenge. Of the six billion world population 300 million are in the USA and 300 million in Europe where most of the information infrastructure is available and expanding. Despite claims that efforts are made to narrow the gap between the first and the third world in reality economic development accelerates in advanced countries while the least developed countries are falling increasingly behind. Global society may

expand in the political arena and on environmental matters but competitive business development which is measured in rates of change and dynamics of the free market societies remains skewed.

There is a need for a fourth wave. At the same time globalisation needs redefining. Access to information alone is not improving economic development. Other aspects such as cultural identity have to be taken into account in development strategies. For that reason Egypt has set up a network of think-tanks in 1500 locations with 14.000 participants and an annual budget of 30.000 $. Linked up by Internet with 11 other African countries it cooperates on examining how information can become a factor of reform. It took 50 years to introduce the idea in Africa that information has a social mission and more work is needed in that area.

The dynamics of the global e-market in the 21st century contributes to a new paradigm for "have" and "have not" and presents the North South divide with new challenges.

- It is imperative to build regional and national information infrastructure in the developing world. Per capita use of the Internet is 50-70% in the North and 21% in the South, notwithstanding internal digital divides.

- Confidence building is vital to turn old economies into digital ones. A main problem is that in the South there is an oral culture as opposed to the written tradition of the North where the ICTs are being developed. Thus, the implementation of the latest technologies is difficult because no debate about adjustment and change has taken place.

- Incremental progress of the market economy in the South amounts to an empty slogan. Reality proves different. An example is the demise of the Eastern European regime. There was a vision on top while the hard work had to take place at the bottom.

- It is necessary therefore to retrain the population for the e-society. In the South this must amount to leapfrogging. The knowledge gap is real in the South, thus e-distance cannot be considered as a luxury.

- Internet knowledge also presents a gap. Speed of change is a requirement to gain access to unified information worldwide. Training has to include learning about how to learn. Considering that on average 1 1/2% of the population of the South have university education and only 1/3% in Africa, there is a great need of catching up.

- Finally, there is a problem of information data management. On the one hand there is an information overload, on the other hand information is limited either due to lack of infrastructure or to other restrictions, such as censorship. Socio-economic as well as business information management have to evolve in order to come up with a sustainable framework both in technological and cultural terms. The development of the South needs to include the respect of cultural diversity and identity.

The fourth wave is at a cross road. Events such as 11 September are unacceptable and a new world order is needed. It has to stress values of civilisation which reject violence and terrorism at any time in any place. Globalisation may strengthen the market economy but the price must not be ethic and cultural cleansing. Abstract duality is inherent in a value based global model. If it is to guarantee citizens a right to live, freedom to think, express their opinions, and protection of their privacy and identity, it has to encompass multiple ideologies. A new model for the e-world will have to be practical as well as pragmatic. Instant media penetration everywhere is affecting existing situations and requires a renaissance of values in government, academia and multinationals which, together, have to develop a new paradigm to overcome the digital divide.

Christine Leurquin, the European Program Manager of the Société Européenne des Satellites - ASTRA, spoke from the industry perspective. She informed on the latest technological developments in satellite communication. She showed how the European Society of Satellites working with the AstraNet is connected worldwide to establish point by point connection by cable feed, fibre optic and broadcasting [dias 4, 13, 27]. The aim is to achieve a broad range of service provisions, including voice and two way terminal connections within an open standard to avoid a fragmented market. New technologies are being experimented continuously with substantial investment to add to communication infrastructure convergence. However, questions were raised regarding the viability of satellite technology for two-way mobile telephony and broadband communication. Broadband may be cheaper than interactivity but free access may not materialise. Without a new generation of cheap terminals and flexibility in use of transponders and segment capacity satellite communication is bound to remain expensive and out of reach for mass use.

Another industry viewpoint was presented by **Richard Dumbleton, Program Director of ICL**. He considers that we are still at the beginning of the information revolution. Social and technological dimensions are going to shape the global e-society.

Main areas requiring change are:

- obtaining access to information
- understanding and using information
- acting on information

The key question is who benefits from all these changes.

The answer has to be benefits for all. How it will be achieved is anytime, anywhere and through any route (by PC, mobile phone or PDA). Most importantly, access to information has to be available, affordable and easy to use. Simplicity of use and direct easy navigation, reliable infrastructure and up-to-date content, consistency regardless of reception and clearly identified needs are all prerequisites of the e-society.

ICL is developing and testing these conditions in its “citizen projects”. ICL also runs its own multi-channel access project which services 15.000 group sources of information. They are open to the public,

multilingual and come also in Braille. ICL has developed smart cards with the PKI system for the Finnish government for its services to be used with secure and reliable devices. ICL has set up an Intranet to enable the 19.000 post offices to share information and knowledge. This is expected to increase the cost effectiveness of its services as it now values information as an asset. The Thomas Cook project led to 2 million holiday bookings per year. 30.000 people visit the site per day and online sales are achieving high satisfaction. The project for the Lord Chancellors office to provide information on law to the public met with resistance from the legal profession, but providing free access on legal information to the profession itself met with less opposition. The problem is one of interpretation which the legal profession considers it alone is capable of undertaking.
See: www.justask.org.uk

All these "citizen projects" illustrate the power of making information available. They assist in evolving from limited access to information due to local oral and hand-written communication to network provision. New technologies helped by government directives allow for complete transactions, with ease and simplicity, secured by authentication of citizens. They reduce operation costs of services despite the large amount of information they are processing. Beneficiaries are citizens, governments and the business community.

During the discussion the issue of marketing selectivity came up. More generally, it cannot be assumed that the private sector will ensure technology transfer freely. Internet for all may remain a slogan if it is left to ICT investors alone. Poor and rural areas may have to draw on transfers from better endowed urban areas as an indirect market expansion. Joint responsibility between the private sector and the government are more likely to ensure such transfers. Profitability may act against social development and equity. Motivation is divided between narrow company aims and provision of infrastructure with a social dimension. This requires multinational participation and production of sectoral catalytic capacity. In the long term investment availability, with or without government assistance, will determine progress in more deprived areas.

Can standards shape the future in Tel-e-Europe asked **Jorgen Friis, Deputy Director General of ETSI**, a EU based independent not for profit association establishing voluntary telecommunications standards in cooperation with industry. Funded in 1988 it is recognised by the European Commission and linked to worldwide institutions such ISO and ITU. In 2000 it produced over 1700 deliverables. Its standard making is open and transparent and approved by national standard organisations. Voluntary work is performed by its members from 59 countries and more than 70 organisations. Deliverables are reached by consensus. While providing standards, guides, technical specifications and reports free of charge and on the web, it also operates other services such as plugtests, PTCC and hosts for a, as well as written material with CEN/ISSS. It carries out joint activities on electronic signatures, smart cards, e-business, Internet access, assisting technologies, learning technologies, cultural diversity and healthcare informatics. It organises exhibitions and participates in international events. It is preparing the next generation infrastructure including 3G mobile, NGN and convergence. E-Europe activities involving ETSI include TIPHON, access to fixed network. ETSI is convinced that standards lead to innovation and that they shape the future. They have economic values, political attention and users demand them for interoperability. All ETSI's activities are supported by interested parties. However, standards can only be one component of e-commerce and

targets of interoperability and openness. A common understanding of behavioural pattern is also needed and cooperation of local and regional players. ETSI aims to apply to all telecom platforms and to bring content to use on all of them. Its long term objective is to create the m-society (multimodal, multicultural, multi-access and multi-technology). In this way ETSI sees itself as a network of networks. It considers that the access problem is a joint responsibility and that urban areas need to transfer capital to more deprived area. Social development should come before profitability and many member companies understand that broad provision of affordable infrastructure will make them more profitable in the long run. However, only private multinational groups can offer sectoral catalytic capacity which is a prerequisite of such long term profitability.
See: www.etsi.org

A panel chaired by **Claude Sassoulas, General Director of Teleglobe France SA,** and moderated by **Sergio Antocicco, President of ANUIT (Italian Association of Telecommunication Users)**, collated views from consultants, academics, managers of ICT led business ventures and the ICT supply sector.
See ANUIT website: anuit@anuit.it

A message from **Lisa Donnan, Executive President for e-business solutions from Teleglobe Canada,** was that some media and telecommunication companies are profitable because they offer wholesale connectivity for content distribution, transmission and interactive services. They cut across different categories of markets, including the Internet, telecommunications and content provision. This would not be possible without their large investment into research and educational networks. 160 countries are presently connected to BTT research networks and have undertaken joint investment into cable systems and the creation of IP VPN since 1945.
See: http://www.teleglobe.com

Claude Sassoulas spoke about world trends and e-market opportunities, technological possibilities, implications for global infrastructure providers and possible impacts on other sectors. He identified five relevant worldwide trends. The longer term trends of the e-market looks bright, despite the short term cash - spend – bust cycles. The location of content and emergence of rich media have made the world wide web truly global. Access remains a problem, although broadband bottlenecks in the local loop are being breached. Five year prospects are for 1 billion Internet users, 1.5 billion terminals and e-commerce nearing $ 3 trillion (B2B, B2C, fixed, mobile). But e-commerce grows unevenly especially outside the USA. However both the Internet and the mobile phone market become less US centric [dia 4]. E-business is no longer just a sales channel but a critical element of essential business functions, in particular as regards business finance, the supply chain and customer relationship management.

Growth of fixed broadband connection has started. In France there are 1/2 million, in Germany 1 million users. Leased interactive TV, cable, modem, ADSL will increase use further.
Web hosting improves user experience as well as reliability and survivability of information access. Making more media applications available to consumers, such as live concerts, sports events, etc. are boosting

demand. Business applications are also diversifying with investor meetings, product launches, employee communications and distance learning.

As regards e-commerce, 63% online customers are more likely to buy with real time assistance. Already Dell masters mass customisation, and Cisco makes a large amount of sales on-line. This points towards the possibility of all businesses turning into e-businesses.

Claude Sassoulas predicts that worldwide mobile voice minutes will exceed fixed telephony and micro-browsers will surpass PC use by 2005. Private, public and NGO sectors will all participate in the e-market place [dia8]. Interestingly, he reckons that manufacturing and utilities are poised to overtake finance and business services as Internet leaders. The trend that businesses are adopting IP technology for Virtual Private Networks provides an indication.

The global infrastructure perspective in which Teleglobe is investing $ 3 billion [dia 11] will expand global data and IP services for e-business, combine network services with web hosting and content distribution, and increase margins by focusing on value added services [dia 12]. Improved customer care, less provisioning intervals and increased network availability will contribute to growth of use. The Internet will become indispensable for all businesses. The question remains how this evolution will affect other sectors, industries and e-market players.
See: http://www.teleglobe.com

Tom Cosh, Head of Economic development in Newcastle described how his municipality intervenes in the local economy to e-enable businesses. The North East, a declining region of England has some 3 million population with 100.000 students and 25.000 SMEs. It started its economic development strategy in 1999 to improve its competitive advantage by investing in knowledge and human capital. It encouraged businesses to cluster on key sites in the urban agglomeration [dia6] by offering them business accommodation and by fostering higher education technology research and further education training and development (on line learning) [dia15]. It offered business support through ICT connectivity, better access to Internet trading and by boosting entrepreneurship. It assisted the local population in getting access to new jobs and training to reduce the digital divide. E-learning was deliberately embedded in existing popular activities and venues such as football club, swimming pools and youth centres. Only thus was it possible to create a new e-generation.

