

GLOBAL
FORUM
2004
Shaping the Future



**THE BROAD
CONVERGENCE**

Report

Promoting Services & Applications
for Businesses & Communities
in a Knowledge Based Economy



Malmö, Sweden

Town Hall

4 & 5 November 2004

Organized by



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City of Malmö

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ACKNOWLEDGEMENTS

I am pleased to make these proceedings available and to have the occasion to address a few words of thanks.

262 delegates from 23 countries attended the Global Forum 2004 which took place on 4 & 5 November in Malmö's beautiful town hall, close by the impressive Øresund bridge, connecting Sweden and Denmark and a sign that Europe is growing together more and more. For the thirteenth time, the Global Forum assembled governmental representatives, the private sector, users representatives, and the academia to discuss the challenges of our evolving Knowledge Society – this year under the main topic of “The Broad Convergence”. The forum yielded many positive results and brought up new ideas and solutions for businesses and communities. Once again, the Global Forum successfully promoted co-operation and networking between the participants - proving that “13” is definitely not an unlucky number.

Organizing an event like the Global Forum requires an enormous commitment of the people involved in its preparation and I would like to take the occasion to express my appreciation for the excellent work done by the team of the City of Malmö. They, just as the Foundation Sophia-Antipolis and ITEMS International, have given their best and did an outstanding job on the planning and execution of the Global Forum.

The Global Forum 2004 has been organized with special support from a number of sources recognizing the importance of such an event. Without their help, this conference would not have been possible and I would like to express my sincere thanks to the main sponsors and co-operating institutions of the Global Forum 2004, which are, besides ITEMS International, the Foundation Sophia-Antipolis and the City of Malmö,

Afilias, CNES, Copenhagen Capacity, EADS, Ebay, ETSI, France Telecom, IBM, Kodak, Microsoft, Novo Nordisk, One NorthEast, øresund^{it}, the Øresund IT Academy, Position Skåne, the Public Interest Registry, SBC, Sony Ericsson, Sydcraft, Verizon, voXonic, and XandM@il

as well as the supporting sponsors, which are

the European Commission, ANUIT, AUSY, the Forum for European ePublic Services, the French Embassy in Washington, IKED, Information Futures, the City of Issy-les-Moulineaux, the Newcastle City Council, NTCA, the Politech Institute, the Politecnico di Milano, the Public Technology Institute, Steptoe & Johnson, TeleCities, and Télémédecine Catel.

Finally, special thanks to the delegates, including moderators, panellists, rapporteurs, and participants - for making it all happen. Their valuable expertise, input and perspectives ensured that the Global Forum provided once again state-of-the-art knowledge in areas critical for the promotion of services and applications for businesses and communities in a knowledge based economy.

I am counting on all of you as global partners and friends to carry on the vision of the Global Forum to shape the future together and look forward to seeing you next year at the Global Forum 2005.

Sylviane Torpokoff
President of the Global Forum

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PROGRAMME

... 4 November 2004

WELCOME ADDRESSES

Ilmar Reepalu, Mayor of the City of Malmö, Sweden
Senator Pierre Laffitte, President of the French Foundation Sophia-Antipolis, Alpes-Maritimes, France
Sylviane Toporkoff, President of the Global Forum, ITEMS International, France

DAY 1 • OPENING SESSION

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Chair:

Sylviane Toporkoff, President, Global Forum & Partner, ITEMS International, France

Keynote Speakers:

Peter Höjerback, CEO, Oresund IT Academy, Sweden-Denmark
The Øresund IT Project and the Øresund Region

Keiichiro Seki, Director, Economic Affairs Division, Ministry of Internal Affairs and Communications, Japan
The Network Paradigm Shift

Krzysztof Heller, Former Minister of Infrastructure, Poland
Current Status and Future Development of the Information Society in Poland

Jørgen Abild Andersen, Director General, National IT and Telecom Agency, Denmark
Supply-Push / Demand-Pull: The Danish Approach

Nasr Hajji, Congressman - Former Secretary of State, Posts, Telecommunications & Information Technologies, Morocco
The Potential of Emerging Countries

DAY 1 • SESSION 1 • INFRASTRUCTURE MODELS IN EUROPE, NORTH AMERICA, ASIA & EMERGING MARKETS

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Chair: Brent Olson, Assistant Vice President, SBC Telecommunications, USA
IP and Broadband: Transforming the Communications Landscape

Moderator: Shigehiko Naoe, Professor, Office of the Faculty of Policy Studies, R&D Division, Chuo University, Japan
The Japanese Broadband Market

Speakers:

Kjell Arne Yttervik, Leader, Digital Media, EMEA Nordic Region, IBM
Broadband and New Services for the Public Sector

Patrik Fältström, Member, Swedish IT Policy and Strategy Group, Sweden
The Swedish Government's View on Infrastructure Trends

Bernard Mathieu, Head of Radio Communications Programmes, CNES (French Space Agency), France

The AGORA Initiative: Towards a Competitive Satellite "Triple Play" Broadband Services Offer for All and Everywhere

Len St-Aubin, Minister Councillor, Canadian Embassy in Berlin, Germany

Bridging the Digital Divide: The Canadian Experience

L. Marie Guillory, Vice President, Legal & Industry, NTCA (National Telecommunications Cooperative Association), USA

NTCA Members Role in the USA

Eva Frölich, Board Member, Public Interest Registry .ORG, Europe
Infrastructure for Domain Names

Dzintars Zarins, Executive Director, Latvian Association of Computer Technology (LDTA), Latvia

IT Development in Latvia: 1990 - 2004

**DAY 1 • SESSION 2 • MULTIMEDIA AND MULTI-CHANNEL APPLICATIONS:
SOFTWARE, CONTENT AND USABILITY**

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Chair & Moderator: **Gilles Polin**, Partner Accounts Manager, Government Enterprise and Partners Group, Microsoft EMEA, United Kingdom
Multimedia and Multi-Channel Applications: Software, Content & Usability - An Introduction

Speakers:

Hervé Rannou, President, ITEMS International, France

Triple Play: Economic Perspectives

Joakim Nelson, Director, Head of Business Strategy GSM/UMTS, Sony Ericsson, Sweden

Future Mobile Services

Fred Deutsch, Founder, Voxonic Inc., USA

Freedom of Speech in Every Language. Hearing is Believing.

Ky-Ming Jen, General Manager, XandM@il, France

Global Offering in Voice, Data and Video Services on Fixed and Mobile Networks

Carolyn Nguyen, Director, Technology and Strategy, Avaya EMEA, United Kingdom
Converged Communications Services for the Mobile Enterprise - Anytime, Anywhere, Anyhow

Ranjit Makkuni, President, Sacred World Foundation, India

Innovation through Culturally Conscious Technology

Paul Cheshire, Consulting Director, Welfare Sector, Atos Origin Consulting

Ensuring Social Inclusion when Delivering eServices for Welfare

Alfredo Ronchi, Professor of Multimedia Publishing, EC MEDICI Framework Secretariat, Politecnico di Milano, Italy

Long-term Preservation of Digital Content

Terje Nypan, Senior Advisor, Norwegian Directorate for Cultural Heritage, Norway

The Economic Potential of Cultural Heritage for the ICT Industry

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ON REGULATORY TRENDS**

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Chair: Michel Huet, Senior Vice President - International Public Affairs, France Telecom, France
Dealing with Convergence - Tension among Objectives

Moderator: Andrew Lipman, Partner & Vice President, Swidler Berlin Shereff Friedman, LLP, USA

Speakers:

Theresa Swinehart, General Manager, Global Partnerships, ICANN
Internet Governance: Maintaining an Effective Model for Technical Coordination of the Global Internet

François Varloot, Economy & Perspective, Telecommunications Regulatory Authority (ART), France
VoIP and Regulatory Questions

Christina Speck, Office of International Affairs of the US Department of Commerce - National Telecommunications and Information Administration (NTIA), USA
Broadband: A US and OECD View

Jacques Pomonti, President, Legal & Economic Committee, General Council for Information Technologies, Ministry of Economy, Finance and Industry, France
Effects of Convergence on the Responsibilities and Nature of the Regulatory Institutions

Jean-François Tournu, ICT Technical Director, Conseil Supérieur Audiovisuel (CSA), France
Standards Gum Up the Launch of Digital Terrestrial Television

Jean-François Soupizet, Head of Unit, International Relations, DG Information Society, European Commission
Regulatory Issues and the Digital Divide

Xiaohua (Sarah) Zhao, Partner, Holland & Knight LLP, USA
China RFID Standards

Olof Nordling, President, Brussels Office, Telia Sonera, Belgium
Market Convergence and Regulatory Divergence

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Chair: Peter Van Roste, European Policy Director, eBay International, Europe
Users' Security and Privacy Needs - A Case Study

Moderator: Sergio Antocicco, President, Italian Telecommunications Users Association (ANUIT), Italy

Speakers:

Tracey Pitt, Chief Executive, ETR²A (European Telecommunications Resilience and Recovery Association), United Kingdom

The Importance of Information Sharing in the Protection of Critical Information Infrastructure

Arvo Ott, Head of Department, State Information Systems, Ministry of Economic Affairs and Communications, Estonia

Trust and e-Security in the Framework of National ICT Architecture

Patricia Cooper, Chief Regional & Industry Analysis Branch, Federal Communications Commission (FCC), USA

Security Policy: The U.S. Experience

Jens Sörvik, Project Officer at the International Organisation for Knowledge Economy and Enterprise Development (IKED), Sweden

The Global Trust Center

Neil Edwards, Managing Partner, Xian Group, USA

Will Traditional Security Companies Survive the Wired to Wireless Convergence Revolution?

Maury D. Shenk, Managing Partner, London Office, Steptoe & Johnson, United Kingdom

Liability Risks for Security Breaches

... 5 November 2004

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Chair: Hubert Fabre, Secretary-General, Politech Institute, France

Moderator: Sylviane Toporkoff, President of the Global, France

Keynote Speakers:

Patrick De Smedt, Chairman, Microsoft EMEA, Belgium

Enabling the Knowledge Society : Partnership and Innovation

Jørgen Friis, Deputy Director General, European Telecommunications Standards Institute (ETSI), France

From Innovation to Market Deployment: Where (and How) Standardization Fits?

Kathryn Brown, Senior Vice President, Public Policy Development and Corporate Social Responsibility, Verizon Communications, USA

Deploying Broadband: the Infrastructure of Innovation

John K. Barker, Assistant Deputy Commissioner of Competition, Industry Canada
Technology, Deregulation and Globalization: Impact of Broad Convergence on Competition and Citizens

John Gage, Vice President & Chief Researcher, SUN Microsystems, USA

Identity, Security, and Governance: ICT Innovations and Applications

Hisham El Sherif, Chairman & CEO, IT Ventures, Egypt

The Convergence of the Global Information and Knowledge Society: Progress and Challenges

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Chair & Moderator: Senator Pierre Laffitte, President of the Sophia-Antipolis Foundation, France

Speakers:

Jean-Louis Lacombe, Vice President, Technology and Innovation, Industrial Research and Technology, EADS, France

Technology and Innovation in EADS: New Challenges

Jacques Bus, Head of Unit, ICT for Trust and Security, European Commission
Future Security Research in the EU

Patrick Auroy, Director Force Systems and Trend Analysis, French Armament Agency, France

From R&D for Defence to R&D for Security and Defence

Mozelle W. Thompson, Commissioner, Federal Trade Commission, USA
Job Creation and Innovation Outsourcing. Fresh Look on Broadband Deployment and the Future of Competition

Edith Cresson, Former Prime Minister of France & Former European Commissioner for Research, France

European Research Issues

Anastase Adonis, Telecom Director, Objective Networks, France
SME's and Emerging Markets: The Crossroad of R&D and ICTs

Thomas Andersson, President of the Board, IKED & President, Jönköping University, Sweden

Raising the Returns from R&D

Tomasz Rawinski, Business Development Specialist, Electrotechnical Institute, Poland

A New Secure Internet: An Important ICT Research and Development Priority

Vincent Vergonjeanne, Development Engineer, 3IE - Institut d'Innovation Informatique pour l'Entreprise, France

SmartCenter.Net - A Software Solution for the Communicative Home

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Chair: Giorgio Prister, Sales, Local Government & Health, IBM EMEA, Italy
On Demand: The Next Evolution of On Line Communities

Moderator: Jean-Pierre Chamoux, Professor, Université Paris V – René Descartes, France.