Businesses were encouraged to focus on past expertise, albeit with diversification and adaptation to new demands, such as marine and off-shore technologies, added value engineering, and related new technologies, such as software, multimedia, information and communication technologies. Taking advantage of the universities, they also developed life sciences. Like everywhere else, they also tried to boost tourism and creative industries. With the assistance of the local authority, businesses developed sector partnerships regionally and internationally. Based on historic links, international cluster partnerships concentrate on North sea and Baltic city regions, utilising EU programmes to rebuild connections. Thus Newcastle intends to improve its international airport as a North European hub. Regionally they strengthened the links between commercial, academic, public sector and city-region development partners,

taking advantage of existing international virtual networks. There is an issue, however of technology transfer if the private sector is not forthcoming in providing it. This requires more decentralised reliability. EU assistance should go directly to the regions and involve rural firms to work towards the application of next generation technology. The same should apply to the developing world.

Similarly to Tom Cosh, **Hervé Rannou, President of ITEMS International,** presented an equally optimistic view on worldwide telecommunication trends and market perspectives.
Hervé Rannou showed basic trends between 1999 and 2001. PC households evolved unevenly but there was an overall upward trend [dia6]. Internet users increased between 18-42% per annum [dia7]. Mobiles increased slightly [dia8]. While the ideal model showed cash flow to overtake incomes in three years in 1999-2000, in 2001 investors wanted their money back, that cash-flow lagged behind incomes [dia9]. Revenue sources for the near future for mobiles, Internet broadband, Internet services and contents, customer services, public services showed that while UMTS was in trouble, the I-mode in Japan increased by 30% of cellular subscribers. Subject to open access and unbundling and the expansion of broadband networks, Internet broadband had potential for expansion. In the US in 2000 DSL subscribers increased by 450%, while XDSL subscribers in France increased from 71.000 to 450.000 in 2001 in France. Monthly revenues varied between $ 5 (cellular services) and $ 40 (cellular). Thus there is scope for improvement, especially if local authorities develop applications for citizens, education and health and take active part in the broadband debate.
See: www.items.fr

Representing the view of innovative higher education, **Andrew Robinson** showed how this UK government initiative of the seventies is becoming a European, Mediterranean and ultimately a global player. With its 300.000 students (of which 10% abroad), it is the largest higher education establishment in the UK. It was the pioneer and is still the leader of education software and distance education learning material. It has changed the landscape of education by introducing credit transfers and modular courses and by producing quality despite distance. By now distance learning has become fashionable, but public monitoring shows that the Open University is 10th among the 104 UK universities, provides the best engineering degrees and is second to Oxbridge in other areas. It also runs the National Health University for the NHS staff which is the third largest employer of the world with a budget of £ 20b pa. The OU is based on blended learning with video material and tutors linked up by IT and face to face at summer schools as appropriate to customers and learners.

It runs its European and soon worldwide operations from Newcastle in cooperation with the BBC and its worldwide network. It has branched out to Egypt where it is providing an MA in education, it assists Unesco, UNED and CNED projects, it has increasing Internet penetration and it meets Arab demand within the EU.

The EUMEDIS programme which aims to improve the Euro-Mediterranean information society has started in 2001 with 30m euros and loans from the World Bank. It enables girls in Arab countries to study from home, thereby strengthening overall confidence in education, innovation and learning. This internet based

service provides ODL (open distance learning) strands from EU providers and Unesco and CNED in France, Italy and Africa. It constitutes a network of centres, similar to the EuroStudy Centres in the EU. It trains trainers and adapts courses for target numbers. In the Maghreb and Mashreq (Cyprus and Malta), it runs the Arab Open University. This OU supplier has its headquarters in Kuwait and operates in 5 pilot countries providing for 40.000 students.

The overarching objective of this venture is to retain trained staff within their countries. This constitutes a factor of economic catching up in an area which should soon become a single economic area by 2010. This programme is also expected to help to revive Arab higher education and the will to make it work through cooperative provision and thus, in the longer term, to remove the digital divide.
See: http://www.open.ac.uk

Another aspect which is expected to improve the e-market place in the 21st century is digital signature. **Michel Combot, from the Economic Affairs Department of French Embassy in the USA** gave a US and EU perspective of latest developments. The use of e-signature for business and in every day life is an issue of confidence in the e-society. E-commerce is taking up 0.8% of total retail sales and represented 26 billion $ in the US in 2000. Security brokerage, on-line information, travel services are more successful to date than e-commerce of hardware sales. Even IT sales have decreased over the last year due to the presence of underlying consumer protection legislation. Electronic signature is dealt with in the US Global and National Commerce Act 2000. 74 countries subscribed to it as legally binding which should create optimism in this mechanism. It requires electronic consent to receive information.

The 1998 Government Paper Work Elimination Act states that by 2003 federal agencies have to make information available electronically. This applies also for tax payment systems and enrolment. Since 1996 197 million payments have been made electronically which amounts to $ 5 trillion electronically transmitted transactions. The Internal Revenue Services e-file is more convenient than the traditional tax file system.

The EU has produced an electronic commerce directive (2000/31/EC). In the information society act electronic consent is legally binding although a double check is required through request of information. Electronic VAT payments in France are based on the Public Key Infrastructure (PKI) legislation which is mandatory for companies with a turnover above FF 100 m, subject to interoperability, affordability, policies and procedures and training. However, before electronic transactions become widespread, the public has to be convinced of its convenience and needs to understand the system.

The business perspective was presented by **Mike Spanner, Vice-President, e-Business Operations in the Public Sector, from Unisys** who talked about e-strategies to develop the e-society. Management change in e-business affects government policies and the use of technology [dia2]. How to provide virtual services to customers is a matter of organising boundaries with a core of change. In a virtual world, brand and public sector organisation are important for service delivery and security in the private sector. Trust is the basic prerequisite for success.

Technological change is unpredictable in all categories and expectations are changing alongside. Thus people expect universal access and consistent services through their doors which puts pressure on the responsiveness of the service providers. The same type of applications for all types of organisations could more easily keep up with the speed of change. Ideally, ready made technologies and solutions could be used for the provision of services to citizens. Cultural forces and citizens are driving change of solutions, content and infrastructure provision. This has happened also with low tech solutions such as supermarket home delivery.

Politicians resent change in their organisational structures including those due to ICT. But in reality they have a delivery problem whereas technologies are only a tool set for better services which need to improve at the interface. Managing complexity is a challenge for the public sector despite audits. It has to distinguish between fee paying customers and non fee paying users. This will affect the information infrastructure of service and customer service provision. For example, smart cards were introduced in Malaysia for its two million population to combat corruption, although this could probably have been achieved by using direct debit cards.

E-strategies should encompass the following elements:

- community portals should be created to help the economy in the locality, although the question is how to make them pay
- because of the 100% penetration of TV providers they can act against the digital divide, thus partnerships or alliances should take place between them and network and content providers
- local and regional smart cards should help to improve the delivery of citizen services
- incubators should be encouraged because they stimulate the economy, in cooperation with governments and universities
- e-learning is essential for a prosperous e-society. Lack of knowledge made Asia lose its economic edge because metal bashing is not enough

According to **Ian Stewart, Chief UK Economist from Merrill Lynch**, the effects of technology on productivity and economic growth eventually determine living standards, income levels and life expectancy. 2-3% of productivity rise can improve living standards by 50% in 5-10 years. Compounded by the ICT effect, US productivity rose by 3% recently, while before it amounted to 1.4% per year which demonstrates the influence of ICT on economic growth. It can be measured by increased computer power and TV penetration, as well as the fact that the short three year span it took for people to join the Internet widely.

Technological waves and their impacts on economies and societies have roughly a twenty year span. For example, railway development and sanitation have influenced progress in the 19th century. Car, air travel and containerisation had a similar influence in the 20th century. The processes of technology driven transformations are not new. More mundane technological advances had a more profound effect on consumers than ICT, such as 50 years of electricity development and 50 years of motive power used in industry. Refinement took place with supporting technology, infrastructure and legal change. For example,

initially, car ownership was too slow for mass production. Similarly, the microchip technology was widespread in the seventies, and the world wide web in the nineties but they were not used effectively.

2-2.5% US economic growth in 2001 and beyond is higher than during seventies and eighties but there is not a 3-4% productivity increase. Implication for financial markets are that technological stocks are overvalued because of expected delivery. The process of innovation is old while technology is new, therefore the ICT effect will only become apparent in the long term.
Contact: ian_stewart@ml.com

Finally, **Peter Connor, Head of UK Region North from BT** talked about electronic communities. Perceptions of ICT have changed drastically over time. In 1947 Thomas Watson, chairman of IBM thought that there was room for just five computer in the world market. IN 1977 Ken Olson, President of Digital (DEC) doubted that anyone would want a computer in their home. Gates (Microsoft) on the other hand believes that technology is not waiting until people are ready for it. For him, the Internet will change everything. Tony Blair, the UK Prime Minister believes that countries which embrace e-commerce will benefit from improved national economic performance.

The issue is not one of technologies which are available but of infrastructure. New wave solutions will stimulate demand in cities and among communities. Harnessing community energies can be done through e-government, e-business, e-learning and e-community [dia11]. E-government should become a reality soon in the UK as the government is forcing the pace and in introducing ICT also at the local level. Michael Porter from the Harvard business school believes that enduring competitive advantages in a global economy lie increasingly in local things – knowledge, relationships and motivation that distant rivals cannot match. The digital divide is thus about capability (communication skills, technology literacy) and content, as much as connectivity to deliver services and changes. BT is actively involved in these changes as it believes with De Hock from VISA that change is about seeing old things with new eyes, about reconceiving to create a new order, rather than reorganising and reinventing. It requires radical thinking and trial and error, which is not new. William Blake already believed that the true method of knowledge is experiment.
Contact: peter.connor@bt.com

2. INDUSTRY REGULATION IN THE E-ECONOMY

This theme was introduced by **Councillor Tony Flynn**, **Leader of the Council, City of Newcastle upon Tyne.**
This year, the Global Forum was dealing less with regulatory issues per se, as represented by the public regulators, than with the relationship between regulation and competition. Regulation was examined as regards requirements to consciously choose how to enhance competition, and discussions dealt with how pro-competitive regulations should be designed and by whom. Comparisons were undertaken again between Europe, North America, Japan and other areas. Interconnectivity as an obligation was also addressed. Many technical and procedural aspects were debated, such as licences, competition rules,

access, dominance, tax harmonisation, universal service and cost issues. Content regulation came under scrutiny and whether it should occur through co-regulation. Data protection, privacy, encryption, deontology, electronic signature, security and cybercrime formed part of this debate.

Dr. Hellmuth Broda, Chief Technologist EMEA compared **Sun Microsystems**'s business strategy to Charles Darwin's principle which attributes the best chances of survival not to the strongest or the most intelligent, but to those most adaptable to change.

Large companies divide into supermergers or those with the best brains. Logos have to survive in a world threatened by technology instead of competent top teams, but brand loyalty is no longer reliable. Therefore large companies have to revise their response to the technological and demand context. For example, the Internet has evolved through a number of stages. Originally, it was accessed by computers, then it became embedded with other things such as mobiles. It is likely to become invisible, a service driven network with no terminal applications but a service infrastructure and service guides. This should increase quality, reduce costs and provide dial tone reliability. At the same time it should eliminate current service failures of which 40% are due to human error (operational error, improper internal system usage, deliberate system attack), 40% to technology (weak system monitoring, lack of standard system management process, inadequate configuration and testing procedures), and 20% to product (hardware failure, software error, limited capacity).

According to him, local and terminal applications will evolve into web applications. Browsers will give way to comprehensive deployment by proprietors such as Sun. The user will encounter a Sun tone and get a Sun ready connection to a Sun UP. Sun invests 10% of its revenue into R&D to develop such new platforms which will allow for massive scalability, continuous real-time and integratable packages, including e-commerce and on-line information. Services will encompass products and content. This is to overcome current fallacies such as to consider networks reliable, homogeneous, secure, run by a single administrator, with a never changing topology, with zero latency, infinite broadband and stable network membership.

Similarly, the six functions of the web: traditional, entertainment, pervasive computing, commerce, pocket communication, and voice activated services will evolve rapidly. Webtone will become as good as dialtone. There will be a proliferation of network devices (including Java and Jini), intra and internet will be accessed from personal portals, applications will be written for the net not for devices, intra and extranet will converge, software will be everywhere, applications will turn into services delivered through portals, and new service providers will emerge. However, capacity requirement is unpredictable as everything is mission critical. The big transition will be from a product centric to a service centric system where products and content will be merged into service provision. Instead of a lightbulb the consumer will have to subscribe to an illumination lease. Thus, the castle will become a tent based on a new mind set.
Digital divide is not an option and eliminating it is not philanthropy. Change to service usage from equipment with access is a prerequisite for the e-economy. Only with such a global infrastructure will equal opportunities become a reality in a truly global village. The right of access to ICT should become a service like water and the right of access should become universal. Services will be serving services.
Contact: Hellmuth.Broda@Swiss.Sun.COM

John Barker, Assistant Deputy Commissioner responsible for the compliance and coordination at Industry Canada talked about the role of competition organisms in the world of e-commerce. The principal objectives of his organisation are to promote and maintain competitive markets, to prevent anti-competitive behaviour and to encourage new and innovative forms of competition. The main challenges are to remain appropriate, to understand e-commerce and to respond adequately to demands and pressures. E-commerce can have a double impact in favour as well as against competition, thus it is the duty of the public agency to act promptly. Premature regulation may create confusion, uncertainty and lack of confidence. Canada has adopted a competition law in 1986 informed by feedback from industry. It deals with global issues such as criminal behaviour, civil complaints and merger reviews. This meant a geographic redefinition of markets and the nature of innovation and change.

The rapidly changing world of e-commerce is a stimulating period. However companies need to know what is permitted. It is important to know the characteristics of cyberspace to apply effective regulation. If it is too loose it will provoke lack of trust, if it is too tight it will stifle enterprise. Competition agencies should protect overall competition processes which implies that confidence as to be total in the market place and its regulation. Besides transparency and fairness, action is needed against misrepresentation.

Activities required from the competition agency regarding e-commerce is to prevent old mis-practices to find their way into a new field. For example pyramid selling and inaccurate product tests, cartels and paperless conspiracies are far more difficult to detect in the electronic world. Airline booking agencies may direct the computer system towards specific companies and exclude others. It is difficult to detect such computer codings and new regulations are needed, and perhaps even new definitions of e-markets and market power. Thus it is important to ensure the effectiveness of framework laws regulating the overall market economy. They have to adjust to new businesses and technologies. Electronic market mechanisms are barely understood and need innovative approaches towards compliance with regulations. Only by involving key players in the know is such change achievable. Once regulations are adopted, it is important to enforce them quickly and to make changes and new sanctions known.

Agenda for competition agencies:

- Understand
- Educate and advise
- Be consistent
- Adjust
- Cooperate

It has to be remembered though that while e-commerce is growing the brick and mortar world continues to exist and play a role in the overall market place. It is not clear yet, whether strong deregulation like in Canada has managed to increase competition.
See: http://competition.ic.gc.ca

Thanks to the intervention of **Alain-Louis Mie, Senior Vice-President International Public Affairs from France Telecom,** it became clear how large telecommunication players, including incumbents, are shifting their position and cooperating actively in the regulation game. He talked about co-regulation and the e-economy, based on the experience of the global business dialogue (GBD) on e-commerce as an example of policy cooperation. This European initiative was established in 1999. It is a global organisation with a regional structure (European cooperation with US Caribbean, Africa, Asia Oceany) and light administrative support. Nevertheless, GBD was not able to eradicate conflict between US and Europe as regards reciprocal understanding and concerns, about for example data protection. Objects of stalemate are dropped in order not to hamper overall progress. Its membership covers the complete e-commerce value chain (service providers, ICT manufacturers, high-end services and media producers and distributors). The underlying assumption is that e-commerce has the potential to increase prosperity, create employment and improve quality of life.

The borderless nature of the Internet requires a global response to e-commerce policy challenges. Business needs to adopt a leadership role and work with government, consumer organisations and other stakeholders. E-commerce policies should be market driven and based on industry self-regulation. The political goal of GBD is to initiate constructive dialogue through advocacy outreach with key countries, international agencies and stakeholders from the less developed world. It aims to establish a private sector policy benchmark and seeks to influence governments in adopting inputs to their policies. It has already managed to achieve consumer confidence and contributed to convergence while preserving cultural diversity, cyberethics and cybersecurity. It has contributed to building digital bridges, e-government, Internet payments, taxation and trade agreements.

GBD's success rests on understanding both roles of industry and government in the shaping of e-commerce policies, its ability to work with all stakeholders on complex issues due to the direct involvement of CEOs, its consensual nature of recommendations, its global composition and its quality of work. An example of difficult negotiations is the classification of GATTs' services. No principles of reciprocity exist which causes both the EU and France problems. Content entrants are poor and a clearing house with a censorship mechanism was proposed, but the monitoring system was abandoned because it was not acceptable to server providers. Filtering tools managed by the industry content rating association was aiming at mutual recognition agreements (cryptographic) in cooperation with government and the private sector. This was to establish a better balance between individual freedom and collective responsibility.

Another example of GBD activities is building digital bridges with the developing world to overcome the digital divide. GBD is establishing a knowledge network which acts as a clearing house of best practice. As regards e-government, GBD promotes the use of the Internet to improve the relation between the planners and the planned. A most delicate issue is intellectual property rights including of unacceptable material disseminated on the Internet. Many other issues are being tackled by GBD not least the general acceptance that access to the Internet should not be considered as a basic but as a value added service.
See: http://www.gbde.org

A panel chaired and moderated by **Shigehiko Naoe, Professor of information Policy at the Chuo University in Japan** collated views from regulators, lawyers and the industry. The focus of the discussion was whether co-regulation or self-regulation should apply to the e-economy.

Shigehiko Naoe believes that during a period of rapidly changing technologies it is difficult to adopt new regulations. The aim is to create new standards for the e-society helping society to adjust to the new markets. The question is how to make the media and other players adapt new technologies world-wide in a competitive manner, while maintaining harmony between nations because conflict is not workable. The developing world depends on liberated telecommunications markets but experiences differ widely between countries. Japan had to change its industry during a depressed economy while the US and the EU benefited from economic growth during liberalisation.

Market mechanisms and powers are the key factors of change which put competition above regulation. But all economic acts need rules and regulations. The question is to determine regulations appropriate to the new economy. Although governments supported new entrants they were more or less successful. Yet old incumbents face also uncertainties. The mobile licences created difficulties for companies and their new business models and they still recover from what they consider government punishment. The challenge now is to create rules and regulations which will bring beneficial solutions.

John Ketchell, Director of CEN/ISSS considers that co-regulation is the winning formula. It is expected to reconcile the view that the fast moving e-business should be left to market forces, with those who consider that business is confused after liberalisation (see the chaos on the IT stock market) and needs 'normality', those who are worried about consumer rights and those who want to protect SMEs. In anticipation of government regulation, businesses established consensus standardisation (over 350 ICT standards consortia). However when businesses are also the end-users they are becoming aware of the lack of interoperable solutions, fragmentation of available technologies, etc. Consumers consider that global solutions are not appropriate to local needs, such as European cultural identity. Although EU regulations are here to stay, standards are inadequate, as the Internet can confirm.

Three European Standardisation Organisations (CEN/ CENELEC/ ETSI) are recognised in the 98/34 EC directive. Rapid results are open to all parties. An example is the standard on the implementation of electronic signature. This took place through direct participation of key stakeholders not through government, although they took national positions and linked them to global action and legislation. However, formally drawn up standards are not always needed in the ICT arena. Complementarity and voluntary standards replace former regulations. Often EESSI specifications are submitted to the European Commission ahead of global developments. (e.g. 95/46/EC on data protection and privacy). The co-existence between standards and regulation which have a long inter-relationship in Europe are more vital than ever to banish market confusion, avoid undue regulation and help implement existing legislation. Open, transparent consensus platforms are the key to co-regulation. Co-regulation concerns technical as well as non technical standards. For example it is not clear whether the 2001/29/EC directive on digital rights management is a standard. Co-regulation is active in all e-Europe relying on common administrative objectives and joint efforts. Net requirements are vital for European needs. They add value when they are

brought up to global standards, thus overcoming linguistic problems. Consensus standards, regulations and regulatory cooperation are making legal history as they are able to bring together technical and non technical parameters.
See: http://www.cenorm.be/isss

Francois Bélorgey, Strategic Adviser on Information Technologies to the Prime Minister of France gave some personal views on regulatory issues and standards. Intelligent regulatory processes should be at the service of industry and vice versa. For example, the decision about the sale price of GMS licences and whether to tax turnover should have been debated with industry. Negotiated solutions may bring more to the government than one sided decisions. For example, the government could have negotiated a percentage of research investment against a lesser price and more certainty about future auction procedures.

The establishment of standards should not be let to lawyers and standard agencies because they become a self-perpetuating activity. Political power is needed to initiate standardisation processes, even if this means that they have to be modified later once the original objectives may have become redundant. Thus, it is not rigid regulations but a regulatory process which is necessary for electronic exchanges. Regulation procedures have delayed the Internet in France and slowed down e-commerce. More pragmatism would be beneficiary. For example, it should be possible to apply existing international methods for the certification of payments in the absence of national electronic regulations. It may be sufficient to ensure conformity of products. In the absence of new rules, there is no framework for PR and commercial claims of electronically sold products and services. Agreements could be established initially between a small number of countries as regards guarantee applications for products and services of the country of origin according to the regulations of the country of delivery. This is not a symmetrical solution but it is implementable and adjustable. For example, in case of conflict, training company correspondents can be found and held responsible in the country of delivery. Such a system should not allow for opt-out possibilities, which should be erased in the EU area altogether.

Definition of private data is not clear internationally. The non profit origin of the Internet has now become useful for commercial purposes.

The French industrial strategy and technology Council (CSTI) has carried out research into the use of utility infrastructure for the transport of electronic networks (not low current but high tension) to achieve cheaper telecommunications. It examined the planning and environmental conditions, connectivity issues, competition law, implementation agencies and conditions required to set up new companies.

Another issue is copyright and author rights. At present, they are managed by the society of authors which handles royalties, taxes and intellectual property according to 1985 legislation. They should be given to the copyright holders and authors to reward their creation. As regards training, it is conceivable to create Internet schools for the information society. R&D organisations in France and in Europe dealing with operators and public actors were traditionally handled by great public clients. At present no research institute is capable of carrying out large scale innovation R&D in telecommunications, except in some

specific sectors. National multimedia companies with joint assets sell research expensively. They contribute to national economic growth, but what are in this case the implications for the international situation? They are not alone in supporting economic growth and it should be remembered that it is the Internet which has changed the world.

Randy Yaloz, Partner of Euro Legal Counsel Group Paris/New York/Tel Aviv presented a legal perspective of electronic signature. For him, e-sign means data in electronic form attached to a contract and executed by someone intending to sign the record as a method of authentication.