Speakers:

Gérald Santucci, Head of Unit, ICT for Business/DG Information Society, European Commission, Brussels

Digital Business Ecosystems: A New Frontier for RTD in the Knowledge Based Economy

- François Bélorgey**, Secretary General, Strategic Board for Information Technologies, Prime Minister, France
Industry Regulated Public Governance
- Soren Skovlund**, Senior Advisor & DAWN Manager, Novo Nordisk, Denmark
A Case Study of Stakeholder Innovation: Diabetes Attitudes Wishes and Needs (DAWN)
- Andrew Robinson**, Joint Coordinator, eJustice Project, United Kingdom
The eJustice Project: Acceptable Technologies for the Accepted Freedoms on Europe
- Per Torphammar**, Technical Director, SkåNet, Sweden
A Powerful Business-Driven Public-Supported Initiative in Infrastructure in the Malmö Region
- Claes O. Olsson**, IT Director, City of Malmö, Sweden
From Ships to Chips - Transforming Public Services to the e-Community
- Gene Kimmelman**, Senior Director for Public Policy, Consumer Union, USA
Consolidation of Telecom and Media Companies: A Problem for Democracy
- Debra Amidon**, Founder & CEO, Entovation International, USA
In the Knowledge Zone: Knowledge Innovation Principles, Practices and Policies
- Emanuela Prandelli**, Assistant Professor of Management, Bocconi University & SDA Bocconi School of Management, Italy
Communities of Creation : Managing Distributed and Collaborative Innovation
- Helena Lindskog**, CEO, Heldag AB, Sweden
IT Outsourcing in the Public Sector
- Kimmo Aulake**, Advisor, Council of Europe & Special Advisor, International Affairs, Ministry of Education and Culture, Finland
Council of Europe Recommendations on e-Governance
- Denis Ettighoffer**, CEO, Eurotechnopolis Institute, France
Driving Role of the Networks of the Economic - e.Fertilisation
- Daniel van Lerberghe**, President & Executive Director, Politech Institute, Belgium
An e-Strategy for Political and Community Leaders

**DAY 2 • SESSION 7 • LOCAL & REGIONAL AUTHORITIES:
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Chair: Christopher Varian, Director, Public Affairs Europe, Kodak Health Imaging, United Kingdom
The Transition from Island healthcare Information Systems to Integrated Care Record Systems

Moderator: Miriam Sapiro, President, Summit Strategies International, USA

Speakers:

- Bent Christensen**, President, Lund University Hospital & Former CEO, Medicon Valley Academy, Sweden
The Hospital of Tomorrow
- Ulf Persson**, Sales Manager Healthcare, Atos Origin, Sweden & **Patrice Cristofini**, Healthcare Director, Atos Origin, France
Atos Origin Global Healthcare Strategy – The Mona Lisa Prototype

Laura Aho, CEO, Access International Consulting, Finland

Case eTampere: Turning Services into eServices Through a Local Smart Card Scheme

Rosa Bruno-Jofré, Professor and Dean of Education, Queen's University, Canada &

Frank Huntley, President, Kingston Software Factory, Canada

Exploring Our World – A Journey through Space: The Teaching of History through the Virtual Globe

Patrick Dupont, B to B Development Manager, Ingenico, France

The Daily Life e-Card

Mary Reid, Councillor, Royal Borough of Kingston upon Thames & Chair of the Project Board,, United Kingdom

The National Project for Local eDemocracy, England

Kerstin Wiss Holmdahl, Legal Advisor, Swedish Association of Local Authorities, Sweden

e-Invoices: Cooperation in Sweden for a Standard

Baudouin de Sonis, Executive Director, e-Forum Association, Belgium

eGovernment Learning Journeys: Knowledge Management in Action

Jeannette Viale, Vice President, TeleCities & Senior Advisor for the Board of Directors, City of Naestved, Denmark

TeleCities – A Framework for the Knowledge Based Society

David Wood, Councillor, Newcastle City Council, United Kingdom

Smart Card Identity Management in the North East of England

Tomaz Stebe, Mayor of Municipality Menges & Vice President, Slovenian Association of Municipalities, Slovenia

European Information Infrastructure (EII) – From a Local Authorities European Wide Perspective

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Councillor Kent Andersson, Vice Mayor, City of Malmö, Sweden

Senator Pierre Laffitte, President Sophia Antipolis Foundation, France

Sylviane Toporkoff, President, Global Forum & Associate Partner, ITEMS International, France

Sébastien Lévy, Vice President, Global Forum & Associate Partner, ITEMS International, France

ABOUT THE GLOBAL FORUM

The “Global Forum on Shaping the Future” is an annual, independent international event dedicated to business and policy issues affecting the successful evolution of the Information Society. As a high-profile international think tank, bringing together senior government officials, policymakers and industry leaders from Europe, North America, the Pacific Rim and Africa, the academia, and the civil society – both from advanced and developing economies, its main purpose is to promote interaction and dialogue between the different stakeholders, to give impulses for the formulation of common visions, and to pool knowledge, expertise, research, policy analysis and networking capability.

The “Global Forum on Shaping the Future” is a not-for-profit initiative of ITEMS International and the Foundation Sophia-Antipolis. It is sponsored by organizations from all over the world, interested in sharing and influencing global IT-agendas, and enabling business and government leaders from all sectors of the ICT communities to meet and work with suppliers and service providers.

●●● THE GLOBAL ROADMAP

2004 The Broad Convergence – Malmö, Sweden

- 2003 Connecting Businesses & Communities – Rome, Italy
- 2002 The Promise of Broadband Services – Washington DC, USA
- 2001 Expanding the Global e-Society – Newcastle, United Kingdom
- 2000 Towards a Global e-Society – Sophia-Antipolis, France
- 1999 New Satellite and Terrestrial Applications – Sophia-Antipolis, France
- 1998 Networked communities – French Senate, Paris, France
- 1997 Smart Communities Forum – Economic Development in a Global Information Society – Sophia-Antipolis, France / Rome, Italy
- 1996 Smart Communities Forum - U.S. Tour of cities and regions – New York / Washington / San Francisco / Silicon Valley, USA
- 1995 The Second Europe / Japan Forum on Communications – Kyoto, Japan
- 1994 Europe / Japan Forum on Cooperation and Competition in Communications – Paris, France
- 1993 Europe / United States Meetings on Cooperation and Competition in the Field of Communications – Rome, Italy
- 1992 Europe / United States Meetings on Cooperation and Competition in Telecommunications – Washington / New York, USA

THINK TANK SYNTHESIS REPORT

The Global Forum 2004 took place on 4 & 5 November in the historical town hall of the City of Malmö in Sweden. During these two days more than 260 high-level representatives from national and local governments, governmental organisations, the European Commission, ICT-industries, regulators, user groups, and the academia participated in the lively discussions and the exchange of views about the main topic of this year's Global Forum: The Broad Convergence.

The Forum was organised in 2 plenary and 7 panel sessions. With the exception of the panel session 5, two panel sessions always ran in parallel.

The following synthesis report highlights the key issues of each presentation and summarizes the discussions that took place during the panel sessions. All slides (PowerPoint presentations), speaker profiles, and other documentation are available on the website of ITEMS International www.items-int.com, as well as on the web sites of the Foundation of Sophia-Antipolis www.sophia-antipolis.org and the City of Malmö www.malmo.se. Do not hesitate to contact ITEMS International to get in touch with one of the speakers.

The Global Forum's report is structured according to the actual sequence of presentations during the 2 conference days. The abstracts of the presentations made during the Global Forum 2004 are listed in chronological order corresponding to their succession in the final conference programme, as listed in the beginning of the present document.

... DAY ONE

Ilmar Reepalu, Mayor of the City of Malmö, Sweden, welcomed the attendees and briefly presented Malmö and its surrounding Øresund region. Malmö has passed through major changes during the last 10 years: 40% of the 270,000 inhabitants are immigrants – a fact representing at the same time a potential of growth and a potential of social-economic problems. The industrial employment decreased dramatically, the number of people relying on social help increased correspondingly. To overcome the pessimistic mood of the population and investors, a campaign to renew the city and to create a positive attitude for the future has been launched: Malmö should become a knowledge based city, co-operation between Copenhagen and Malmö should be intensified, Malmö should take advantage of its integration in the EU, and a university should be established. Today, the Øresund-bridge physically links Sweden and Denmark, Malmö disposes of a large pool of well-trained workforce, profits from the many students in the region, and is economically and technologically a highly attractive region. Scientific platforms, closely linking public and private interests, have been created in the Øresund region – among those the Medicin-Valley Academy, based on pharmaceuticals and biotech, IT-Øresund, covering ICT, Øresund Environment, and the Øresund Food-Network. The region intends to create Centres of Excellence and continues to build further scientific platforms. Moreover, the Øresund region has a very strong IT-sector: The sector employs about 100,000 people within 10,000 firms and has a turnover of about 25.4 billion €.

The Mayor of Malmö thanked the organizers of the Global Forum for their decision to hold this conference in Malmö, which definitely represents the adequate frame for such an event. The conference will provide many opportunities for the participants to learn and to share experience in a broad spectrum of areas and between different countries. Mr Reepalu expressed his hope, that all this knowledge and experience will become beneficial for the users as quickly as possible - whether they are ordinary citizens or professionals all over the world. With this concluding remarks the Mayor of Malmö welcomed once again the participants in Malmö and to the Global Forum 2004.

Senator Pierre Laffitte, President and Founder of the French Foundation Sophia-Antipolis, welcomed the participants of this year's Global Forum. The Global Forum 2004 represents the successful continuation of the work started by the Foundation Sophia-Antipolis and ITEMS International several years ago with the objective to promote innovation and networking in order to exploit positive leading trends in the area of IT. Some years ago in Lisbon, the idea was born to transform Europe into the most dynamic knowledge based economy - today this idea has to be put into practice, otherwise Europe will fall far behind, particularly compared to India or the Asian countries. However, creating the specific will to foster innovation in Europe requires an effective lobby and the capacity to connect a great many of people from different backgrounds, such as economics, science and policy, as well as from different cultures. Many politicians are not yet aware of the importance of innovation and it seems that the emerging countries are much more awake to the possibilities innovation and IT may bring. Senator Laffitte appreciated the high number of participants coming from emerging countries and thanked Sylviane Torpokoff for her strong commitment and outstanding work in promoting opportunities for innovation and excellence.

Senator Lafitte has put lots of efforts in promoting R&D and innovation in Europe, among those an initiative on Enlarging & Leveraging Innovation Talents in Europe (ELITE), or the idea of floating a common European loan for R&D funding - an idea which already has been presented to the French Senate and which is currently discussed during a number of European workshops. Documentation on the activities initiated by Senator Lafitte in order to promote innovation is provided in Annex 2 of the present report.

Sylviane Torpokoff, President of the Global Forum, welcomed the participants and opened the 13th edition of the Global Forum. Year after year, the Global Forum succeeds in bringing together a fantastic mix of key actors from different IT-fields and cultures in order to discover different views and perspectives of the Information Society from around the world and helping each of us to build our own future. This year, 22 nationalities have been represented in Malmö.

Sylviane Toporkoff thanked the sponsors of the Global Forum for making this Think Tank possible. Even if these organizations are evolving in a world of competition, their support shows that they are fully aware of the importance of both formal and informal face to face discussions and the great opportunity the Forum offers to its participants to develop imaginative solutions in partnership and to create a global network based on friendly relations.

ITEMS International is very proud of the “Shaping the Future” approach which has been developed in many different fields, such as e-Democracy, e-Government and e-Education. The fact that the first official e-Voting experience is currently conducted in France represents at the same time an award for the lobbying that ITEMS International has done during the past four years towards the European Commission, industrials, local authorities and Ministries of the Interior.

A special thank you was given to all participants for being here and to the Governor, Bengt Holgersson, the Mayor of Malmö, Ilmar Reepalu, and his staff for their hospitality and hard work.

... OPENING SESSION

DAY 1 – MORNING – PLENARY SESSION

As the first speaker of the Opening Session, **Peter Höjerback, CEO of ØRESUND IT**, Sweden-Denmark, [www.oresundit.com/], one of the main sponsors of the Global Forum 2004, presented a successful initiative settled in an outstanding region:

The Øresund IT Project and the Øresund Region

The Øresund region, with its 3.5 million inhabitants, can be definitely considered a one of the most important European high-tech regions: Øresund disposes of a first class virtual and physical infrastructure, Internet and even Broadband access is available everywhere, and most of the citizens living in Øresund have a PC. There have been big reforms by the Government sponsoring home PCs to assure that everybody can afford one. A recent OECD study showed that both Sweden and Denmark are among the top ranked countries using ICT in schools. When looking at the Information Society Index (ISI) 2003, Sweden and Denmark are the most technologically advanced nations in the world. In addition, Sweden's and Denmark's business environment is among the most favourable to Internet-based commercial opportunities and companies in the region are very intensively using ICT.

Corresponding to the report "Europe in the Creative Age" published in 2004, Sweden and Denmark are among the five most creative nations in respect of the three "Ts" of economic growth: Talent, Technology, and Tolerance, which are considered as pre-requisite to make a region growing.

With 140,000 students and 10,000 researchers at 14 academic institutions and 6 large science parks, the Øresund region is one of the major European research and education hubs – the region is ranked as number 5 relating to scientific output in Europe.

The main areas of expertise, skills and key strength of the Øresund region can be found in wireless technologies, where Øresund is specialised in terminals, applications and design, as well as in the micro- and nano-technology sector. Furthermore, Øresund has a very strong medical cluster, the so-called "Medicon-Valley", and many companies have their core business in the borderline between biotechnologies and IT.