His experience is pragmatic as there is a great need to clarify the use of electronic signature (e-sign). Tel Aviv in the nineties provided a context of a great number of technological standards operating alongside each other. Mutual recognition took place at different paces and thus did not really happen. The question was how to bridge the gap between such multitude of practices. A piggybacking approach was adopted to overcome the diversions. Countries without funding could contract parties to benefit legally, subject to own specific regulatory regimes between parties and the certification service provider. Hence signature was recognised for specific sectors without technological R&D and recognition. It was a matter of picking the best of all systems and to take advantage of innovative thinking.

Implementation

For US practices industrial self regulation is the key to development. States adapt similar but not identical standards. Those who define standards verify them in the courts. They become acceptable in the long term subject to legal disputes. Market standards are standards established by custom and practice. This is equivalent to EU directives being transposed into member state legislation.

The Canadian model act was adapted in Asia (Malaysia). It led to innovation in e-commerce in 1997 in Singapore, Hong Kong and other places which came to an agreement on electronic signatures. Similar developments took place in Africa, Latin America and the Middle East, although they still lag behind with diversions and multiple terrains.

Conversion between EU and the US consists of regulation by market and by standard. Differences were rediscussed and transcribed into interoperability. It was not clear whether the two approaches had equal weight but regulations could be agreed despite differences. E-sign is becoming the legal equivalent of hand-written signature, provided that the conditions of hand-written signatures are fulfilled. Third party arbitration is left to industry.

Consumer protection requires the disclosure of information (compare the US e-sign acts with EU directives 99/93/EC on secure signature). Advanced e-sign is more secure but not incorporated in e-sign act or “ucta”. Market self-regulation continues to drive e-commerce in the US. But it is possible to adopt EU legislation there because it is recognised. Consumers must endorse the consequences of purchasing decisions. Such minimalist approach is acceptable for B2B and B2C mutual recognition. Thus the US and the EU have a multilateral approach concerning liability, data storage and accredited certified service providers. Such

solutions practised mainly on the Internet have become practices worldwide and are transposed into the legislation of various countries (eg. handled by the steering committee for certification in France, US private sector companies such as Digital Signature Trust or Verisign in the US). Another interim solution is legal standards set in European member states through use of member state certification service providers.

The user and industrial point of view of regulation was presented by **Kim Ambler, Director of Industry and Policy Affairs, Computing and Networks Operations of Boeing** and **Tom Marten, Director of International Relations of Worldcom**.

Kim Ambler talked as a large scale business user. His proposal to expand e-society rested on five principles.

- Accelerate information society by liberalising markets for consumers and by providing information through open competition. WTO nations may continue to operate within existing commitments, such as information and telecom agreements or reference papers on regulations in information society. However, regulation should not be directed at areas where competition exists such as the Internet.

- There is a difference between telecommunication and the Internet. They are physical facilities as opposed to enhances services and protocols, property, applications and files which are not Internet facilities.

- EU trade negotiations distinguish between regulated telecoms and non regulated data processing. While telecoms should remain regulated enhanced services should be unregulated.

- Promote competition and prevent monopolistic behaviour (eg old telecom market, local telecoms and bundled local loop). They should be liberated through enlightened regulation in order to convert monopolies into competitive situations.

- Competition and enhanced services and the Internet should be free to flourish without regulation subject to non discriminating interconnection and freedom of contract; this may require a limited government review of competition law.

See: http://europa.eu.int/comm/dg15/en/media/index.htm

For **Tom Marten** gave his own view concerning telecom regulation especially in Europe. Initially, competition was intense in the liberated telecom market especially for new entrants, in terms of development, access and prices. However, investment in telecoms was superior to other industrial sectors. E-business was slowed down due to lack of security on the Internet.

This posed the question of how to design preliminary regulation for telecoms. Regulations for consumers and end users provoked price drops in the open market (-30% in France, 100% benefits with 50% price drops for Cisco). People invested instead of purchasing services. Markets opened up to speculative investment. This led to local economic benefits. For example, broadband access in the US was half the price than in Europe. This meant that convergence became necessary. The powerful US regulator - the FCC - ensured that newcomers became successful with incumbents. However, despite legislation they continued to compete on each other's territory (cf Microsoft).

In his view, local access to networks remains restricted in Europe and regulation is weak in that respect. The poor uptake of DSL lines demonstrates that. Corporate clients do not consume information and produce more goods than services through the Internet. Because of perceived existing blockages, US telecom newcomers consider that independent regulation is necessary in Europe, as there is a discrepancy between global and local market positions which prevents fully integrated global players to operate freely.
See: www.worldcom.fr

Discussion

During the discussion it became clear that positions differed strongly on regulatory issues between regulatory bodies, private industry and users. Moreover, the latter had contradictory objectives and requested both less and more regulation depending on how this would benefit them. European regulators believe in orderly markets which offer some degree of consumer protection while the US wants to leave the whole field to the private sector. Many contradictions exist also within countries, such as the regulatory responsibility split up between two ministries in Japan. There was no common position as regards the respective merits and drawbacks of self regulation, (voluntary) standards and co-regulation. Privatisation and liberalisation has been slow in most parts of the world including the USA and is perceived differentially by incumbents, newcomers and those who aspire to become global players. Clearly preferences for different types, or absence of regulation are motivated by self-interest. It seems to be extremely difficult to establish a level playing field, be it through the WTO or by pragmatic agreements between individual partners. Adverse effects were partly attributed to the speed of change in the telecom field and the conflicts between international and national interests. Political sovereignty seems to be a particularly sensitive issue when power over information is at stake. It was hard enough to reach international basic telecom agreements but it is even harder to see how agreements on services which are perceived as the lucrative future can be reached without fights. Only courts may be able to unblock the conflict over the local loop and enforce a system of workable deregulation.

Conclusion

Professor Jean-Pierre Chamoux from Paris University V, René Descartes, France gave his personal reaction to the day's proceedings. He was struck by the speed of Internet uptake in the UK mentioned by the UK Chancellor Gordon Brown and considered that public policy could never have achieved such a result which was due to market mechanisms, as well as to local and personal innovative capacity.

Interventions are authoritarian by definition and were obviously not necessary. It would have taken much longer to devise and implement public policies in this field than the spontaneous expansion which was brought about by human ingenuity.
This demonstration of people power calls for humility on the part of the regulators and their interventions. They should know that their decisions reach far beyond the evolution of the market and they would need to be aware of such wider repercussion. Regulatory interventions require flexibility and should derive from an understanding of the changes which are happening to communities, industry and society at large. Analysis from a remote position such as work carried out by ETSI would be a useful contribution.

The information society is at the antipodes of industrial policies of the 30s and the 50s. Protectionism has been replaced by information industries which are diversified, guided by initiatives and decentralised owing to scientific energy. Moreover they depend on entrepreneurs, participation in social movements and speed.

New products and services related to PCs, mobile phones, Internet use, etc are diversified. Information deals with leisure, tourism, the media, community, administration of cities, and the relation with citizens, enterprises and individuals. The information world is heterogeneous, thus difficult to understand and cannot be reduced to a single formula. It is not possible to sum up what the information society is undergoing at present.

What happened on September 11 will prevent too much serenity in future development. Yet, industrial adventures were always linked to great risks, human as well as financial. The history of Newcastle or Northern France witnesses that graphically, akin to the past history of Pittsburgh, Dresden or Metz. It should not be forgotten that accidents were frequent in the second part of the 20th century.

Risks in the information society have not the same effects as industrial risks. The latter claimed human lives while information society risks are about losing money. Thus it is less consequential to overcome the current slump and seek recovery in the longer term. Nevertheless, not only government, industry and finance are tested by crisis but also regions and local authorities. Local elected representatives are facing considerable challenges from their electorate which expects them to help them overcome the difficulties of restructuring and regeneration. National governments have also responsibilities in assisting the transition and recovery of cities and regions in decline. Many such cities seem to fare far better than expected. They focus on skill training to meet the demand of the information society and integrate ICT into the daily life of these cities. They are also demonstrating their local dynamism to the outside world and how they are able to adapt from their industrial past to the requirements of the service society of today and tomorrow.

Le Havre is the first modern Atlantic port which managed to regenerate itself. It was building on its traditional activities and introducing the latest ICT applications and tele-tool transformation treatment to modernise sea borne container transportation and terrestrial distribution.

From the description of future satellite investment, it became clear that such large scale adventures are full of hazards. Intervention can reduce risks but it is necessary to remain aware of problems of misadventure. It will never be possible to avoid all risks, but human action should be able to control them. This means mastering not sharing imponderables. What is needed is a vision, a project, a method. The Global Forum

helps to formulate visions and to refine the project. What students are taught also today is a method to dominate the material world instead of becoming its slave. This method is called civilisation.

The Global Forum reminded everyone again that, even in the light or risks and uncertainties, confronted by shocks, troubles and extraordinary events, even when lives and social integrity seem to be threatened down to their foundation, what matters is to keep control over oneself, which means to remain civilised.

DAY TWO

3. VIRTUAL SERVICES IN THE INFORMATION SOCIETY/ BUSINESS MODELS AND USERS NEEDS

This all theme was chaired by chaired by **Giorgio Prister, Manager of Local Government Market Segment, Global Government Industry, IBM, EMEA**
The main issues discussed under this topic were cutting edge services for e-business. They included Internet and new relations between customers and businesses, the 3G systems meaning global change in the multimedia approach used by virtual offices, virtual management, etc. Services were expected to vary to suit the new business models, such as B2B, B2C, B2A, C2A, C2C. Other innovative applications and services were assumed to be specifically tailored to the citizens in cities and regions. Progress was presented on the latest technologies aimed to address user needs, such as broadband Internet telephony, cable, satellite or 3G wireless. The question to be explored was whether they were competitive or complementary. The second day gave ITC businesses and service providers ample opportunity to express their views and to make pleas to government, regulators and other information society brokers.

Michel Richonnier, Director from the European Commission (represented by **Bror Salmelin, Head of Unit, Electronic Commerce, European Commission**) dealt with what challenges the information society held for Europe and possible answers, notably e-Europe.

The presentation showed the stages which lead from industrial revolutions to societal revolutions. Between 1800 and 2000 the lead from handicraft to industrial production and e-business with respectively skills, capacity and multi-skills. Evolution takes also place in space, from local to multinational, to inherently global locations. Strategies evolve from win-lose to win-win and innovation was linked to energy, transportation, materials industrial mobility, information processing and communication over the last 200 years. This

analysis is most likely Eurocentric, similarly to the facts and figures presented to show societal change over time [dia3].

When revisiting e-Europe or the European social model which may be in transformation, its characteristics are dynamics of entrepreneurship, Internet skills in an information society for all, mutual reinforcement between social justice and stimulating entrepreneurship.

In response to this historic evolution and related assumptions the eEurope 2002 Action Plan focuses on e-safety (cheaper, faster and more secure Internet), investing in human capital to bridge the digital divide and in stimulating the use of the Internet for e-commerce, e-health, e-government and e-inclusion. True integration between EU and member states actions seems to become a reality with common goals implemented at national level while the European Commission is concentrating on benchmarking.

However, many problems persist, such as security (unsolicited emails, virus attacks, abuse of credit cards and legislation has to be extended to tackle deficient areas such as electronic signature, e-commerce, copyright, jurisdiction and applicable law, alternative dispute resolution, e-services and taxation. In parallel to legislative efforts social conditions need to be made right which includes greater decentralisation of implementation. Internet accessibility is till hampered by technical problems especially for disabled people. e-government in Europe suffers from a lack of multilinguality to achieve a smooth provision of information, communication and transactions. Ambient intelligence also needs developing by proving ubiquitous computing, communication and an intelligent interface.

There is a long way to go for Europe to move to the forefront of the e-society. It still has to achieve scientific excellence, critical mass and focus when building on European strength, which should be visible ultimately in European Patents. FP6 research should move Europe towards progress without ever losing sight of the premise that people must come first in an all inclusive knowledge society.
See: http://europa.eu.int/eeurope
www.cordis.lu/ist

Rt. Hon. Nick Brown, UK Minister of State for Work and Pensions in Cabinet of Tony Blair, and Member of Parliament for Newcastle, was of the opinion that new technology had to be introduced at school age. He had been involved with ICT during his whole political career and saw the sea changes. The UK government has a lot of ICT to catch up with for e-government generally to specific electronic services for citizens and businesses. ICT present 5 billion transactions take place per annum. 20 government departments and 480 local authorities and 200 government agencies will all go on-line by 2005. They will be joined up and provide wide, transparent available access. Modern services have to be inclusive thus access has to be both physical and literate for all of an age of understanding.

The aim is to meet the needs of people, not of government departments which means to act against the Chinese wall syndrome. Besides the use of the Internet and call centres cross departmental communication structures for joined up government should also enable access to original documents and face to face contacts if appropriate. All this should contribute to a leading UK knowledge economy.

Consumer focused services changed people's attitudes towards the use of the Internet. Brown discussed the stages through which the UK government was introducing electronic communication ranging from taxation to citizen services, leaving always a possibility of a gateway leading to person to person communication if needed. So far £350 million were allocated to local e-government (including for city websites) and 25 million to pathfinder activities providing alternative contacts between citizens and government.

Changes in communication technology have also led to structural changes in the government administration. For example, work and social benefits have been put under the same ministry in order to improve the chances of people to get work assisted by fiscal changes in favour of working people. Still 120.000 civil servants are needed to cope with the £ 3 1/2 million benefit payments and the 1 million personal contacts per day. Thus investing in ICT pathfinder navigation makes sense. ICT infrastructure is going out of date quickly and the ministry is presently investing £ 2 million to replace inadequate IT equipment. Job seekers will be the first to benefit from a fast, up to date and integrated service which they can handle from a terminal. Access is by job type, requirements, industry sector and area. This means managing the job market in a proactive way. As 90% of job seekers have skill problems (numeracy, literacy) on-line training opportunities are integrated in this new system. Job seekers can also get access to personal advisers and all these facilities should have a positive impact on state benefit dependency and access to income. It should help to fill the 350.000 jobs available in the UK on average at present.

Benefit distribution is also being reformed with the assistance of ICT. 1/5 of claimants do not have bank accounts and universal Internet access should improve that and make card billing cash available as well. Errors will always occur but confidence building and inclusion, as well as an easily understood system are essential for progress. Passage of time and innovation in the future are not acceptable methods to remedy problems which are real and large. A world which is becoming a smaller place with shrinking time distance can enhance mobility and thus life chances, globally.

Edith Cresson, Former French Prime Minister is also working on training and reintroducing people into the world of work. She concentrates on second chance ICT skill training. Many of her students are young, have been delinquent and come from ethnic minorities. The requirements of her education world is aware of the value of face to face dealings, a reason why events like the Global Forum are so valuable for people coming from different backgrounds and places.

In her experience the digital divide often goes together with other divides, such as between different social categories which should not be ignored. For that reason the network of second chance schools has been put into place. It includes institutions from 13 of 15 EU member states. Education is a powerful tool to reinsert people into mainstream society. It may have been a mistake to create forces social mixes in schools, as deprived pupils need special attention. Putting computers in such mixed schools is no guarantee for improving the lot of the weaker pupils.

Europe with its rich population has to act. However, this must not take place according to traditional methods. It is necessary to adapt to local realities and identities in ones own countries. Immigrants cannot understand literature of wealthy classes. The young refuse these values but they are able to learn maths which is less culturally prejudiced. Schools in Marseille and Mulhouse confirm this. Otherwise deprived school children are able to acquire math knowledge above the baccalaureate level. Understanding society through reading is more difficult in such circumstances. But schools found that these children were more willing to read Racine (a French classic) than contemporary thrillers which contain more value judgements. Should life be understood through literature, but references to specific cultures must not be conveyed in an authoritarian, culture centric way. All countries have poverty pockets also among indigenous people who feel rejected in school because their values do not correspond to the mainstream ones. Often they are realising themselves outside school and outside the social system. They may be right to criticise the system but they should have knowledge of it to make informed objections. ICT plays an important part in filling these structural information gaps in this new 'horizontal' education system.

Enlargement of Europe will mainly bring in well educated people despite communist values. Eastern European have far less illiterate people than Southern European countries. In France, some analphabets can speak neither French nor Arabic. They are inventing an in-between language, as opposed to the elites which have studied in Europe and the US. While the Open University seems to be successful it is not applied in France because of French nationalism, but it is spreading to the developing world where people coming from an oral tradition do not even have access to books.

Distance learning systems are created by local actors and local firms offering placements. But the pupils do not know how to work, although they may have cars or form part of the police. Therefore the core of this second chance education consists of work experience with individual tutors, educators and technology teachers. Most of these young people are able to learn computing to an acceptable level but have difficulties in forming sentences. For example, they are not able to make reports on their placements or hold a diary of their past by hand. They are able to acquire such know how not face to face but on the computer which gives them more self confidence as nobody is judging them as persons. In this sense, the PC becomes a mental tool.

Nevertheless, ICT does not replace education. Human contact is necessary as well as recognition by tutors and other gratification. In an educational environment it is possible to demystify trades through work experience. Manual work is still considered negatively despite new technology. The educational environment is valorisation their past knowledge, know how and experience. Recognition is important and does not rely on formal exams in supervised halls. Diplomas which recognise their efforts and successes are based on majority correct replies to questions and certain tests. Many understand words of specialised knowledge better than the vocabulary of everyday language.

Education in countries which lack basic means has to take place through intelligent diffusion of knowledge adapted to, and respectful of local culture. This can enable young deprived pupils to improve their life chances without them having to be educated in Europe or taught by European teachers in their own countries.

3.1 New Business models

A panel made up of representatives of ICT businesses chaired by **Giorgio Prister** and moderated by **Frederic Tatout of the French Ministry of Economy, Finance and Industry** discussed new business models. General trends were identified by the business community: **Giorgio Prister**, **Roger Watson, Head of e-business Strategy and Planning from BT Ignite**, **Andy Kyte, Vice-President & Research Director from Gartner**, **David Ankri, Development Manager of Smart is Marketing** and **Tim Brunton, Senior Commercial VR Developer of The Virtual Reality Centre at Teeside Ltd**.

As an introduction, **Giorgio Prister** commented on progress of e-commerce. Out of the 157 "common services" identified, only 10% are being delivered electronically. Even in the most advanced countries this amounts only to 20%. Most social security organisations (86%) have a website but only 16% have incorporated some element of transaction.

The e-government journey consists of waves of evolution. It started with information on the web and evolved into transactions between single agencies, then integration across agencies and now transformations which include "Adaptive Governance", knowledge providers and complex citizen or business interactions. What the industry is focusing on at present is enhancing citizen participation, increasing operational efficiencies, redefining communities, enhancing economic development and improving services. Better policy formation should also result from e-innovation.

In the light of exponential growth, the industry is faced with new issues such as requirements in the short term, also for unforeseen applications. The key problems remain security, fast transformation, interoperability and openness. In times of rapid change it is particularly difficult to keep legacy assets of data and applications. Public administration may also raise new challenges. The answer is that e-infrastructure in whatever form has to be open, robust, scalable and manageable to support such growth, especially in continuous operations.

In order to service end-to-end relationships with citizens and enterprises 14 h per day and 7 days a week, new support structures have to be devised at both the supply and demand side. Enterprise resources have to be matched with life events and support knowledge management and be available on all three portals (information, interaction, transaction). With increasing numbers of services, the need for trust, privacy, security and continuity is also growing and the distance between ICT state of the art, users and public service providers has to narrow. Closer dialogue between the main players should improve responsiveness. In Barcelona the "Netgen" infrastructure for SMBs generates multi-lingual support and personalised options and thus enhances local economic development and citizen participation. Citizens who can use smart cards to access public and private services get a better response to their demand.

A number of external conditions need to be fulfilled, however before the benefits of ICT for customer services become noticeable. Among them are the simplification of fiscal systems, seamless connections between administrative departments, a reduction in errors and closer cooperation between business and tax authorities in developing a mutually satisfactory system. The formula of "Single Window Access" is being tried out in Manitoba.
See: www.ieg.ibm.com

Two studies for the City of Liverpool and the Whitbread group (breweries) led **Roger Watson** to conclude that new e-business models have a competitive advantage, due to better performance, improved reputation, lower risks and lower prices. The use of ICT can be time consuming as opposed to price consuming, but the reverse auction system with on-line auctions replacing traditional computer contracts can remedy that. Commenting on the dot.com situation, he considered that financial companies were overdriven by greed and lack of robust business plans, while businesses were overdriven by fear of not achieving quick returns on investment. Thus "e-port to e-port" arrangements, whereby suppliers and customers share both capital funding and benefits, provide better outcomes.

David Ankri talked about virtual services in the Information Society and affirmed that they did not have to rely on public help to be successful. His example was e-EU smart cards in a climate when services using electronic signature are slow. However, making e-mail with encrypted files secure meant delivering a service mainly to the community, the public sector and citizens. For that reason, infrastructure should be provided by the public sector. An interoperable solution could consist of PC access to services which would be certified by public authorities. They would hold a directory of all bona fide users. Such a service would be user centric, not industry led. Examples of applying ICT to this type of service in the private sector is VocaLid, an e-banking card, but there is no reason why such a system could not be applied to C2G services.
Contact: david.ankri@wanadoo.fr

Tim Brunton's video went a step further by introducing virtual reality within the three dimensional world. As long as the 3D world has to grapple with 2D tools to plan it, virtual reality will remain restricted to real time visualisation. Simulations could assist in decision making, for example in urban development and reduce lengthy planning procedures. The problem is one of equipment, because for a truly interactive mode of public participation both the developers and the public would have to be able to access the tools to demonstrate their respective proposals.
See: www.vr.tees.ac.uk

E-business models had to provide value and better access to services according to **Andy Kyte** who discussed how the business process can drive value chain opportunities which, in turn, improve the business model. Multiple functions of technology enabled businesses to create confusion in the business environment itself which, when it was not pidgeonholed by government had to produce organisational

responses itself. Globalisation is the primary force, for example, through global capital and global innovation, but competition, markets, visions and politics are other powerful drivers in attracting private capital into global communication. Consumers aspirations are also becoming global which increases homogenisation.

Government websites reduce costs of existing organisations, but costs will increase in the future overall because consumers will demand more. The true consumer revolution is the fact that consumers, also as citizens can compare globally, or at least Europanwide what is on offer elsewhere and demand the same from their own administrations, suppliers and service providers. Virtualisation, not dot.coms are the critical forces of change. Successful responses have to include a rise of smart sourcing, functional specialisation, purchasing business services, participatory management and competition for skills.

E-businesses which are able to satisfy these conditions will also be able to produce higher returns on capital employed, as well as faster, flexible and focussed services. They have to be world class though to catch the short market windows. The use of ICT and third party logistics has changed goods and human resource organisation into a new structure in the private sector, as opposed to the public sector which cannot achieve the same cost benefits.

Different forms of transparency are required, one for shareholders, service providers, suppliers and regulators, the other for customers, employees, the press and interest groups. Access to statistics, for example, is a precondition of changing the security paradigm.