The following **Q&A** part referred to the question on how Sweden and Denmark managed to create this extremely co-operative environment between both states. As Peter Höjerback stated, the Øresund bridge represents an important new infrastructure in this context, but making the people of both countries meet, getting to know and trust each other in order to build a kind of social capital was one of the main challenges. Ilmar Reepalu, who is also the vice-chairman of the Øresund Committee, a transnational committee between Sweden and Denmark, emphasised the entrance to the EU as the most important factor for Sweden: The funding of the EU within its Interreg Programme allowed to enhance the co-operation between universities, companies and the political societies of both countries and to show concrete results. The bridge represented a kind of a catalyst for this development, showing to the people that both countries are connecting to each other.

Keiichiro Seki, Director of the Economic Affairs Division at the Ministry of Internal Affairs and Communications, Japan, outlined, with great foresight and vision, the

Network Paradigm Shift

Fixed and wireless networks in Japan are shifting rapidly from telephony to Broadband and from analogue telephone networks to digital IP networks. The shift from telephony to IP and from fixed to mobile has progressed to gradual network integration.

This trend, when combined with technologies for extremely small chips, sensors, and other parts, is expected to evolve into the Ubiquitous Network Society, which will make it possible to connect anytime, anywhere, with anything and by anyone, a grate goal that Japan is striving for. The term “ubiquitous network” is also used to refer to a network that supports our socioeconomic activities in every situation, without our being aware of it.

The field of networking is technology-driven. There is no demand in the market for that which does not exist. Demand only appears when something is supplied to the market. The idea that a wide range of different uses is born when broadband is provided is closer to the truth. Since, when broadband spreads, the Web, other types of content, e-learning, e-health, online games, and other uses of the network change in such a way that broadband becomes a prerequisite to these activities, this results in a cycle where even faster and higher capacity networks are necessary.

Therefore the government should not only establish rules, but has to be actively involved in the creation of a competitive environment in order to ensure that incumbents do not take anticompetitive practices and to encourage new operators to enter the market and to see that prices come down. Today, Japan is one of the leading countries in terms of Broadband, prices, and speed.

The competitive structure of the IP age will be completely different from the one of the telephone age. Even as IP networks have expanded, the services offered by Internet applications such as the Web, e-mail and others, have clearly been different from the real time voice services provided by telephony. The appearance and diffusion of VoIP has significantly changed the relationship between IP Networks and PSTN. Telephone traffic in Japan is decreasing and the cost of maintaining the withering PSTN will increase. The deployment of physical loops will be more critical than the scope of universal services in the IP era and some policy may be necessary to encourage new investment. Policy makers should also consider not only network layer but also upper layers such as platforms, applications and content. To resolve newly emerging issue, a cross-layered and comprehensive policy will be required.

The question coming up during the Q&A session was how Japan perceived the term "ubiquitous" and the way the Japanese government considered the social issues resulting from ubiquity. Keiichiro Seki pointed out that the term "ubiquitous network" has at the same time a figurative and a technical meaning. From the technical point of view, it describes the network connecting humans or products as well as the backbone of all economic activities. On the other hand the term has a educational meaning: ICT is invisible and people do not know what exactly IT stands for. In this context the term "ubiquitous" is used to attract people's interest. The Japanese government considers 3 different challenges resulting from ubiquity: the social, the economic and the technical challenge. Mr Seki, as a policy maker, stressed the social challenge, including important aspects such as privacy, security and consumer protection.

Krzysztof Heller, Former Minister of Infrastructure of Poland, gave an interesting overview on the

Current Status and Future Development of the Information Society in Poland

Even before joining the EU on 1 May 2004, Poland, as well as the other 9 new assessing countries, adopted the aims and goals of the Lisbon Agenda, recognized that a knowledge based economy is the foundation of future growth, and that the Information Society should be the general goal. Now these aims have to put into practice and concrete actions need to be defined. In order to do so, a balanced development is needed, that is to say, that 3 main factors have to be balanced: a) some form of infrastructure to transport information, b) content to give the network a meaning, and c) the knowledge on how to use it to make people benefit from the Information Society.

Where does Poland currently stand? In Poland, the number of fixed lines is far below the European average, however the penetration of mobile services is growing very rapidly in a very short period of time. The availability of electronic services and the functionalities offered by the government and administrations is still relatively low, even if the availability increased from 19% in 2002 to 34% in 2004. The penetration of Internet users in Poland is about 1/3 of the populations, but steadily growing. More than the half of home computers are connected to the Internet and the biggest growth in Internet connections indeed concerns the home users market. The quality of the Internet connection is still quite low, as most people use dial-up connections, only 1/3 of the households are using DSL, which is often shared DSL between households.

Poland is facing many challenges, such as the low percentage of appropriate content and services, or the inadequate Broadband infrastructure, even if the stage where operators extensively invested in networks is already passed – there are commercial companies, which do not invest without an appropriate return on investment, and there are a number of economically attractive black spots. However, the majority of the population is not yet convinced of the value of Information Society – a fact which increases the digital divide within Poland's population.

But at the same time, there are many opportunities for Poland to catch up: Technology is developing very rapidly and countries do no longer have to pass through every development stage other countries had to pass through before. The availability of low-cost Broadband radio access technologies, 3G Broadband mobile telephony networks, and especially the availability of different channels for communication and content transmission, which are all converging to a common digital form, offers a enormous potential for social and economic development. Additionally, the accession to the EU and the access to European structural funds represents an important factor for the development of a Polish Information Society and many initiatives are already going on, both on the country and regional level.

In the following **Q&A** session, Mr Heller responded to the question whether there is any special country or model for Poland to follow, that Poland should not try to reinvent the wheel. There is no single country or model which can be copied, because countries and situations are different. The best way is to look at different solutions and models and to evaluate what has worked in the past and what did not work and to try to build out of these existing solutions a solution which is appropriate for Poland. It has been stressed that the quality of the educational system will be a decisive factor for growth in Poland.

Jørgen Abild Andersen, Director General of National IT and Telecom Agency, Denmark, presented a dynamic Danish approach:

Supply-Push / Demand-Pull: The Danish Approach

The ambitious policy goal established in 1994 in Denmark is to offer Danish citizens the best and cheapest services in the world. There is a broad majority behind the telecom policy in Denmark since 1990. This gives predictability with respect to the regulatory framework, confidence among operators, and clear incentives for investment. The means to reach the policy goal are free and real competition and appropriate consumer protection. There have been no licence requirements in Denmark for the last 10 years and regulation is only focussing on regulating bottleneck resources, interconnection, etc.

After 1995 Internet became a success and politicians reassessed the policy goal. In 1999 a new agreement was concluded: All Danes should have access to the Network Society, the principle of best and cheapest has to be maintained, Denmark should focus on competition as a driving factor leading to innovation and growth, and the market should supply a broad variety of products meeting the increasing demand for high-speed networks and large bandwidth.

The main challenge for the regulator is the telecom policy goal to promote access to the Network Society; the main regulatory tool is to promote competition in the access network. Denmark developed a so-called "Several pipes to the home"-approach and focussed on the availability of the following access pipes for the consumer: ULL - "raw copper", FWA, 2G, 3G, Cable modems, FTTH, WLAN, Satellite, and Power Line Access. Satellites are not really a topic in Denmark; PLA has not been a success yet, mainly due to difficulties in establishing an appropriate business model for supplying Broadband over power lines.

The strategy in Denmark is to combine service-based and infrastructure-based competition. Today, Broadband is available in each of the 271 Danish municipalities – in more than 50% of the municipalities even on the basis of 3 different access pipes. 60% of the Danish municipalities have a penetration rate of more than 25% of the households and Denmark is among the "top ten" countries worldwide concerning Broadband penetration.

The vision of "IT for All in an e-World" represents a challenge for regulators to establish a demand to make this e-World become reality. A regulator has to act as facilitator by identifying barriers, taking initiatives to remove these barriers, establishing a public sector demand and public-private partnerships.

In the concluding **Q&A** part of this presentation, the question came up, what prevents the e-World to become reality. Mr Andersen considered this aspect as the essence of the challenge we are currently all meeting. There is an impressive development with regard to the supply-side of Broadband, as the basic infrastructure and prerequisite for this e-World to emerge. Now, the next phase has been entered, were the necessary demand in the public and the private sector has to be established to make it possible to use the benefits and to create the basis for business reengineering processes in all parts of the society. Secure Internet is considered as a very important topic in this context, because only if an appropriate level of security in the Internet is set up, the necessary degree of confidence among users can be established to make this e-World a success.

Nasr Hajji, Moroccan Congressman and Former Secretary of State, Posts, Telecommunications & Information Technologies in Morocco, briefly set out

The Potential of Emerging Countries

There are two possibilities for the 21st Century: a pessimistic one, made up of a socially, economically and politically divided world; and an optimistic one, based on a humanly and co-operative way into the Information Society. Actually, there is a crisis in the telecommunications sector – are there any perspectives of growth?

Perspectives of growth are in all the new emerging countries. The economic boom which happened in China and which is happening in Asia can happen everywhere on the world. In 1990, there have been 11 million mobile phone users worldwide – today there are more than 1 billion. And this is based on progresses made only in the developed countries! Imagine the potential if such developments take place all over the world. And it has happened in Morocco: The percentage of mobile phone users in Morocco dropped from less than 1% in 1998 to 30% in only 5 years. This technological jump which has taken place in the mobile phone market can happen in other areas as well, such as the Internet: In 1990, there has been less than 0.1% of the world population accessing the Internet; today, there are more than 10% of the world population using the Internet. And once again, this is only due to the increasing Internet penetration in the developed world and in Asia. Imagine the potential if this happens in every country of the world! Europe's potential to grow is very limited without a broad convergence between the developed world and the emerging countries.

Infrastructure Models In Europe, North America, Asia & The Emerging Markets

Broadband and convergence are major enablers of economic growth and competition. The session addressed the challenge of national governments to support the deployment of an adequate IT-infrastructure and to bridge the digital divide and identified exemplary answers of the private sector to the converging markets.

The session's moderator, **Shigehiko Naoe, Professor for Information Policy at the Chuo University**, Japan, introduced the topic of the session by sharing his long and knowledgeable experience of the

The Japanese Broadband Market

13 million of the Japanese households access Broadband via ADSL, about 3 million households are using Cable TV for Broadband access, and FTTH is used by approx. 2 million households. In total, about 40% of the Japanese households are using Broadband. However, the Japanese Broadband market is different from other countries, because more than 60% of the market are served by newcomers and not by the incumbents. ADSL is offered exclusively by new carriers, while FTTH, which has just been started but is growing very fast, is offered by the incumbent NTT.

Japan is currently facing a major change in Broadband access: Since the beginning of 2004, subscriptions to ADSL slowed down dramatically, while FTTH is increasing very fast. ADSL companies are loosing money and there is a strong competition between ADSL companies and NTT: While Fast ADSL initially started with a 1.5 megabit access, main ADSL companies are now offering 12 to 20 megabit access, and since 2004 some companies are even providing a 24 to 40 megabit high speed ADSL access in order to compete with the FTTH served by NTT. In consequence, NTT reduced the prices of FTTH of about 50% since last spring and the number of FTTH subscribers continues to grow rapidly. However, the overall growth of the Japanese Broadband market slows down: In 2003, there were 6 million new subscribers, as against less than 3 million expected new subscribers in 2004.

The Japanese Broadband market is currently in a difficult situation and it is not possible to say who will be the winner at the end – ADSL companies or FTTH providers. One of the main problem for companies offering Broadband is the lack of an adequate business model. There is no killer application or killer content to make money with the Broadband services. In this difficult situation, Japanese telecommunication and information industries are changing to new industrial structures from integrated service providers to providers of different layers of services. Moreover, most of the Broadband users are using IP-telephony. This strongly affects incumbent telephone companies, which have for their part also to restructure their business. E.g. NTT recently announced to construct an optical fibre network to replace the old telephone network and to provide more than the half of its customers with FTTH within the coming 6 years.

Mr Shigehiko Naoe concluded that Broadband markets are very different from country to country, and cultures and national behaviours have a strong influence on the market. Whereas, for instance, in Korea 60% of the Broadband revenues result from Internet games, in Japan most of the revenues result from IP-telephony.

The **president** of the session, **Brent Olson, Assistant Vice President of SBC TELECOMMUNICATIONS**, [www.sbc.com] - one of the main sponsors of the Global Forum 2004, opened the panel by giving a brilliant presentation on

IP and Broadband: Transforming the Communications Landscape

SBC is the largest DSL provider and the 2nd largest long distance provider in the US. SBC has a 60%-ownership in Cingular, which, with newly acquired AT&T Wireless, will be largest wireless provider in US. Since March 2004, SBC is working in partnership with DISH to sell satellite TV.

The market phenomenon which is currently taking place in the US communication marketplace can be referred to as the converging competitive communications marketplace. Converging in a sense that the traditional technological barriers between networks and services are breaking down; competitive in the sense that the idea of a single service provider for any particular form of communications is gone. Traditional telephone services is a shrinking business, while the usage of other communications media, such as Broadband and VoIP, increases. Consumers increasingly use multiple forms of devices, networks, connections and applications to communicate with one another. More revenues are going to new services, less revenues are going to old services. In the US, the usage of traditional wireline products has dropped by more than 20% while the usage of other communications media has more than doubled. Moreover, these services are provided in a dynamic market, shaped by a broader array of providers and increasing customer control over the services they use. At the national level, 22 providers have a revenue share of the consumer market of more than 1%; no service provider has more than 9% of the revenue in the market. There is an obvious customer demand for services packages and bundles. Today, service providers have to provide multiple communication services under one umbrella.