The basis of competitive advantage is excellence, brand promotion, product and service leadership, and customer intimacy. However, not all businesses can fulfil all these assets. For example, customer intimacy is an advantage of supermarkets but does not apply to their third party banking.

Competitive advantage does not therefore depend essentially on ICT, forces of global competition and the deregulation of business sectors. The capability of responding to new factors such as erratic behaviour of people who want part-time work, an unstable environment and cultural diversity will determine whether a business will be sustainable. This means a careful examination of operations and process which should be driven by opportunity not threat. Choice will be restrained by what the business is for and whether someone else does, or could carry it out better. Therefore a business strategy has to be holistic and not confined to e-business, able to recognise which drivers affect the situation and identify the appropriate ICT tools accordingly. This requires businesses to develop their own measures of potential product and service demand. Knowledge of people as consumers and demand as effective use is the key to success.

Overall, the panel predicted change towards faster, flexible, focussed, as well as more powerful and more service oriented and value added businesses. They believed them more profitable than supply of infrastructure and software. It also means that the end users have less choice and control over the products and services they want. The consumer is also drawn into more time consuming rather than price consuming models. Service providers claim that end-led technology creates confusion and virtualisation should be about quick return on capital. The conditions of global capital may contradict global consumer

aspirations which are looking for homogenisation. However, this also implies that customers are able to shop globally for what they require. Security remains an issue and some businesses stand it on its head. For them it should not be a matter of keeping out danger but of letting in safety. However, e-commerce will remain restricted as long as electronic signature and encryption, together with the necessary legal conditions are not fulfilled.

New service provisions including by government will not necessarily reduce costs to existing organisations because users are expected to want more. Holistic business strategies which do not only apply to e-businesses may move from optimising processes towards opportunity driven strategies which recognise instant niches of consumer demand before regulatory intervention.

3.2 Addressing Users Needs

The panel who dealt with user needs was moderated by **Maitland Hyslop, Head of Knowledge, Information and ICT for One NorthEast Regional Development Agency**, who praised the merits of the best fibre infrastructure in Europe which is enhancing the actions of the regional development agency in the North East of England.

Prof. Kel Fidler, Vice-Chancellor at Northumbria University spoke from the academic perspective and argued out the advantages and drawback of distance learning, virtualisation of education and whether competition from private sector content providers are constituting a threat. In his view, commercial e-learning services are complementing what only universities can deliver. However, providing virtual services has an impact on universities. Despite globalisation, e-learning has a local, national and international dimension.

E-learning are demand driven services in terms of goods, business services and education. A user centric view prevails and will determine how these services are run, whether on campus or elsewhere, and how they are going to be timetabled. For virtual services, the web is driving change. It already offers blended learning and hosts private sector content providers. Increasing flexibility allows for targeted and accredited online courses used by corporations and SMEs alike. Prior learning in whatever form counts towards accreditation.

Like many academic institutions, Northumbria University had to adjust. At present it is offering corporate and professional programmes and it is acquiring e-learning experience in a virtual learning environment which includes e-library facilities. In future it will provide e-business and web self-service access as a corporate and educational entity. It had to deal with many challenges, such as the cost of content production, handling learner tutor and remote learner support, as well as new forms of assessment. All this meant cultural change within the university and a shift from education to facilitation which creates a dilemma between engaging the student and providing “edutainment”.

See: www.northumbria.ac.uk

Prof. Louis Lareng, Director of the European Institute of Telemedicine France, explained the complexity of telemedicine as a value added service and how ICT is broadening access to specialised medical knowledge and providing better chances for both clinical intervention and preventive medicine. However, besides technological aspects, this new practice raises organisational, financial and regulatory issues.

ICT presents advantages for all stakeholders. Patients get best possible and secure care. Medical staff can benefit from synergy in cooperating with other teams and medical institutions and gain access to openly available knowledge. The public gets much better and up-to-date information and thus builds up trust in medical knowledge, procedures and public health generally. By gaining access to a much broader pool of information including from cooperative research, pathological science can advance more rapidly. Public administration can allocate their finite resources more equitably, also across the country and set up a continuum of medical care services, ranging from acute interventions to social care in cooperation with other public services.

There is a problem of financing because telemedicine cuts across existing fund providing institutions. In particular, the requirement of high technology in terms of high speed transmission, interoperability, specialised terminals, digitalisation of data present extra expenditure and recording systems required for the regulation of telemedicine networks.

Legal aspects include deontology and ethics as telemedicine changes clinical responsibility, the medical secret, protection of patients identities, authentication of all those who have access to the network and its information, and network security in general. New regulation is needed to legitimise this new medical practice. Electronic linkages between medical and other institutions also require clear rules. It remains difficult to evaluate telemedicine in traditional terms of cost benefit, quality of care and training requirements.

The question is whether telemedicine will integrate in the existing system or become a third separate sector, but such a scenario is unlikely. Instead, it could form a bridge between hospitals and the general health sector. Current challenges of integrating e-health into the e-society are cyber-surveillance and ethics, which should put people first. Despite all these problems, telemedicine and other ICT supported tele-activities are opening enormous possibilities.

Jacques Pomonti, President of Sorbonne Radio - France discussed the convenience of digital radio for long term academic distance learning which for him will never replace face-to-face education. Different ICT tools are used in both types of learning, such as CDs, the Internet and digital radio which can be connected to a computer, TV set or telephone. The advantage of digital radio is its low cost to the end user, ease of use, speed of digitalisation and unlimited transmission capacity. It also promotes a “push” technology, thus

all programmes are encrypted and tariffs vary according to economic profitability. However, digital radio is in competition with TV, global interactive services and the Internet.
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Bernard Garner, Public Transport Development Director from NEXUS presented user requirements for transportation information and the need of a public transport operator and provider to gain access to the e-society. Customers' aspirations are constantly rising and the ICT facilities of the transport providers have to follow this demand. The North East of England has spent the last three years introducing electronic handling of ticketing and information at stations and will expand the facilities to other services.

Graça Pombeiro, Deputy Director of the Secretariat for the Modernisation of Public Administration Portugal, INFOCID, showed how ICT can assist the needs of public administration of the Portuguese government. Improved public sector performance relies on the use of virtual services at lower costs. The Portuguese government started to provide multi-media and multi-bank kiosks since 1991. INFOCID, its interdepartmental information system for citizens includes PA services, information, databases and a single Internet portal. The new information concept is adopted to make it simple for citizens to use this channel of information and to provide up to date content based on customer feedback to a permanent forum. The electronic services enable citizens to obtain administrative certificates paid by debit or credit cards. Other services will follow, including value added customer self-service and two-way information flow.
See: http://www.infocid.gov.pt

The panel shared in common the rising customer expectations and also the increasing awareness among users of what ICT can deliver for them, tailor-made and on specific request. The future may well lie in more demand driven services, such as customer self-service and two-way information flow for service providers, at least for those who deal with lay end-users. Most importantly, people have to come first, especially as regards security, ethics and their quality of life.

3.3 Knowledge Management: a strategic tool of the Information Society

Michael Stankosky, Professor of Knowledge Management at George Washington University, USA, the moderator of this panel, pointed out that the knowledge industry is based on human resources and not the physical or financial assets of companies. People in the knowledge business command among the highest earned incomes. Their intellectual capacity characterises the management of the company. They keep and leverage it to improve the organisation professionally. Knowledge management strategies are adopted by many companies quoted in Fortune 500 and 50 top US companies such as GE are measured by their knowledge assets and capacity.

Dr.William Halal, Professor of Management in the School of Business and Public Management, also at the George Washington University discussed knowledge creation. Developing communality of practice was the past interest of a single discipline. For example, the World Bank did not have a communality of practice prior to a project but used best knowledge as input. It was a matter of solving the problem first and giving the loan afterwards. It is not clear whether that has improved the rate of success and the procedure is difficult to monitor.

Intranet storage can become a knowledge repository. At Anderson Consult, for example, the customers are the best coordinators of knowledge throughout the company. This method excludes knowledge from the firm's staff, although the motivating force of information and knowledge is a critical factor of driving economic growth. Information systems serve that purpose. Their aim is to deliver and enhance understanding which leads to progress.

A mechanistic paradigm claims that management is control. This is not realistic. According to this strategy, knowledge exists separately in each individual's mind.

Different practices are at work and may require new forms.

- Communality of practice is corporate led. It is more or less directed and sponsored by the professions themselves. Workings of 80% cooperation intranets fail because they are not used. They do not reflect needs.

- User led knowledge organisation is practiced by progressive firms. IBM is organised from the bottom up, so is Hewlett Packard.

- Knowledge exclusion is the method of professional evaluation. Knowledge is power, therefore people keep it to themselves. Time pressure presents a problem. Realistic foundation is shared contractually. All parties benefit. For example BP management provides volunteers who help others with problems. There is reciprocity and peer network support. This causes a problem for accountancy though. It also contravenes scientific rules whereby knowledge is financially excluded in the Internet system and can only be accessed by micro-payment.

- Empowering people is credible alternative, but changes are marginal. The system remains hierarchical. Performance of teams creates a percentage of values which is not known. Alternative to hierarchy is a situation which leads to the transformation of the organisational structure. Management is internal to the enterprise with a strong economic component. This simulates the condition of an external enterprise and offers more freedom. It is a successful model in both the private and public sector. Stakeholders are not really involved in the policy making process which, however, involves their knowledge. Organisational life is a true self-organising system modified by employees. This is the closest model to a creative knowledge organisation.

Charles Despres, Professor at College of Higher Commercial Education and **Danièle Chauvel, Research Director ecKM, Marseille – Provence** presented their empirical work at the European Center for Knowledge Management in Marseille on how to define and detect knowledge in knowledge management. Basing them on their conceptual model, they undertook a large number of interviews and observations to come up with a sort of landscape which aimed to capture psychological cognitive processes and perceptions. They were representing the definition of tacit knowledge against an explicit background.

They built a model combining various processes and practices which require knowledge management (eg. conferencing, business productivity, strategic services for business and their relation to companies, industries and markets, behavioural sciences and soft technologies). This iterative process based on soft technology was expected to reach an understanding of knowledge management while also evolving their research technique into a new discipline. This genuine content and form evolution examined various activities such as map scanning, data capturing and creation, packaging and storing, sharing and applying, and innovation and transformation generally, at individual, group and organisation level to find out which tacit and explicit actions are taken. They focussed on different types of structuring devices dealing with time, types, social space, as well as context, dynamics of transformation, the media and knowledge culture. Operating across these various structuring devices should increase communality and thus facilitate the communication of abstract concepts through frequent use and agreements on definitions.

They also undertook an extensive survey in three languages of knowledge management activities in business schools and at global corporate consultancies to test their hypothesis of conceptual consensus building. They used six criteria: phenomena, action, level, knowledge, technology and outcomes to study the relation between enablers and barriers, practices and strategies, individuals and cultures, verification and valorisation, systems and soft systems, costs and benefits. In a “sense making model” they cross referenced knowledge management applications with organisational structures and they tried to identify what drivers are needed to move from the current stage of knowledge management to a desired stage.

Their conclusions of their second phase of research were that knowledge management was maturing as a discipline, but that they needed to emphasise soft technologies and attribute more attention to context. In order to achieve concrete results it was also necessary to move beyond intuition and to struggle with knowledge itself. This is how they progressed towards another view. Still very much in its initial stages, this original research was thought provoking and may lead to promising and unexpected discoveries.
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Prof. Trevor Page, Pro-Vice Chancellor of Newcastle University talked about their projects which focus on managing the usage of information technology selectively. Evaluation was a promising candidate and they focussed their research on what e-science was able to contribute to the knowledge economy. They also examined the legal and social implications of how information technology was changing lifestyles. Their data management projects aim to convert data into information and knowledge and ultimately into wisdom. The use of large research and corporate datasets is a significant area of development in relation to

advances in technology in a number of fields. Newcastle University applies it to health-, bio- and neuro-informatics, as well as hydro- and geo informatics and statistics. They are cooperating with private corporations and commercial application. This added value path has already been implemented in the UK health market and has become a crucial factor of wealth creation.

Information systems are taking over cooperative memory. However, cooperative knowledge is confined to a collection of memories of faithful members of a given network.

An example is e-technology application to building regulations. It provides added value to decisions and memory support. However, it requires good academic underpinning as reliability is poor, considering that between one in five and one in ten decisions turn out to be deficient. Newcastle engineering research provides the necessary excellence. Its computing science department is developing advanced systems again in close cooperation with the private sector to increase dependability and reliability of software and systems.

A new technology institute at UNN generates new research by combining blue sky, academic, applied and commercial research. This involves the whole regional network of universities, techno- and science-parks in the North East of England linked up by a regional e-grid and by complementing each other's computing expertise they enhance their own specific identity. In effect they constitute a synthetic university which amounts to local virtual reality. Their contribution to the development of the knowledge economy consists of combining research, continuous professional development with projects for business which, in turn have global diffusion effects. In Newcastle, this tripartite cooperation is expressed in physical terms as the academic campus is adjacent to the business park which generates commissioning streaming effects with dissemination into internal and external markets.
See : www.newcastle.ac.uk

4. E-SOCIETY: APPLICATIONS FOR CITIZENS

This part of the Global Forum was looking at innovative applications, best practices and usages in different sectors. It dealt with a large number of aspects, such as ambient intelligence, the changing role of administrations, e-learning, entertainment, and sectors such as the environment, health, transport and tourism. Links to knowledge management and persons with special needs were also established.

On the institutional side, the Global Forum investigated smart strategies for intelligent cities, regions and public authorities, as well as examples of dynamic local strategies world wide. On the technical side, applications of seamless services via channels and portals, digital TV, government e-gateways and other ICT innovations were illustrated. Finally, the resilient digital divide had to be addressed again in conjunction with social and societal divides.

Gérald Santucci, Head of unit, DG INFSO at the European Commission chaired the session and the panels and drew up conclusions.

Stephan Brunessaux, Deputy director of ITC Management, Matra Systems & Information France talked about Cybervote and **Dr.Steve Marsh**, **Assistant director of the Office of the e-Envoy, UK Cabinet Office**, and **Ari Schwartz, Associate Director from the US Center for Democracy and Technology** gave other introductory talks to these complex themes.

Gerard Santucci notes that although new technologies are being applied to almost anything, citizens have not yet become used to ICT broadband technology. In its previous research programmes the European Commission promoted, inter alia, distance learning through the Delta programme and travel safety for drivers. This was a successful new way to link technology with society in a context of cooperation instead of competition. These programmes formed part of the completion of the single European market but more needs to be done in the fields of telecommunication, distance telematics, and ITCs applied to education, healthcare, transportation, etc.

It was the first time that users were actively included, as these programmes put human beings into their centre. Conversely to abstract research of ICT application, technological ICT development was based on user needs and wants. The 4th framework programme implementing the Maastricht Treaty added new fields such as the police, and the Amsterdam Treaty started to speak about the Information Society as a synthetic response to previous work on the information highway.

Essentially, technology should be there solely to benefit human beings. Data telematics evolved into product switching and now multimedia telematics. User needs are differentiated and vary between urban, regional or rural access, as well as school and home and differential user needs are taking shape. Humanisation of technology development has acquired new importance and is apparent in the 1998-2002 research program which relies on the concept of participation and inclusion in the performance of e-Europe. ICT is not only telematics and includes ambient intelligence. Ubiquitous technology will penetrate into all aspect of life, even inside human beings for example in the form of implants within ten 10 years. The concept of user is evolving and diversifying. Urbanisation is related to population while e-global health is devised for clients and customers. The notion of personal assistance is generating a new interface with technology.

See: http://europa.eu.int/eeurope
www.cordis.lu/ist

Stephan Brunesseaux of **Matra** spoke about the "Cybervote project". Supported by the European Commission, a consortium of ICT industries (Matra, Nokia, BT), 3 city users (the city of Bremen, Germany, the city of Issy-les-Moulineaux, France and Kista, city of Stockholm, Sweden) and 2 universities (Louvain and Eindhoven) got together to facilitate Internet voting by using mobile phones, palm computers or the Internet. A literature survey shows that many reports were sent to the Commission and they are being made available online. A discussion forum has been launched and frequently asked questions were also collated. Internet voting presents a lot of legal questions though, especially concerning freedom and secrecy of the vote as well as upholding the one person one vote principle. Points of views of citizens, the

legal profession, authorities which practice the Cybervote and the technical providers have to be reconciled.

The Cybervote will be experimented in the 3 cities in the 4th quarter of 2002.
Security is one of the target of the project which is not completely solved. More work is under way on cryptographic protocols and security techniques, Internet technologies and hardware platforms. The first public demonstration of the "Cybervote project" which includes voting by mobile phone, pocket computer and PC was presented at the IST in Dusseldorf the 3/4/5 of December 2001, the first exhibition devoted to this issue. Proposed cybervoting for European elections requires both the active participation of the local population and a multi-cultural team capable of developing a vision of civic requirements applicable in the different European member states.
Contact: contact@eucybervote.org

Steve Marsh spoke for the UK Office of the e-Envoy which is in charge of getting the UK online and deliver universal access by 2005 including to all government services. This government strategy is driven by the Prime Minister personally. It should provide the building blocks of electronic service delivery in terms of access, components, and interoperability. Of importance are also the roles and responsibilities for delivery. Online provision applies to any type of life episode and citizens can experiment with electronic government responses on its website.

In order to bridge the digital divide the UK government assists in improving access in the home, at work and in the community. It incorporates ICT skills into the education system and life long learning. It works with industry to ensure a safe and secure environment which will create trust in the Internet. It also aims at driving up the amount and quality of social content. Among the services offered are tax paying, benefit collection, access to patient records, pension applications and e-democracy. The Electronic Communications Act 2000 which defines legal admissibility of electronic signature and industry self-regulation for TSPs should accelerate online usage take up. Registration, privacy, cost mobility of channels, ease of use, commercial models and liability still constitute barriers to e-signature use. However, the government is going ahead with the use of smart cards as it believes that secure services have to be available to all.
See: www.e-envoy.gov.uk

Ari Schwartz of the Center for Democracy and Technology (CDT) explained how tools should be built for citizens in an e-society. In his view, the Internet offers new opportunities for democratic values and human rights. It is necessary for NGOs, industry and governments to cooperate in order to understand this medium and use its uniqueness to its fullest. Global, decentralised, open, abundant, interactive, user controlled and infrastructure dependent, the Internet is a formidable support for unhindered communication worldwide. This goes also for e-government which can publish for broader access, interact with all its citizens and broaden the availability of its services.

In this process, governments will achieve a wider reach, better accountability, efficiency and cost savings, as well as effective citizen participation. Conversely, the use of new communications media for e-

democracy enables individuals and organisations to engage better in advocacy and civil society. This provides greater openness and accountability for traditional governance structures. Most importantly, it makes it easier to protect civil liberties, civil rights and human rights in the overall pursuit to achieve better democracy. Ultimately, e-governance and e-democracy should work hand in hand. NGOs can act as agents in assisting individuals to interact with traditional power structures.

Case studies were citizen consultation during the youth summit of a Scottish university, political organisation in Zimbabwe, and boycott on the Internet in the Czech Republic to protest against telecom monopoly, the use of the Internet by the independent Belgrade radio when its signals were blocked, and parliaments online.

The nature of the Internet enables everyone to be his/her own publisher to enhance democratic values in the digital age. However, this presents new challenges despite better opportunities for global cooperation and joining forces between different types of institutions. Issues still to be resolved or developed are e-literacy, accessibility, privacy, security, transparency, interoperability, records management, and also permanent availability and preservation, education and marketing, public private competition or collaboration, inter-governmentalism, workforce issues and cost structures.

CDT is developing an e-government toolkit for developing countries, helping the World Bank to focus on accountability issues. It also has called for best practices and case studies which will be available online.
See: www.cdt.org/egov / www.infodev.org

4.1 Innovative Applications: Best Practices and Usages

Under the moderation of **Tom Cosh**, **Head of Economic Development, Newcastle City Council** a number of industry representatives discussed best practices: **Dave Denison, Channel Marketing Manager Government of ICL**, **Kevin Curran, Director of Next Level Systems ltd**, **Brian McCandless, e-government Director of Oracle**. Similarly, a representative of a local authority **Antoinette Moussalli, Head of International Affairs, London Borough of Lewisham**, and members of research establishments such as **Alfredo Ronchi from Polytechnic of Milan** and **Ann Macintosh, Director of the International Teledemocracy Centre Napier University** gave their views on the evolution the information society.

In agreement with the ancient Chinese, **Dave Denison** postulated that those who have knowledge do not predict and those who predict do not have knowledge. Many statements made during the second half of the 20th century prove that. Both Bill Gates of Microsoft and Thomas Watson of IBM underestimated wildly the need of technological capacity. Respectively they believed that 640k was sufficient for a PC and 5 computers would cover the market worldwide. Ken Olson from DEC also thought that individuals did not need computers at home and like Julius Frontius in 10 AD, Charles Duell of the US patent office

deliberated in 1899 that everything that could be invented had been invented. However, predictions are used widely by professionals who are sometimes highly paid for it.

ICT firms do have to take shots at the future when exploiting technology. ICL focused on speed, availability, location and control method. Once the technology is in place, it is a matter of adapting it to needs. Ease of use is essential for entertainment applications, prices matter in the market place and young people want new things all the time. When lifestyles are unpredictable at work, at leisure, in the home and in the office and with people who lack deference, personal, efficient and fast customer service is essential. This also applies to public services and their broad range of suppliers. Their services need to be customer centred, personalised, targeted, accessible, available, and appropriately marketed. Citizens as customers dictate the pace, follow the commercial lead and learn to be pro-active. However, hidden technology gets much cleverer in this process.

Kevin Curran from TNL showed how regional electronic economy underwent holistic change management by bringing people and technology together. This software developer focused on the public sector (public administration and education). It created regional public-private partnerships which recognised the need of cultural change. REEP, the regional information society strategic framework was launched by the Prime Minister in 1999 to put the UK at the forefront of the information society. Holistic change meant developing both people and communities, providing information, education and training services, developing existing business and commerce and creating new knowledge based, high value businesses.
See: www.niaa.org.uk

Like other ICT industrialists, **Brian McCandless** from Oracle realised that for e-government to progress it needed to evolve from vision to reality. Already today many local governments have portals linked to multiple terminals and services. However, clerks have to work with disparate business applications and a proliferation of suppliers and partners, often on a self-service basis. The same is true for central government whose ERP applications link disparate access channels to disparate links to suppliers and OGDs. The target for the future is to separate self-service applications from business intelligence systems and ERP applications and link only the latter to OGDs, suppliers and service providers.