SBC's answer to these challenges is to continue to expand its wireless capability, but also to provide a wireline answer – the so-called “project Lightspeed”. Project Lightspeed is the effort to transform the wireline network to be able to provide triple play, voice, video and data. A fibre-rich, IP-based integrated services network, which is more flexible, more robust and more capable responding to customers demands, will offer a whole new array of services. The goal is to reach 18 million households within 3 years. The network will provide 15-25 Mbps for IPTV, super high-speed Internet access, and IP Voice. The key capability to be added to the network will be video. Due to new compression technologies and raising bandwidth, it is now possible to provide high quality videos. The network truly enables the digital home where multiple devices are interconnected and all services interoperate.

Regulation in this new world needs to adapt to recognize fundamental changes in technology and the marketplace, in particular convergence – regulation can no longer be technology or service specific; competition – regulation can no longer assume a single provider environment; investment in networks and applications – regulation must facilitate, not deter, investment in new technology; and finally speed – the new regulatory environment has to be put in place quickly.

Kjell Arne Yttervik, Leader, Digital Media, EMEA Nordic Region, IBM, www.ibm.com – one of the Global Forum's 2004 main sponsors – concisely presented a very interesting approach on

Broadband and New Services for the Public Sector

The Nordic market is not a homogenous market at all. The local municipalities are under pressure from different directions to improve their communication infrastructure. However, the fibre penetration is very high in the Nordic region, due to two main reasons: pressure from the government to cut down administrative costs by using new technologies, but also pressure from the citizens and the business sector to use these new services in order to stay competitive.

The challenge is the business case. It is easy to find good projects that from a technical point of view worked extremely well, but difficult to find projects with a good business model. For a local municipality this represent a big challenge - and a crucial requirement to meet this challenge is to find new partners. This is happening more and more in the Nordic region: Local municipalities decide to deploy fibre, copper, or wireless networks as part of their urban ICT infrastructure but they see that they need additional funding and additional services to make this project successful. Many of these municipalities own parts or whole utility companies. These utility companies generally have a good economical situation and dispose of a lot of ditches and tubes to put fibre or copper cables in. Together, municipality and utility company are in a very good position to deploy these networks, especially in local or rural areas, and to provide services for citizens, businesses and the public sector.

A utility company by its nature and organization has many of the same values, ideas and goals as a local municipality. It is a very good match from a partnership point of view, as a utility company is already a service provider by nature: The company just has to add a new kind of service. They already have the organisation, the building system and the technical infrastructure. And even more important is the value aspect: A local utility company is not a "big city" private company coming into a small rural are of a Nordic region just to make profit, but it also has certain "idealistic" values. Utility companies are moving towards multi-service companies based on the "old" local government values.

Patrik Fältström, Member of the Swedish IT Policy and Strategy Group, outlined

The Swedish Government's View on Infrastructure Trends

Sweden, having a long tradition of IT-companies and IT-use, deregulated the telecom market very early, as one of the first countries in the world, in 1993. Sweden has also a long history of co-operation between the public and the private sector. In 2000, the current ICT policy goal, named "An Information Society for All", has been adopted. In this bill it was stated that during the next 4 years households and business in all parts of Sweden should acquire access to IT-infrastructure with high speed capacity. The bill initiated an open procurement process to engage the market as far as possible to deploy Broadband all over Sweden. Through funding processes, the government supported the deployment of Broadband in rural areas – but even these funds have been given out within open procurement processes. There has been a very strong requirement from the government side, that the networks established with governmental grants should be open from a competitive point of view.

A new ICT bill will be presented in 2005. This upcoming bill addresses a number of key issues, which are scrutinized from a consumer perspective in order to identify requirements and the implications on the existing market and regulations. The major aspects addressed in this upcoming bill are: "Mobility", as the ability of a user to access a service whenever, from wherever and via whatever device he/she wants – what requires a horizontal separation between services and IP-providers and not vertical integration; "openness of the networks" in terms of regulation of competition; "transparency" of the processes for all different kinds of access; and "convergence" of existing traditional technologies to be used IP-based and their ability to access services via the Internet.

The bill also identifies a number of "killer applications" already existing in Sweden. Examples can be found in the field of next generation digital radio and radio-astronomy, where currently small and very cheap telescopes are deployed all over Sweden. These telescopes produce 2 Gbps of data continuously. Thus, 50% of the 10 Gbps of the university networks will be filled by just one application.

Moreover, the bill addresses the question, how to stimulate the use of these services. Sweden's strategy is to use these services in the public sector to push IT-infrastructure development. The public sector has to act as a competent and conscious user. It will also be important to continue the close co-operation between the public and the private sector as well as between local, regional, and national players.

Further issues addressed by the upcoming ITC bill are: Openness of black fibre to foster competition; how to assure that a user can always select between different service providers if in some areas of Sweden there is no market for multiple SPs; as well as the blocking points and problems to be solved to enable users to access the same service regardless the ISP they are currently using.

Bernard Mathieu, Head of Radio Communications Programmes at the CNES (French Space Agency), [www.cnes.fr], one of the main sponsors of the Global Forum, presented with all his dynamism and devotion a fascinating initiative:

The AGORA Initiative: Towards a Competitive Satellite "Triple Play" Broadband Services Offer for All and Everywhere

The potential market for satellites is huge and Broadband access solutions via satellites exist. However, the service ramp up is slow, because satellite Broadband access offered today is still too expensive. Sharing the expensive satellite channel bandwidth by using LANs does not significantly reduce cost and does not offer best performances. Thus, a new architecture is mandatory to initiate the virtuous cycle of a new success story reaching the mass market and helping to bridge the digital divide.

A new initiative, called Agora ("Affordable and Guaranteed Offers for Rural Areas"), has been launched by CNES to reduce the costs of Broadband access solutions via satellites. The main objective of the Agora initiative is to provide the cheapest Broadband satellite telecommunication services offer in Europe (and later on worldwide). Agora aims at deploying a new generation of a high throughput satellite network system by 2007, able to provide at a very competitive cost the full range of Broadband telecommunication services to households and companies which are not connectable at a lower cost by terrestrial solutions. The offer includes triple play Broadband internal access, advanced TV programmes and VoIP phone communications. The service will be available at the same QoS everywhere

within the European Agora satellite coverage, what makes Agora a concrete reply to the national and European policy of developing an “Information Society for All and everywhere”. With the capacity to solve the digital divide within European countries as well as between urban and rural areas, Agora is a competitive Broadband solution positioned as a complement, not a competitor, of terrestrial networks. Initiated by CNES, Agora is led and mostly financed by private players and requires the early involvement of strategic partners, such as telecom operators or ISPs.

The key technical features behind Agora’s competitiveness are a European-wide coverage with 40 high gain spot beams instead of the large unique coverage of today’s broadcast satellites, the use of a Ka-frequency band, the adoption of a new transmission standard, the optimisation of the satellite architecture, in order to increase throughput by a factor of 15 and to reduce cost by a factor of 10, as well as the development of low cost user terminals for the mass market.

99% of the potential European customers can be reached immediately due to a wide multibeam coverage once the first Agora satellite is deployed. The Agora system will dramatically transform the economy of the satellite-based Broadband access sector. With such levels of prices, Agora can position itself as a natural component of the infrastructure in rural areas or less developed European countries owned or leased by Telcos and ISPs.

Len St-Aubin, Minister Councillor at the Canadian Embassy in Berlin, Germany, gave an interesting insight in

Bridging the Digital Divide: The Canadian Experience

Canada has a relatively small population, spread across a very large land mass. Early in the countries’ history a commitment was made to universal affordable access to telecommunications services for all Canadians. Together with the private sector, the Canadian government is working to ensure that all Canadian communities will have high speed access by 2005. Canada, such as the rest of the world, is experiencing a digital revolution, with ICT as the main driver. Access to telecommunications technology and the degree of sophistication of telecommunications is critical for economic success. Canada recognized the importance of digital networks and made a commitment to ensure that information and knowledge infrastructure would be available to all Canadians. This is why in 1997 the Canadian Government set out to make Canada the most connected country in the world. This vision set the stage for allowing policies and programmes to make a dream reality: 10 years ago, only 18% of Canadians made use of the Internet and commercial Internet service was entirely based on dial-up connections. Since then, Canada has connected schools, libraries and volunteer organisations to the Internet, being the first to have done so as of March 1999. 500,000 refurbished computers have been placed into schools, of which 90% are connected to the Internet (making a ratio of 1 computer for every 5 students, whereas the OECD average is 1:14) and Canada implemented the first all optical coast to coast national network. The government put all of its programmes and services online and an increasing number of Canadians now demands for high speed access. 64% of the Canadian households are connected to the Internet and more than the half of the households use high speed services. This was achieved by a highly competitive market. Today, Canada is one of the most connected nations in the world, a world leader in advanced network development, an internationally recognized “first mover” in connectedness, and a global leader in setting policy frameworks.

However, Canada's geography is particular. To connect this vast country, the government has committed to a goal of Broadband access for all Canadians by 2005, and even if most Canadians have already access to Broadband, a small part of the population has not yet access to this level of services. Working with the private sector, the Government is rolling out the network to reach these isolated rural areas and to build the necessary infrastructure. The Canadian community aggregation approach principles include: investment responding to communities needs, the private sector playing an active role, third party open access to networks, a competitive process for building and investing in networks, technology neutrality in the selection and investment and particularly government funding, a sustainable and scalable network infrastructure, and one time federal government investment to make it work.

The IT-Use Broadband Report recognizes that access to knowledge and information is the major driver of growth and that Broadband will help accelerate this process. The Canadian models to bridge the digital divide might be used by other countries facing similar challenges. Canada is more than willing to share this knowledge and experience and is working closely together with the ITU, OECD, UN ICT Task Force, G8 DOT Force, and many other organisations and countries.

L. Marie Guillory, Vice President for Legal and Industry Affairs at the National Telephone Cooperative Association (NTCA), USA, www.ntca.org, which is one of the supporting sponsors of the Global Forum 2004, illustrated with a lot of commitment the

NTCA Members Role in the USA

NTCA represents about 560 rural telephone cooperatives and commercial companies serving rural areas in the US. Half of the NTCA members are organized on a co-operative basis, which means that they are locally owned by the subscribers who receive the services and not by stock companies. NTCA, as the voice of rural telecommunications, has the goal to ensure that rural Americans have access to affordable telecommunications services comparable to their urban counterparts. Universal service policy is written into the communications laws of the US.

The members of NTCA diverse in size and services. Their subscribership basis ranges from less than 100 customers to more than 50,000; staff ranges from 2 to 400 employees, revenues range from 100,000 to 40 million US\$. The average company serves about 5,344 subscribers and has 31 employees, with annual revenues between 1 million to 5 million US\$.

Why do these companies matter? Their service area encompasses more than 40% of the nation's land mass. They are small and they are focussed and very community oriented. They play an essential role in maintaining the nation's economy, because they are small businesses that employ members of the regions they are serving. They offer efficient telecommunications services and produce and deliver local content.

NTCA's members are currently facing the challenge of convergence in rural areas. Traditionally, these companies were monopolies which now have to change to a competitive model. However, by diversifying these small companies are adapting very fast to this new competitive environment: In addition to traditional local phone services, NTCA members offer a wide range of advanced telecommunications services delivering invaluable access to rural areas, such as long distance phone services, Internet services, videoconferencing, DSL Broadband Internet, cellular services, and Cable TV.

In 2004, 92% of the NTCA members offer Broadband to at least some part of their customer base – this is a dramatic increase from 58% in 2000. 44% of NTCA members offer video services, and less than 1% offer VoIP. 59% hold at least one wireless license and 56% are providing wireless services.

Eva Frölich, Board Member of the PUBLIC INTEREST REGISTRY .ORG, Europe, [www.pir.org], which is one of the main sponsors of this year's Global Forum, gave a deepened insight in

Infrastructure for Domain Names

PIR - Public Internet Registry - is a Virginia-based company which runs the .org registry. PIR is operating under sponsorship of ISOC and under an agreement with ICANN. The .org registry is operating .org, which is a generic Top Level Domain (gTLD) - compared to country code Top Level Domains (cTLD). The cTLD indicates a certain country, for instance .se for Sweden, .fr for France, or .jp for Japan. The generic Top Level Domains are .org for organization, .info for information, .com for commercials, etc. The gTLD operates on a truly global basis - some of the cTLDs do not and are just working for the country they are indicating. Whereas cTLDs are sometimes very restrictive and do not allow to register whatever domain name you want, it is always possible to register within the gTLD field as long as the domain is not taken by someone else. .org is the TLD for non-for-profit organizations, like counties, charities, or associations etc.

Is .org as secure as other TLD's? Yes, .org uses all the standards developed by IETF (Internet Engineering Task Force) and its servers are placed in secure premises around the globe.

Another important issue is privacy: .org and PIR have recognised the EU regulation about privacy. PIR is now working on how to implement this regulation in the "Whois!", which is a search allowing to find out who is behind a certain domain.

Domain names are important to facilitate all the many services and broadband activities. The users need to have a way of addressing the services they want to reach and domain names are an easy way for doing this.

Dzintars Zarins, Executive Director of the Latvian Association of Computer Technology (LDTA), summarized the remarkable

IT Development in Latvia: 1990-2004

In the period between 1990 and 1994, a lot of companies distributing IT-products and services arose. The market was characterised by a large black market, few distribution of legal software, a lack of large international wholesalers, a telecommunication monopoly, small Internet capacity, and very expensive services. Companies bought directly from suppliers in the USA, Taiwan and China. However, first companies started with software and data base development for the governmental and the private sector and first international projects had successfully been launched.

In the period of 1995 to 2000, international wholesalers and international brand representatives, such as HP, IBM, Siemens, or Microsoft, started to work in Latvia. Moreover, several branch and industrial associations have been founded, among those the Association of Computer Technologies of Latvia (LDTA).

Between 1995 and 2000, the Government increased investments in the IT-sector, the major Latvian IT-companies received the ISO 9000 and ISO 9001 quality certificates, the distribution of illegal software as well as the “black market” share decreased, and foreign investment increased.

The period between 2001 and 2004 was characterized by the end of the telecommunication monopoly in January 2002 and the beginning of a fast Internet deployment. The Latvian IT market grew and Latvian IT enterprises actively took part in the development of the Information Society.

The estimated size of the Baltic IT-market is between 1.2 to 1.4 billion € with an estimated growing rate of about 10% per year. Today, 35% of the active Latvian population is using the Internet. Major Latvian IT-companies are Microlink Systems – the most successful technology investor in the Baltic, SAF Tehnika – the most successful High Tech enterprise in the Baltic region, and Lursoft – a software developing company.

As general conclusion for the IT-development in Latvia, it can be stated that the state’s investments in IT-infrastructure and e-Government should be implemented faster, the financing of the digitalisation process of schools and the education system has to go on and investment in education has to be increased, Internet penetration should be enlarged, and copy right protection must be promoted.

Content & Usability

Do we have enough content for the technology currently available? Do we have enough technology to process all the content we have? The perspectives covered in this session were market trends, issues and opportunities, infrastructures and tools, social benefits, and content providers.

As **moderator and chairman** of the session, **Gilles Polin, Partner Accounts Manager, Government Enterprise and Partners Group, MICROSOFT EMEA**, [\[www.microsoft.com\]](http://www.microsoft.com) one of the main sponsors of the Global Forum 2004, introduced with passion, clarity, and knowledge some of the current needs in the public sector. He argued that often the different entities of government at central, local and regional level were disconnected and suggested that technology makes it possible to solve these issues and to connect all these services. The ultimate goal for the citizens was to be able to access these services from different devices: from home, from the office, with mobile devices, or from kiosks where the technology penetration in the homes is not sufficiently developed.

Some of the issues at stake in government today included the future of education, healthcare and government. Mobile devices will have a very strong importance in learning as well as in healthcare, where technology will help connect the providers, payers, employers with the patients and where mobile devices will ease the use and access to these technologies. In the future government will benefit from the complete Web services organisation for which applications can be developed in order to access all the different angles of government.

As the session's first speaker, **Hervé Rannou, President of ITEMS International**, France, presented

Triple Play: Economic Perspectives

The convergence of voice, video, and data is upsetting the market for TV, computer, mobile and fixed phone services. The number of fixed telephone lines is decreasing and the number of mobile phone subscriptions and people with Broadband access in Europe are increasing.

With the introduction of Triple Play services, many operators expect their Average Revenue per User (ARPU) to increase. However, this will not necessarily be the case. Today, the ARPU in Europe for mobile users is 27-30 €: 32 € for fixed services, 30 € for Internet services, and 35 € for video services. There is no assurance that Triple Play services will increase the global ARPU of all these services. Today, the ARPU in the USA is approx. 150 €/month, while the ARPU in France is only approx. 50 €/month. In the USA services are provided via Cable, in France via DSL. Which of these countries represents the right model for the ARPU trend?

The value chain of Triple Play services is very complex, but mastering it is key in the competition. It involves the need to control and master all the content providers and all the service providers. It also needs to address the question on how much you are willing to pay for a service and content and how you propose to deliver that service to the customers.

Apart from the United Kingdom, where the market is already well developed and the German market which is completely different with its many free analogue TV channels, the market for

digital TV in Europe is still quite undeveloped, leaving many opportunities for developing digital TV services. In terms of benefit, two approaches avail depending on whether TV services is the core business or not. Whereas TV services for a Telco or an Internet provider is only an appeal product, the TV provider wants to get value from his TV services.

If the potential customers will extend their network with DSL instead of Cable, the Cable Operator will be reduced to just an aggregator of services, i.e. a Direct-to-Home Services Platform. This means that in the future, there will be no difference between companies such as TPS and Canal Satellite on the one hand and France Telecom Cable and UPC on the other. The future is unclear even for the Direct-to-Home Platforms like TPS or SKY. Today, these companies provide all the services and maintain a strong position. But who will play the game in the future? The Telcos has already started to provide more and more services. Today, if they want to provide Triple Play services, they have to deal with the Direct-to-Home Platform companies, but in the future this will no longer be necessary. The possibility is that they deal directly with the TV channels.

As an example, the French company FREE must be considered one of the most prominent players today. By offering a totally unbundled service including 4Mbps Internet, IP phones and free TV for only 30 € /month, they have completely destabilised the market leading to France experiencing the fastest growth in DSL services in Europe today.

The challenges of tomorrow include TV channels on demand, dissemination of specialised channels, direct agreements with content providers and fixed and mobile VoIP unified services. The risks for the players involved are many: The Telcos face risks in fixed VoIP and VoIP mobile gateways; the Internet Providers are dependant on Telco price policy and due to their small size has a low capacity to deal with content providers; the Cable Operators and Satellite Platforms face a bandwidth race, with DSL in Asia already reaching 20-40Mbps.

Joakim Nelson, Director, Head of Business Strategy GSM/UMTS, SONY ERICSSON, Sweden, [www.sonyericsson.com] – one of the main sponsors of the Global Forum 2004 - set out a fascinating vision of

Future Mobile Services

What will the mobile industry looks like in the coming 5 years? With more than 1 billion mobile subscribers today and 600 million mobile phones sold per year, few industries show a similar growth rate as the mobile industry, which is now on the track to the second billion mobile users.

The trend today shows a tremendous growth in functionality, but also a big demand to get low price devices in the newly industrialised world – Indonesia, Russia, China, India – where an estimate 70% of the next billion mobile subscribers will come from. One of the big question for the future is therefore whether they will want voice or SMS only devices or whether they will want fully fledged camera phones or MP3 player equipped phones?

Rather few services apart from voice and messaging have, so far, showed any significant increase in the US or in Europe. There are, however, signs that the market will change. The non-voice market is today mainly being driven by Japan and Korea, where about 80% of the mobile subscribers has Internet connection in their mobile phone. Together, Japan and Korea make up 75% of the worldwide market for non-voice mobile phone communications. There are great opportunities for Europe and the US to catch up with these figures.

What kind of services would people like to have? Potential areas for future new services include: e-Commerce, localisation services, push-to-talk services, enterprise applications, TV and video, extreme low price services, fixed-mobile convergence, and third party application development for mobile phones.

Today's mobile phones have more and more functionalities and include more and more services also provided through the mobile operators. Even though a mobile phone with so many functionalities is something very complicated, applications must be easy to use and must have a high perceived value from the consumer to reach success. The new mobile phone is a device for saving time (phoning people, using Internet, work) as well as a device for killing time. The advantage of the mobile phone is that it is a very small device that people bring with them all the time.

SonyEricsson, brings together the competence of Ericsson in telecommunications and its relations to the big mobile operators with Sony's competence in audiovisual contents and devices. This makes the company well prepared to move into the next type of mobile phones and future services

Fred Deutsch, Founder of VOXONIC INC., USA, [www.voxonic.com], one of the main sponsors of this year's Global Forum, outlined with conviction

Freedom of Speech in Every Language. Hearing is Believing.

While the world becomes more and more globalised and is moving towards a multimedia society, an important question comes to mind: Is the information that is being distributed, being received properly by the people who have to receive it?

There are 1457 languages in the world. Now your voice can be heard in all of them. The Voxonic voice transformation software models voices and can deliver any text to fluid speech in any language and in any voice. All that is needed is a 10 minutes sample of your voice.

This technology gives rise to multiple uses: Whether in politics, marketing, music, international dubbing or corporate communications, Voxonic makes it possible to reach out to the targeted constituents, customers, audiences, and collaborators in their own language. Just imagine the European Union with 25 member nations and 20 official languages!

Fred Deutsch's creation of Voxonic stemmed from his frustration with movies dubbed in foreign languages. While on vacation in France, and intent on enjoying an American movie, Fred Deutsch became acutely aware that the dubbed voices sounded nothing like the familiar voices of the movies' well known actors. Was not there a way to embed the vocal tones of the original actors into the dubbed voices of the foreign language movie? That curiosity set Fred Deutsch to work exploring the possibilities. The path was long, torturous and costly, but the outcome was a company – Voxonic Inc. – with a technology that does the job.

Ky-Ming Jen, General Manager of XANDM@IL, France, [www.xandmail.com], one of the main sponsors of the Global Forum 2004, presented some very interesting developments in the field of

Global Offering in Voice, Data and Video Services on Fixed and Mobile Networks

Pictures, music, video, multimedia files, voice... people deal with more and more digital data on a daily basis, from different sources (camera phone, digital camera, MMS, ...). However, when they want to manage and store all this valuable material, they are stuck between leaving it on the respective devices, or transferring it to a computer, with the limited access and filing issues this entails.

Digital device consumers now express a need for a single, safe, user-friendly storage space for all their digital data, integrating intuitive and useful features. They want their data to be accessible on any connected device, within their home network or even outside the home without security issues.

Based on this reality, XandMail has developed the possibility to store all your data in a virtual databank. The databank is accessible from any device and from anywhere, independent of the place. It fulfils the security concerns. The operator will become the bank for our data.

The consumer gains independence from the device and the location as well as security from his operator's databank. The operator gains "stickiness" and the opportunity to sell other services, as well as to enhance its image as a "bank" and can sell its storage as a vault.

Carolyn Nguyen, Director, Technology and Strategy, Avaya EMEA, United Kingdom, presented the ubiquitous item of

*Converged Communications Services for the Mobile Enterprise
- Anytime, Anywhere, Anyhow -*

Communication is strategic. It is becoming more and more important to be able to communicate - anyone, anywhere, anytime, anyway - and to be able to reach the right person, in the right place, at the right time, and in the right ways. It is not enough just to integrate communications in the business process; communications can and should transform the business process.

For technology to be deployed successfully, the enterprise needs imperatives to drive this innovation: Business imperatives, user imperatives and IT imperatives. Converged communications, using multiple devices regardless of the kinds of networks, enables new business models by integrating communications with enterprise applications, business processes and personal communications. This mobility improves productivity and employee satisfaction. Converged communications enables to enter a new era of enterprise effectiveness, where people become more productive, processes more intelligent, and customers more satisfied.

Avaya is a leading global provider of business communications software, systems and services focused on serving the needs of businesses.

Ranjit Makkuni, President of the Sacred World Foundation, India, presented his fascinating Indian experience in

Innovation through Culturally Conscious Technology

Where will the next generation technology come from? By converging technology with traditional culture and handicraft, Ranjit Makkuni and the Sacred World Foundation explores new technology designs showing that engagement with culture provokes fundamental re-questioning of forms of computer user interfaces. In integrating the hand, the sense of touch, texture and gesture and craft in the design of modern technological interfaces, it is possible to create new tools of communication and new kinds of instruments.

The Sacred World Foundation is a state-of-the-art research and design think tank whose projects are exploring innovation created by building bridges between technology and traditional cultures. Among other projects, Ranjit Makkuni and the Sacred World Foundation are involved in developing a Gandhi Multimedia Museum in New Delhi. This exhibit presents through modern tactile multimedia such as non-button pushing based, gesture-based interfaces, and new forms of multimedia access to multimedia content Gandhi's contribution to India's freedom struggle, class unity and race unity and the Gandhian core values.

In this sense, Ranjit Makkuni is bridging multiple worlds – between technology and culture, and between developed and developing worlds. His achievements show how addressing body friendly interfaces and incorporating the user interface expertise known to traditional crafts could contribute to better designed workstations, mobile devices, products and content also in the design of communications tools in the western world.

Paul Cheshire, Consulting Director, Welfare Sector, Atos Origin Consulting, introduced

Ensuring Social Inclusion when Delivering eServices for Welfare

Welfare services are needed by everyone at some time - and are usually most frequently needed by people who are least able to make use of "e-Services" that they judge as "complicated" or "expensive" to access and use. Service designs need to be informed by the service users' abilities, peace-of-mind and convenience as well as ambitions and constraints that the service provider may have.

Many attempts to offer "e-" facilities in welfare have not achieved the service provider's success criteria. This is not because the infrastructure was based on flawed designs or components, but because it failed to give full consideration to the needs and desires of the ultimate recipients of the welfare service.