There are two recognised paths to e-government. One starts with improved back office efficiency, connects citizens and offers more service for less, the other connects citizens first, improves back office efficiency second and also manages to provide more service for less. For e-government service architecture citizens are linked to the central e-hub services which, in turn, are connected to the various government departments and agencies. Conversely, e-government applications architecture separates web portal for citizen services from government operations and the public servants portal. However, they all connect to the various government functions through the central e-hub services to the various databases, monitoring results and search engines.

Many issues remain unresolved though. There are considerations of how data should be handled and there is the problem of continuity of service while reducing costs. In the public sector there will always be a danger of big brother syndrome and thus data protection remains a delicate issue.
Contact: brian.mccandless@oracle.com

Antoinette Moussalli showed how local authorities could develop innovative applications. The multicultural nature of Lewisham in London, its uneven development and its overall high unemployment of 7% are challenges for ICT applications. Lewisham promotes e-democracy and provides a range of electronic services, including 15 tellytalk sites. Lewisham's interactive website improves citizen participation. It attributes special attention to young citizens whom it is linking up to other European cities. 12.000 people per week access the site for services, information and advice.

The Life Events Access Project aims to deliver joined up services targeted to the needs of the community. Areas covered are starting and leaving school, changing employment status, dealing with crime, starting a business, becoming a carer or disabled, having a baby, moving house, retirement and bereavement. The services are provided also in minority languages. Another project, AVANTI, set up Europeanwide, concerns the added value access to new technologies on the Internet. It constitutes an intelligent assistant, enabling automatic electronic access to services and information without the need for a password.
See: http://www.lewisham.gov.uk

Ann Macintosh of the International Teledemocracy Centre (ITC) was also focusing on young people. She had undertaken a number of experiments in e-democracy at Napier university in Edinburgh with BT Scotland. They aim to promote the application of ICT by governments and parliaments worldwide and to demonstrate how technology can contribute to more openness and accessibility. It was particularly important to engage young people in remote areas such as the Highlands where they simulated a youth vote. The election turnout was quite high and showed that the project was both fun and easy to handle. The participant schools had to lobby their constituents through various media and interactive Internet sites, including the youth voice which enabled the electorate to answer back, add their own ideas and make suggestions for change. The idea was to create a youth parliament with a black website which enables services to be delivered directly to the site.
See: www.teledemocracy.org

Alfredo Ronchi from Milan Polytechnic was dealing with the cultural aspects of expanding the global e-society. Cultural barriers exist everywhere. They are slowing down e-society progress worldwide and also in Europe despite the high level of education and e-literacy. Thus the promotion of the use of ICT for cultural activities, education, and cultural heritage is important also in Eastern Europe.

Based on the G7 recommendations of 1995, a number of pilot projects were set up for free to promote information sharing, events, projects education and courses. The project which gave 5 million media access to world culture was a milestone. The 1997 Global Forum reported on some of them. Feedback

took place every year on progress of projects on the cultural aspects of the world wide web, cultural counts, cultural heritage, hypermedia networks, information poverty and intellectual property rights. The group of participants is increasing and combats the digital divide due to cultural barriers which also engenders social divide instead of reciprocity.

These issues are debated at G8 and obtain the support of the World Bank, Unesco, and the European Commission. An ICT task force presented a media report to the G8 in Genova. It dealt with cultural individualism and new ICT sharing. CEBIT will present another progress report in Hanover in 2002. The Cassiopeia network has also been set up to bridge cultural gaps. The point is to be vigilant and prevent technological advances from adding to social exclusion.
See: www.mediconf.org

4.2 The Dimensions of the Digital Divide

The Digital Divide preoccupied a number of experts and practitioners who are working closely with social groups which are trying to use ICT to improve their conditions. **David Brown, Managing Director from In-Touch, UK** and **Neil Bravey, Head of Customer Services for East Riding Yorkshire** discussed rural issues, **Elin Wihlborg, Professor at Linköping University** and **Magnus Johansson, Acting Senior Lecturer at the Linköping University** wrote on experiences with broadband at community level, **Ana Lisa Boni, Telecities Manager** gave an overview of the activities of Telecities in this field, while **Helena Lindskog, CEO from HelDag AB, Sweeden** reflected on the social consequences of time rich and time poor people.

David Brown and **Neil Bravey** from In-touch Public Access Systems addressed social exclusion through kiosk technology. In agreement with many others from the user and producer side, they considered that implementing e-government is about access for everyone, meaningfulness to citizens, increased service availability and ease of use. However, an Internet only service is a barrier to meeting e-government targets. The Internet still presents obstacles. Its access is limited as it cannot be used by everyone. Complex navigation and poor responses are constraining services as well. Moreover, a typical public sector provider has its Internet site designed by ICT people and provides mainly information. Emphasis is on availability, not usability. Commercial content is also limited.

Thus the community service unit in a rural area of East Riding picked up the challenges and developed other applications. Its aim were to encourage use, provide effective cost savings and get the services to where they are wanted or needed. For that purpose, they decided to combine electronic service delivery with traditional face to face services. As it is a matter of taking the services to the people, especially in sparsely populated areas, they developed easy to use kiosks and placed them in the public realm. They were aware that customers wanted to be taken seriously, expected a friendly service at a single point of contact in a convenient location accessible through a choice of mediums. Their ambition was to develop a

true one stop shop with staff capable of answering any enquiry and delivering all services. Everything was connected by video link from 11 customer service centres operating genuine one stop shops. Satisfaction levels are very high, based on a tight feedback system which monitors the customer database, feedback and technological snags. As staff uses the same system they share all information and can respond to all enquiries.

The Citizen link project consists of face to face services using video conferencing without the need of computer literacy. It reaches out to those who are unable to make contact in any other way. On the supply side, services provide joined up government, connecting citizen advice bureaux with law centres, legal aid franchised solicitors, the council for voluntary services, the policy and the health service. This project is establishing 30 new facilities, introduces e-commerce and delivers a better service than ever before. Delivery will be seamless across the whole thousand square miles of East Riding. Thus scarcity of population, remoteness and peripherality need no longer be barriers.

Elin Wihlborg, Professor at Linköping University and **Magnus Johansson of Linkoping University** studied the digital divide from the supply side. Their paper dealt with community based broadband solutions in eight small municipalities in Sweden. Their understanding of broadband went beyond fibre optic cable and included satellite and radio technologies. The expansion of these e-communities encompassed technical infrastructure (outreach and bandwidth), services (HomeCom, e-democracy, health care etc), and content (public information, edutainment, etc). They examined which of these dimensions of digital expansions were having the greatest effect on reducing the digital divide.

They had to tackle this question in terms of a socio-technical system, examining what respective roles were attributable to the phases of appropriation, objectification, incorporation and conversion in the introduction of new technologies. They found that appropriation, i.e. broadband connections among households was limited due to high costs. There were two models of objectification of broadband: one was leaving the initiative to the commercial sector which privileges large users while the other remained municipality driven. Incorporation of broadband were supported by the municipal housing companies which included ITC into the infrastructure to satisfy everyday household activities. Conversion of broadband did not really take place yet, as broadband is still a solution looking for a problem to solve. Demand does not to be there.

According to their empirical findings in a wide range of types of municipalities, growth remained the most important criterion for the application of broadband technology, followed by public-private partnership and the fact that services were related to locally experienced problems. It was not clear yet whether technological, service and/or content expansion were decreasing or increasing the digital divide as it seemed to have both including and excluding effects. There was an interdependence between the three components of this expansion. Thus lack of service availability delayed broadband expansion and led to a "wait and see" situation adopted by most municipalities and all stakeholders to the detriment of the citizens. They found only few concrete examples of how innovative ICT provision was able to improve the quality of life in small and medium size municipalities.
See: www.tema.liu.es/tema-t/mits

Ana-Lisa Boni gave an overview of Telecities and their activities. An off-spring of Eurocities, Telecities is a network of cities for cities. It consists of city experts concerned with the implementation of telematics to conduct city business and deliver city services, backed by a political mandate. They also run a forum of good practice to air problems, share successes and seek informed solutions. This platform of exchange and dissemination of information is also a source of partners for projects and benefits from a lobbying structure which enables ICT staff to represent their cities at European institutions and the European parliament. Telecities also provide value added services to their members. They have set up a website with an online database. Four annual conference focus on topical issues. 120 cities are full members and some business members and observer members are also included.

Telecities runs a number of EU funded projects. They include exchange of skills under the Leonardo programme, e-content programmes, such as eCT (electronic calls for tenders), open digital administration and PACE, and an IST programme supporting e-commerce learning processes.

Telecities is represented at the Global Forum because cities are the locations where people actually live and work. They have a fundamental role to play in harnessing the potential of new technologies to fulfil the real need of citizens. For example, a Telecities conference in Antwerp dealt with European cities for digital inclusion through access to new technologies. Case studies were presented of large mixed urban areas with multi-cultural ageing populations. Deliberate actions were also taken against exclusion from social networks, as well as dealing with economic and political exclusion. This included engaging non involved groups and making it easier for all citizens to gain access to ICT provided public services. It implies the provision of ICT skills and knowledge training for all. However, despite the important role of ICT labour market reintegration policies are also needed to solve the problem of exclusion. Telecities can contribute through network added value.
Contact: telecities@eurocities.be
Also see: http://www.telecities.org

Helena Lindskog elaborated another aspect of the digital divide, namely the divide into the time-rich and the time-poor and the consequences of this divide for the e-society. If the e-society wants to produce services anytime, anywhere, anyway, it has to satisfy both the time-rich and the time-poor and address problems of time and money alike. Today, market segmentation is based on time and this may have to change in the future.

In the past there was spatial segregation. Domestic activities took place in the home, work was done at the workplace and education was provided at school. These spatial distinctions became blurred and at present all three activities take place in all three locations and elsewhere. The problem is that time is unevenly divided. The time-rich may have too much time and want to kill it, while for the time-poor time is the most scarce resource and they need to save it. Before most people had limited money and limited time. With increasing affluence those with money also managed to have time, but in the e- society those with money have little time and those with time have little money. The time rich are children, youngster, the retired and the unemployed, the time poor are the employed and parents with small children.

For the time poor there is no distinction between leisure and work. Increased supply and choices fill up all the time, they have difficulties to consume and need always be prepared for changes, learn new things and acquire new knowledge. They are conscious that they are responsible for their future. In social terms, they are also the trend-setters, they enjoy economic success, work more and in more exciting circumstances often with total engagement in their work. Work identity takes over and work related contacts are prioritised. Thus they end up burnt our. They are human capital without time.

Many among the time rich enjoy increased prosperity. They retire with a pension, expect a longer life and do not have to look after children. The time-rich constitute a larger group than ever before, however not all time-rich are also money rich. Time-richness has not really entered social morality. People are afraid of time richness and may believe that they should take care of time poor children. Often the time-rich are marginalised and feel unwanted. Is it necessary to pacify the time rich and provide them with entertainment instead of vodka or religion?

The division between time-rich and time-poor will be the most important criterion of market segmentation in the future. Together with other measurable criteria such as geographic and demographic factors time-rich and time-poor criteria can be a powerful way to approach the market. Eating, travelling, relaxing and shopping all depend on time-poverty and time-richness.
See: www.heldag.com

Concluding remarks

A lot has been discussed during these intense two days of the Global Forum.

There are parts to play for all the major stakeholders of the information society.

The different actors involved in the Information Society have been consistently present at the Global Fora and are developing a vision in common, still with some juvenile enthusiasm but also with increasing serenity and recognition of each others indispensable role in this adventure to create the foundations of the 21st century.

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The Global Forum 2002 will take place
on Thursday 17 and Friday 18 of October 2002 in Washington DC, USA,
at the George Washington University, Media & Public Affairs Building.

The program will be soon available on the ITEMS International website.