There are today a lot of channels available, a lot of technology available and a lot of ways in which all of these messages can be delivered over a consistent channel base – but to address the issues of ability and accessibility there is a need for consistence irrespectively of the channel used. This is not currently the case.

Socially inclusive, practical, effective and efficient "e-" facilities for welfare service delivery is 90% about understanding the person and only 10% about technology. Tackling barriers to inclusion in the low-income group can guide designs that are attractive and inclusive for the high income group. Usability is the key.

Alfredo Ronchi, Professor of Multimedia Publishing, EC MEDICI Framework Secretariat, Politecnico di Milano, Italy, [www.polimi.it], one of the supporting sponsors of the Global Forum 2004, presented a different approach towards

Long-term Preservation of Digital Content

We are generating a lot of documents and content. What about the protection and ability to access this content in 200 years? What are the long-term implications if we rely on current digital technology to preserve our cultural memory? Digital information in any form (documents, archives, music, movies, art,...) is at risk to be lost forever.

It is the rapid change in technology that make preservation of digital content a challenge. The biological clock of ICT beats smaller time slices compared to those considered worldwide in the field of cultural heritage. Digital formats becomes suddenly obsolete and disappear, making data inaccessible. An extraordinarily long-lived solution, such as the PC/DOS in great favour for over twenty years, represents a short-lived apparition if compared to the time spent in state owned archives. Computer systems are aging, media on which information is stored are disintegrating – the magnetic technology diskette survives without problems for thousands of hours but not enough to be considered “permanent” for those aims.

Long-term preservation of digital content and archives is a problem up till now widely underestimated and remains a big challenge in the era of the Information Society – not only for cultural content but even for e-government and social services.

The MEDICI Framework promotes the use of ICT and new technology in the field of culture, education and cultural heritage.

Terje Nypan, Senior Advisor, Norwegian Directorate for Cultural Heritage, Norway, presented the multiple values of

The Economic Potential of Cultural Heritage for the ICT Industry

Cultural Heritage has multiple values – experience value, knowledge value, and use value – that can be put into business value and business opportunities. Apart from being a reflection of the identity of the different European nations, cultural heritage plays a significant role in the tourism and economic sectors. As an example, cultural heritage generates employment for approximately 8 million persons and has a turnover of 335 billion € per year. However, only 6-10% of the visitors’ daily spending remains at the cultural heritage site, the rest flows to the society around the site.

The technological spectre and the use possibilities of the cultural heritage sector are enormous. Technology is used in order to making the tourism sector more efficient and less manpower intensive, to exhibit, market and sell crafts over the Internet, or to animate history with help of multimedia technology. Museums and libraries use high technology for security and for monitoring the environment. There are serious plans for implanting chips into objects of art to stop illicit trade.

The combination of ICT and cultural heritage creates business values for the entertainment and edutainment industry. With modern laser technology it is possible to map any building on a 3D level and it is easy to put it into a computer. The real market for this technology is in the gaming industry, where however the development of gaming engines is still far behind its

potential. Educational programmes for schools and universities are also an enormous market that has hardly been touched, where multimedia applications could be used to animate history by developing “walkthrough” guides, digitalised encyclopaedias, games and edutainment, hence making it possible to literally enter history and maybe even to intervene in the course of a battle or other.

Hence there are several areas where the cultural heritage sector and the ICT industry converge in their interest in developing the Internet as a transport and access media and in Broadband to facilitate access and content transport, as well as in displays technologies for mini-screens and outdoor display. The cultural heritage sector is also interested in high resolution technology for content value added, 3D rendering and laser for 3D models.

As a conclusion, a lot of money could be made from cultural heritage. One would however hope that when culture heritage buildings or other are in desperate need of rehabilitation, the industries exploiting it will also help financing this.

The discussion within the concluding **Q&A** part of the session centred on the statements: Do we have enough content for the technology currently available? Do we have enough technology to process all the content we have? Mr Cheshire was of the opinion that we have all the technology we need and more. His view was that if there is no more technology innovation in ICT and healthcare for the next 10 year, we will still not have implemented what we have today. Terje Nypan agreed that there was certainly enough technology to make things interesting, but that there was a co-operation, co-financing, and focusing problem on what we are going to use the technology for. The private sector alone cannot risk the investments needed. The challenging part is therefore to establish more joint ventures and the technology will follow. Alfredo Ronchi emphasised that the cultural sector had a lack of market focus. There was a need to include new profiles in the group of cultural content people dealing with user and marketing aspects. Mr Rannou argued that there is a need for more technology in order to forget the technology. There is a need for more bandwidth to forget the network, a need for more speed to forget the computer and more user-friendly interfaces to forget the interface. Mr Nelson highlighted new dimensions that are brought by technology. Firstly, it creates among young people a harmonised pattern of use all over the world, whether they live in Korea or in Europe. Secondly, the possibilities to produce self-generated content, such as photos, films, music, etc, are totally new aspects of technology that drive contents. Ky-ming Jen noted that yesterday we had Internet with dial-up connection and some level of services. Today we have broadband, but we are still in the beginning of this development with 1-2Mb connections. Tomorrow we can have 50-100 Mb and all of this technology will give us more services. Also, even though we do have a lot of technology and devices today, it is still complex to use for the end-users. With more speed and technology we can improve and simplify the usability of devices. Thus, simplified usability go hand in hand with more complex technology. Mrs Nguyen agreed that we do have a lot of technology today, but insisted that there is still a need to search for the right technology. Usability is the key and there is a need for better cooperation between the technology providers and the social providers to achieve better outcomes.

International Impact of Convergence on Regulatory Trends

The session provided an overview of what happens in the international arena with respect to the very profound consequences of convergence on regulation. It highlighted the need for regulators to look at issues more horizontally than vertically, and raised questions, like the one if similar situated companies should be treated differently or whether companies with different legacies and different regulatory experiences should be harmonized.

As **chairman** of the session 3, **Michel Huet, Senior Vice President for International Public Affairs at FRANCE TELECOM** [www.france-telecom.com], one of the main sponsors of the Global Forum 2004, welcomed the participants and introduced the overall topic of the session by raising with passion and clarity some key issues and questions on

Dealing with Convergence - Tension among Objectives

Businesses are moving very fast and regulation has to follow quickly. Balancing the tensions and conflicts among the many goals of the regulatory framework is currently at the core of the regulatory challenge. Regulators have to move away from basic regulation in order to become facilitators. In particular, the challenge is to simultaneously stimulate deployment, or at least not to hinder deployment, of competitive services and to foster innovation without distorting the evolution of the market, while at the same time protecting social needs, such as universal services or public broadcasting. Concerning emerging services, regulators are confronted with the question: How to reconcile the possible need for ex ante remedies while at the same time avoiding the risk of imposing inappropriate remedies?

What are the regulatory trade-offs? One reaction could be to say “lighter rules for new services”, such as VoIP. In this case regulators could apply a concept of forbearance. The other possibility would be to roll back regulation, e.g., by defining voice communication as one single market, (regardless if it is mobile, fix, or VoIP) and dividing into in different sub-markets (VoIP, ...).

Who will lead in the future? There are two models in competition to structure the new online multimedia markets: the model coming from the computer industry (the “Microsoft model”), and a mixed model based on partnerships between consumer electronics and telecommunication operators: the Telco model. Which model will be promoted by regulators?

Finally, telecom regulation has to evolve from “how to introduce competition in the telecommunications sector” to “how to regulate competition in winner-take-all markets” such as online multimedia markets.

The **session’s moderator, Andrew Lipman, Partner of Swidler Berlin Shereff Friedman, USA**, gave some opening observations on the convergence of voice communication and its impact on regulation. VoIP is the migration from the traditional switched circuit based service to a new IP-based model. In a very short time the entire industry, with few exceptions, converged to an IP-model. Between 1998 and 2003, IP-traffic rose from 1% to 30% of the world’s traffic.

VoIP might be a suitable solution for better deploying telecom services in developing countries. For instance, Africa counts for only 4% of the total Internet voice traffic but has the highest growth rate in the world, Latin-American countries like Peru have among the highest percentage growth rate in VoIP, some Central-European countries like Poland or Bulgaria have a very fast uptake in terms of VoIP-traffic. VoIP could be a kind of equalizer for these countries.

It is not a question of when the worlds' telecom providers adapt this migration but whether how they will do it and how it will or should be regulated. One of the important things to keep in mind is the lower cost of VoIP but also the question, how to regulate a service that is free and that does not have a historical telecom legacy. And how to do this at the same time governments are regulating/ deregulating incumbent services? While there clearly are multiple benefits of VoIP, such as lower costs, better features and mobility, there are global issues regulators are currently struggling with, e.g., access to emergency services, contribution to universal service funds, access to the hearing impaired, or the requirement of paying terminating interconnection charges. To what extent these and other requirements apply to VoIP? Another important issue is network security, or the question as to what extent the government will be able to tap into VoIP. VoIP could be one of the locomotives of national Broadband deployment. How VoIP is regulated? Canada is currently not regulating VoIP, but regulators are reviewing that. In the EU, there are active proceedings going on in terms of how to address VoIP service providers. Under the EC's directives there has been attempts to eliminate the distinctions between data and voice and between conventional and Internet technologies, but practical questions remain still open.

Theresa Swinehart, General Manager, Global Partnerships at ICANN, outlined very clearly the subject of

*Internet Governance: Maintaining an Effective Model for Technical
Coordination of the Global Internet*

The Internet was set up by the US scientific community with funding from the US government. It was based on a set of community values, which have not exist before and allowed the Internet to grow to the stage it reached to date: participation is open to all who wish to do so; legitimacy determined by open participation and the value of the contribution to the joint effort, rather than power; co-operation, co-ordination and consultation among participants and groups pushing forward initiatives.

The Internet today is 200,000 interconnected networks, involves 10,000's of players from all over the world and is the backbone of the digital economy. Europe, Asia-Pacific and other parts of the world are driving forces in this, but many of the developing countries are coming in line very quickly.

In this context, ICANN was formed in order to deal with the co-ordination of the Domain Name System. The DNS started very early in 1996 and was initially run by 1 person. In 1996 there was a clear indication for change, due to the globalisation and commercialisation of the Internet, the need for accountability and for a more formalized management structure, the lack of competition, and trademark/domain name conflicts. ICANN operates on the basis of its founding principles, which are internationalisation, stability, competition, private and bottom-up co-ordination, the involvement of all stakeholders and representation. ICANN is international in structure having one of its offices in Brussels. The ICANN policy process is open to all who have an interest in global Internet policy as it relates to ICANN's mission of

technical co-ordination of the DNS. The market impact of ICANN's work is quite tremendous and has been recognized recently by the OECD.

ICANN and the question of Internet governance also plays a role in the WSIS process, initiated 2½ years ago by Kofi Annan, which also addresses issues related to the Internet. However, WSIS discussions focus more on how the Internet is used, rather than how it works, and one of the challenges ICANN has actually found, is that not many people understand how the Internet really works or what are the philosophy and values behind. However, it is important to understand how the Internet works in order to ensure that politics do not drive poor decisions. When looking at the political map, the telecommunication system and the Internet to date, it became clear that there are very different models and different means of addressing policies throughout the world. It is not sure that one can take traditional regulatory policies and apply them to the existing infrastructure – in particular when the issues surrounding the existing infrastructure, especially in the WSIS context, also addresses aspects like content protection or Spam. The Internet involves many different players and many different businesses. There has been a working group on Internet governance in order to address these specific issues surrounding Internet governance, with the hope that those matters (content protection, Spam, etc.) will be resolved. There are many governments who would like to see pure governmental control over these issues and others who do not want this.

There is a clear need for a different approach to dealing with subject matters that relate to IT: A model that is transnational, involves multi stakeholders and public-private partnerships, which is flexible in organizational management and reflective of its own regime, and which focuses on effectiveness and relevancy.

François Varloot, Economy & Perspective, Telecommunications Regulatory Authority (ART), France, outlined in a clear and concise way the French situation regarding

VoIP and Regulatory Questions

The first question to be answered by regulators is, whether VoIP is a revolution or an evolution. If it is a simple evolution of technology for an existing service, the first reaction would be to say, that there is no need to regulate it differently. If it is a revolution, the question for the regulator is, what exactly is it: a new service or a new market? This question is very important in France as more than 100,000 people are currently using VoIP at home and their number is growing very fast.

New technologies and new services do not really change the goals of regulation, which are consumer protection, development of networks and services, development of competition for the benefit of consumers, technological neutrality and convergence, promotion of innovation, and coverage. The question for a regulator is rather “what are the most important ones”? Someone defining “competition” as the most important goal will probably come to a different regulation than someone selecting “consumer protection”. In France, there is a slight preference to start with consumer protection. However, if regulation is needed, it has to be done before the market is open, in order to ensure that the rules are clear for everyone.

General regulatory provisions in France are currently foreseeing that there should be no discrimination between the different actors of electronic communications services – “unless proven guilty”. Which means that today VoIP or any kind of voice services over any kind of network should have the same rights and obligations. There is a number of rights given to

every player and a few obligations, such as universal services. In this context it is very important to define where telecommunication stops and where the Information Society starts, because from a purely telecommunications' point of view, at least in France, any actor in the Information Society should be free of obligations, whereas the underlying services and networks are subject to the telecommunications regulations.

Once consumer protection is declared as the most important goal concerning VoIP in France, it is necessary to determine a strategic target to reach, ensuring that a number of features and rights are given to the consumers. In this context the regulator has to answer the question "How to impose a reasonable and proportional regulation in order to allow everyone to reach the target, without distorting the market, stopping innovation or putting companies out of business, and at the same time ensuring a minimum of obligations"?

Once the target is fixed, the question is how to qualify the different actors, in order to know who will be subject to these obligations and who will not. The French approach is to define a service by what the service does, and this, of course requires some practical regulation, before someone can start a business. Once the target is ensured, competition has to be promoted.

Concerning the question, whether to have the same level of regulation all over Europe, France regulators strongly believe that VoIP markets are different and even if every country defines the same strategic objective, each country may propose different ways to reach it.

Christina Speck, Office of International Affairs of the US Department of Commerce – National Telecommunications and Information Administration (NTIA), USA, presented an interesting approach of

Broadband: A US and OECD View

The US President's goal for Broadband technology is to provide universal, affordable access for Broadband technology by 2007. The role of the government is not to create wealth, but to create an environment in which the entrepreneur can flourish, in which minds can expand, in which technologies can reach new frontiers. Part of that, encouraging economic conditions for Broadband deployment in the US, had to be done at both the supply and the demand side and especially regarding the supply side, the taxation environment has to be as encouraging as possible. When looking at the diffusion and uptake of Broadband vis-à-vis other communication technologies, the US is looking at a success story and NTIA will continue to look about what the role of the government is in promoting Broadband diffusion and uptake.

However, often the US is ranked 10th or 11th on charts published for the 30 OECD member countries. This is true when looking for instance at Broadband subscribers per 100 inhabitants, but when looking on access in the US in terms of availability of Broadband or the growth of high speed lines, the situation is more than encouraging. Moreover, the US is actually the largest market in the world for Broadband subscribers. There is a focus in the US about what is the role for government and what is the role for the private sector and the choice of consumers to adopt the technologies and services and also what is the productive and economic use of the technologies. People may choose to use their Broadband for the 3 "Gs", girls, gaming and gambling, but it is not the role of the US government to be involved in. The US is looking at Broadband in terms of a variety of infrastructures that could be considered for providing Broadband and tries to provide an environment that allows each of

these technologies, such as advanced wireless services, Wi-Fi hot spots, WiMax, or Broadband over power lines, to develop in flourish.

The OECD is doing a considerable work on Broadband: 30 Countries participate in the OECD's Information, Computing and Communications Policy Committee which has created working groups on telecom and info services, privacy and security, impact of the information economy, Information Society statistics, and co-operation against Spam. The OECD ICCP Committee and its working group on Broadband regularly publishes comparative statistics, survey papers on market developments and related issues, as well as government and private sector presentations from recent workshops.

Jacques Pomonti, President of the Legal & Economic Committee of the General Council for Information Technologies, Ministry of Economy, Finance and Industry, France, elucidated the

Effects of Convergence on the Responsibilities and Nature of the Regulatory Institutions

Convergence can be defined as the effects or consequences of digitalisation on modalities of visual and sound transmission, treatment and reproduction – from the point of view of the technology, the industry, the economy, culture, behaviour, and rules. The effects of convergence are deep and fast and require new attitudes, new willpower, new rules and new modes of intervention from public institutions in terms of R&D, innovation, industrial policy, in terms of cultural “governance” as well as economic “governance”, that has to be translated in laws, rules, and regulation.

What is called regulation in the “Latin universe”, has nothing to do with the law. Law is what is decided by the government and all the written translation of these legal aspects for specified problems. Regulation is the job of authorities or organizations trying to put an order in all the actors which intervene in the field of communication. In the “Anglo-Saxon universe”, regulation refers both to legal aspects and the control of market aspects.

Impacts of convergence on the economy are the development of new actors, with new positions and roles, new behaviours, new strategies, new dependencies, the shifting or even fading of frontiers, the upheaval of economic and financial valorisations, a tremendous increase in need for innovation and R&D, as well as deep changes in consumption, and in the relationship between supply and demand.

Impacts of convergence on culture concern the disruption of the traditional relationship between the creator and the consumer due to online consumption and downloading, an auto-acceleration of this mode of consumption with the multiplication of new services, and an increasing obsolescence of traditional systems of payment for works resulting in an increased imbalance. Are the rapidity of the development and the density of consumption of these new services a new factor for generating the digital divide? Is it delinquency or are we entering a new mode of consumption? These questions are still open and not easy to answer.

Impacts of convergence on institutions concern laws and rules under the control of governments and parliaments, and regulation – as the necessity to translate particularities and the rapidity of evolutions in rules by either the executive and its administrative branches or by one or two, more or less autonomous, specific authorities. Convergence might lead to a sort of dilemma within the regulatory authorities concerned. What is currently going on in the

field of digital TV in France provides an example for this kind of dilemma: New applications and new services develop and concern the field of responsibility of two different authorities. Such a situation will not remain workable for long. Some attributions of the radio and television regulatory authority (i.e., contents) can not be attributed to the authority dealing with all the services, applications and actors of the communication sector: Should a new institution be created?

And finally, who manages the spectrum in terms of attribution of licences or control? Should it be the different regulatory authorities, implying the potential risk of an absence of a global view and control, and the risk of appropriation? Should it be a unique regulatory authority, implying the potential risk of centralising power? Or should it be a specialised agency linked to the government, implying the potential risks of “over administration” and bureaucracy?

Jean-François Tournu, ICT Technical Director of the Conseil Supérieur Audiovisuel (CSA), France, gave a very specific and original presentation on

Standards Gum Up the Launch of Digital Terrestrial Television

Originally, a standard was a formula with the objective to define a product or a technical process in order to make the production more efficient. Before the deregulation, national governments used to elaborate standards for their own industries. Over the years, these governments joint international bodies like the ITU, in order to make their telecommunication systems compatible and to open their own industry for emerging markets. Under market pressure, ETSI (European Telecommunications Standards Institute), an independent organization, bringing together representatives of governments, operators, and manufacturers, was created in 1998. Progressively, standards became an instrument of power, since controlling a standard represents controlling the rules of the game.

Today, all the conditions for the launch of French DTT are fulfilled: opening for application, authorisation for the very use of television have been granted, frequency planning is completed and the regulation of the analogue television transmitters has been achieved. France is set to launch its free-to-air DTT services in March 2005. However, the delayed launch of DTT in France was caused by the new MPEG-4 H264 standard, belonging to the family of MPEG-standards adopted by ITU and ETSI in 2003. The technical specifications of 2001 makes the use of MPEG-2 in France's DTT mandatory.

The use of the transmission standard MPEG-2 was a controversial issue in the French DTT, because some opponents had lobbied for the MPEG-4 standard, which would accommodate future high definition broadcasts, and criticised the MPEG-2 standard as out-of-date. However, using the MPEG-4 standard would lead to considerable delays in the launch of DTT in France, especially due to the fact that MPEG-4 decoders will not be commercially available by end of 2005. Moreover, adopting MPEG-4 as norm for France's DTT would require a reorganization of multiplexers and the modification of contracts between the different project partners. Additionally, investors naturally disapproved any further delays, due to the huge investments they made.

As a matter of fact, all European countries have chosen MPEG-2 for their DTT. If France would have adopted MPEG-4 as norm for its DTT, it would have isolated itself in Europe.

Jean-François Soupizet, Head of Unit for “International Relations” of the DG Information Society of the EC, [http://europa.eu.int/information_society/index_en.htm], presented a highly innovative approach of

Regulatory Issues and the Digital Divide

In 1984/1985, the concept of the “missing link” referring to a technological gap between countries was applied. Today, a broader approach, including socio-economic aspects of the Information Society, is used - which is the concept of the digital divide.

Usually, countries are compared on the basis of indicators, including a number of e-readiness indicators. A different approach has been used in a recent study, which focussed on the gap between the group of industrialised OECD countries and three other groups of countries, classified in countries with low, middle and high revenues. The study used 7 indicators, among those fixed telephone lines, PCs, mobile telephones, and Internet, and their evolution between 1990-2000. A projection of the evolution of these indicators over this period showed a progress in the OECD countries during this decade. The group of the other 3 countries showed almost the same structure of progress but with very limited movement. This was translated in a gap between the countries. The study also demonstrated stabilization between 1988 to 1997, but a rapidly increasing gap between the OECD countries and the other 3 groups since 1997. This conclusion revealed a kind of paradox, since in the decade 1990 to 2000 telecommunication fixed lines have progressed significantly all over the world, and notably in developing countries due to sector-specific restructurings and foreign investment - nevertheless the gap increased dramatically.

The analysis showed that the digital divide is not just caused by a gap concerning a specific technology or the lack of infrastructure, but that it is “fed” by the rapid succession of technological waves. Thy cycle demonstrates a technology-specific gap in the beginning, than stabilization and than a dramatically increasing gap between industrialised and less industrialised countries due to rapid innovation in the industrialised world. The Information Society is based on rapid progress and the succession of technologies – and convergence is probably the last demonstration of the extraordinary capacity and dynamic of this sector. As a result, the difference is no longer between technologies but between societies being able to benefit from innovation and societies not being able to benefit.

At the same time, convergence is accompanied by more complexity and a dramatic increase of users: more and more newcomers are using IT, such as elderly people, teenagers, or consumers in the developing world. The real challenge regulation, but also the public sector, the civil society and governments, have to address, is to enable new ways of entering the Information Society, such as telecentres, collective access, mobile telephony using prepaid cards, cyber-cafes, public access points, or connected schools, in order to promote mass diffusion of IT-use. The challenge is to create an enabling environment for innovative approaches and making IT-uses reaching a critical mass worldwide.

Xiaohua (Sarah) Zhao, Partner of Holland & Knight LLP, USA, summarized the interesting development of the

China RFID Standards

The current hot topic in China is the Radio Frequency ID-Standard. Even if the Chinese government is still a central control government, China becomes more and more open and

international standards become more and more important to be considered for Chinese regulations.

As far as IDs are concerned, China initially started to regulate on a personal ID basis. In the 1980s, the first product code centre has been established. In 1989 the National Personal ID Code standard has been issued, followed by the National Enterprise ID Code standard in 1990. Finally, in 2003 the National Product ID Code standard GB-18937-2003 has been issued. Early in 2004, the RFID National Standards Working Group has been established. However, a first draft of the RFID standards will probably not be presented to the State Standardization Committee before the end of 2004.

Before (and after) issuing the National Product ID Code standard GB-18937-2003 in 2003, China used to follow the European standard EAN, with the exception of exporters to Northern America, who followed the US UPC standard. Moreover, the Chinese National Product ID Code standard GB 18937-2003 is not compatible with the US or European standard, even though it was designed to have the potential to become compatible with the EPC standard. Even if it is mandatory in theory, only few Chinese companies have registered in accordance to the GB 18937-2003 standards.

Of course, all this impacts foreign companies in China, and if China's RFID standard will not be compatible with the international standard, these impacts are negative. Currently, foreign companies' registration with GB-18937-2003 is not mandatory, but on a voluntary basis. However, domestic Chinese companies are getting more and more involved in the process of defining standards and are more and more supporting international standardization processes.

Olof Nordling, President of the Brussels Office of Telia Sonera, Belgium, shared his long experience in the subject of

Market Convergence and Regulatory Divergence

Telecommunications markets are indeed converging in many senses: "Shorter time to the market" is the rallying call. New ideas are copied very quickly within and across borders - once someone comes up with a new service, it is copied much more rapidly than ever before. New substitution patterns emerge between services, e.g. SMS, instant messaging, voice messages and e-mail is used in a mix depending on the situation, and substitution blurs the actual borders between the individual markets. Consolidation is proceeding again and the goal "any service over any network via any device" is getting closer by the day. National markets may still be different but they are becoming increasingly similar.

In contrast to what is happening on the market in terms of convergence, regulatory approaches diverge. A new regulatory framework has been established in the EU, but there is the concern that it gives more freedom to National Regulation Authorities. The objective of the NRF to establish competition is a good one, but in practice, regulation is still increasing: It is getting more detailed and it is encompassing new areas. Moreover, market analyses and measures diverge and regulation for new services, such as VoIP, is diverging. In spite of the regulators co-operation in the ERG and the Commission's vetting power, it can be concluded that national borders are still prominent, predominately for regulatory and legislative reasons, and a "single EU market" still far away.

To conclude, it can be stated, that markets change rapidly, they converge and there is a new IP-based dynamic. History is governing regulation and it is diverging – and here is a mismatch between the new dynamic and the back-looking approach: a forward-looking approach, taking into account the new IP-dynamics, is needed. Maybe the "Austrian school" of economics could be of some help in this process, since they have a much more dynamic definition of what is effective competition.

Within the concluding **Q&A** part of the session the panellists were asked as to what extend security related aspects are adding complexity to regulation, how to link security and regulation, and how to deal with the problem that communication is global and borderless - but regulation is not. As Mr Huet pointed out, the European Council is looking at security and data retention rules for all telecommunication operators. As far as fix and mobile telephones are concerned, it is not too difficult to supply the required information concerning call identification and localisation, but as far as the IP-world is concerned, this is nearly impossible. There are important security issues to be faced, but it will not be possible to solve these problems all at the same time. Mrs Speck emphasised the growing complexity, the raising number of stakeholder groups concerned and the resulting competing interests concerning this issue. E.g., when the EU adopted a directive for data protection for all electronic communication services, the data retention issue was included. But over the last years, the content industry became more and more involved in the debate of security, what leads to competing interests of data protection and privacy, and it is very hard to find a balance, especially on a global basis. Mr Pomonti called on to look at this question more positively. It is actually not possible in Europe to establish one single European regulatory authority. Therefore the solution is to foster the co-operation between the NRAs and here many efforts have been undertaken. Mr Soupizet referred to the WSIS process, that gave the opportunity to see that different parts of the world have a completely different understanding of what security means. There is risk of fragmentation if there is not a real dialog and a minimum of agreement between various parts of the world.

During the following discussion, Mr Huet raised the question, how it can happen in the US, that currently Cable TV providers have increased their tariffs without adding new services, while Telcos are reducing tariffs by adding more and more services. Mrs Speck answered, that both Cable TV providers and Telcos are starting to bundle services and in both cases prices have been coming down. There are trends towards lower pricing in the US. The key issue is that the Telcos are subject to a higher level of regulation than the Cable TV operators and the level of regulation impacts the entry in the market and the take up of a service or a technology. The US has a very high penetration of Cable compared to other countries. Cable rates are not regulated on a national but on a local level, while telephony rates are regulated on a state level. What have traditionally been two separate vertical regulatory schemes, radically different from each other, are from a consumers perspective blurring with Cable modem and DSL services.

The session's moderator asked the panel to provide a concrete example of cases where a regulatory intervention was particularly helpful in introducing a new technology or service or, on the other side, was particularly harmful. Mr Huet pointed out that there has been a need for some sector specific regulation to create competition. However, as far as emerging service are concerned, he does not know any case where regulation has been helpful – on the contrary there have been examples where regulation was rather harmful, e.g. concerning the introduction of SMS, or examples where regulation had no impact at all. There is a

tremendous work for regulators to do concerning new emerging services in terms of consumer protection or social issues, but not necessarily in terms of competition. Mr Pomonti specified some examples of positive impacts of regulation on the market, such as the regulation of Cable in the US, which has generated a remarkable deployment, or the decision of the US not to tax the Internet. The decision of the introduction of a third operator in mobile telephony in France was also positive, as it represented the start of the market. As an example for regulatory mismatches, Mr Nordling mentioned the case, when the UK introduced the Flat Rate Internet Access Call Origination (FRIACO), a narrowband flat rate. This decision has delayed Broadband deployment in the UK, due to the fact that everybody has been engaged in narrowband. A positive example concerns the extension of the network from Sweden to Denmark over the Øresund bridge. The regulators at the time have been extremely helpful by interpreting the current Danish law, which said that there was a monopoly for the former broadcaster Teledenmark for crossing municipality borders - but according to the regulator, a national border was not a municipal border and thus the network could cross. Mrs Swinehart proposed to look at this question from a layer approach. Where regulation has been successful is in the deregulation areas. Positive decisions have also been taken concerning the Internet, in questions on how to manage content control, or how to manage intergovernmental regulation. In the Intent space, there has been a tremendous growth because there has been the conscious choice not to regulate.

Mr Huet and Mr Pomonti raised the question about what ICANN needs to do in relation to the WSIS debate and whether the WSIS process could lead to a kind of agreement that makes the Internet more internationally regulated. Mrs Swinehart stressed that ICANN is not a regulatory authority. ICANN is a very young organization, which is currently in its last Memorandum of Understanding with the US government. There are 2 years to go, after that ICANN will be a stand-alone organization. In this context, ICANN is moving rapidly for globalisation and will soon have offices all over the world. Governments and stakeholders all over the world are looking for a place to discuss Internet issues. And even if ICANN is not the right forum for this, its implication in the WSIS is important related to this issue. ICANN is a multi-stakeholder organization, reflecting a new kind of model, which might work for other areas as well.

Security: Conflict & Convergence

Building and retaining trust with consumers or citizens is as much as critical for the private sector as for the public sector. This session focussed on approaches for trust building, as essential part of the business, on secrecy laws and practices, and on initiatives and standards for security, data protection, and risk warning.

The session's **moderator**, **Sergio Antocicco**, **President of the Italian Telecommunications Users Association (ANUIT)**, [www.anuit.it], one of the supporting sponsors of this year's Global Forum, opened the session by welcoming the participants and panellists and conducted the panel with all his dynamism and knowledge.

As **chair** of the session, **Peter Van Roste**, **European Policy Director of EBAY INTERNATIONAL**, Europe, [www.ebay.com], one of the main sponsors of the Global Forum 2004, outlined with great understanding the very crucial topic of

Users' Security and Privacy Needs - A Case Study

Privacy and security are probably the most relevant aspects of eBay's business. eBay is the world's online marketplace aiming to provide a global online trading platform where practically everyone can trade practically everything – a part from illegal items. eBay has 125 million registered users worldwide who listed 348 million items amounting to a Gross Merchandise Value of US\$ 8,3 billion in the 3rd quarter of 2004.

eBay allows a buyer to back trace the history of a seller and thus to conclude whether the seller is trustworthy to trade with or not. The number behind a seller's name in the seller's profile indicates the number of positive feedbacks this seller received from different members. Each time a buyer is satisfied with a deal, he/she leaves a positive evaluation for the seller and a short comment. The feedback page is a cornerstone of eBay's success because it builds the trust that leads to transactions. However, there are two privacy aspects linked to that: First of all, the user needs to trust eBay and secondly, there needs to be trust between the parties that they will respect each others privacy rights. The 3 key principles of eBay's privacy policy are: 1) Provision of an open environment that facilitates online trade through trust. 2) Trust is facilitated by the fair information principles, and by providing the users with notice and communication, choice and control, security, authentication and enforcement. 3) Trust is earned with integrity and time.

eBay has been named "privacy champion" in a US trust e-Study in 2003. eBay deals transparently with the privacy obligations, e.g. a user can access a page which lists very detailed all the types of information eBay uses, and also how member's information are used.

However, even as a company trying do its best to stick as closely as possible to the privacy principles, eBay is still facing a couple of issues that in the current legal environment can hardly be solved. Examples are data retention versus deletion – an issue becoming increasingly important especially with regards to the upcoming new framework directive on data retention that the EC is currently working on, or fighting fraud without processing personal data. Protecting privacy is not only about deleting every single bit of personal data:

Providing people with an appropriate protection against fraud is hardly possible if one can not process the personal data of the victim in first place.

The concluding **Q&A** part of the presentation referred to the question whether eBay completely deletes personal data. Mr van Roste answered that eBay deletes the information after a certain period of time but not immediately, because otherwise fraud would be made too easy. The data are deleted completely, however, deleting the data is a very complex process based on the non-reversible encryption of the data, making sure that the information is not readable any more. Another question concerned the use of cookies. As Mr Roste pointed out, these are issues related to personal member settings and can be easily switched off by the member.

As the first speaker of this session, **Tracey Pitt, Chief Executive of ETR²A (European Telecommunications Resilience and Recovery Association)**, UK, presented a unique view of

The Importance of Information Sharing in the Protection of Critical Information Infrastructure

ETR²A is as a non-for-profit company formed by the Northumbrian University in June 2004 in order to address the need to respond to telecommunications weaknesses as resilient telecommunication infrastructure becomes increasingly essential today. Based in the UK, ETR²A aims to extend the understanding of the relationship between telecommunications, information security, disaster management and governance. Emerging from a project, ETR²A has become an international forum for discussion, debate and information for stakeholder groups.

The association will address subjects crucial to telecoms' resilience, such as critical infrastructure, business continuity, risk assessment, risk management, crisis management, security, mission critical system protection, and best practise trough a series of short courses and research in partnership with the relevant universities, schools, industry experts, and associated organizations. One of the questions to be addressed is: now that we have access to all - who is taking responsibility for this access? Who do we turn to, when things go wrong? ETR²A is acting at a local, regional, national, and international level and brings together governments, industry, and academia along with the operators and users.

Information infrastructure is a critical cross cutting factor, which other critical infrastructures depend upon. The evolving information infrastructure is as vital as power and involves telephone networks, Internet, terrestrial and satellite networks. Information sharing is looking at what information should be shared, when, how, why, and with whom. Information sharing is crucial concerning electronic attacks: Once they happen, they have to be reported quickly so that they can be spread. Currently, this information is being collected by different dispersed organizations, such as CERTs, WARPs, UNIRAS, or ENISA. CERTS are information sharing organizations within industry sectors or in business or governments, but they do not tend to share their information outside their specific area. WARPs are Warning, Advice, and Reporting Points which are a lower level of CERTS and do not offer technical advice on how to solve a problem. UNIRAS is located in the UK and is one of the organizations that collects data on electronic attacks and then makes it available to other CERTS and WARPs. ENISA is the recently formed European Network Information and Security Association. ETR²A is currently working on putting together a local government WARP in the north-east of England. This specific WARP will warn, advice, and report on electronic attacks within local governments. WARPs are a UK-Government initiative with

links to international communities. When a report comes into a WARP, the reporters then anonymize and synthesise so that the information can be shared within the community. A WARP promotes best practice, increases awareness, and increases resilience.

Arvo Ott, Head of Department, State Information Systems, Ministry of Economic Affairs and Communications, Estonia, presented the interesting subject of

Trust and e-Security in the Framework of National ICT Architecture

The most important factors of security are organizational aspects and the human factor. The experience made in Estonia showed that in most of the cases where something went wrong, human errors have been the cause and not the technology as such .

Estonia, counting 1.356 million inhabitants, has build a certain level of trust in using e-Services and some basic concepts of e-Security are put in place: Today, 54% of the Estonian population uses Internet, 35% have their own home computer, 100% of the public employees have a workplace with Internet connection, Estonia counts more than 740,000 Internet-banking clients, and 59% of the tax declarations are filled online.

The private sector (banks and Telcos), was the driving force for building trust in Estonia, at least in the beginnings. Based on the trust established 10 years ago, the public sector is following and now starts offering a wide range of services. When Estonian banks started using ID-cards for the identification of users, this was regarded as an option for the public sector to use these ID-cards to provide access to public services. As banks have been interested in offering additional services, this was an advantageous strategy for both sides. Banks are offering the ID-cards free of charge for the public sector. The first Certification Agency in charge of the certification of the ID-cards was a joint venture between banks and Telcos. Today, PKI is implemented and more than 600,000 ID-cards were issued to give Estonian citizens access to various services.

The approach of Estonia is to use ID-cards without applications on it, i.e. an ID-card only serves for identification purposes and the digital signature. The idea is to put the infrastructure in place and to provide the key to access systems in order to get the services - and not to put services on ID-cards. On the one hand, this approach avoids to have different smart cards for different services in the longer term, on the other hand it is strongly related to security aspects: Once there is one single ID related to different services, the security risk rises, but at the same time reality shows that people are much more willing to give their access codes or passwords to a third person if this code is related to only one service. If the ID is related to multiple services, and especial to mission sensible services such as Internet banking, they never pass on the ID to others.

The concept of Estonia is to build a national ICT-infrastructure which shares security between different organizations, including private businesses, leading to a sort of self-control of the system. An important issue for establishing trust and security, is that the citizens should know what their data are used for.

Patricia Cooper, Chief Regional & Industry Analysis Branch, Federal Communications Commission (FCC), USA, gave an insight in

Security Policy: The U.S. Experience

Network security addresses the security and reliability of the physical US telecommunications and media networks from natural disasters or man-made attacks and the role from the regulatory perspective is to provide the regulatory framework for protecting and increasing the reliability of this physical infrastructure.

Networks are very complicated in competitive markets. There are hundreds of companies in the US that operate physical networks. Additionally, there is a larger range of perceived threads. For the telecom world, the US approach to address network security is an entity called Network Reliability and Interoperability Council (NRIC). NRIC is an advisory committee to the FCC. Originally chartered in 1992 in the wake of major service outages, NRIC was re-chartered in January 2002 to focus on homeland security issues and include wireless and satellite systems. The main role of this entity is to assess what the vulnerabilities and threads are for the physical telecommunications network, to draft best practices for the actual operators of these networks to undertake, and to share these recommendations with the regulator - the FCC. NRIC works in partnership with industry, federal, state and local government and interest groups. This partnership has created four working (focus) groups on physical security, cybersecurity, business continuity and disaster recovery, and public safety. The outcome of these focus groups are best practices, which are meant to provide guidance for the operators on what they should do to improve their network security. This is all voluntary and compliance with those best practices is also voluntary.

The FCC has regulatory authority also over the media sector in the US. In 2002, the FCC established a comparable entity, the Media Security and Reliability Council (MSRC) - to address broadcast, cable and satellite homeland security issues in the US. Their objectives are very similar to those of NRIC but address a different slice of the telecommunications industry. Moreover, they focus a little more heavily on interruption in services and maybe a bit less on the homeland security aspect. Members of MSRC are television and radio broadcasters, satellite and cable broadcasters, satellite operators and infrastructure operators, user groups, and industry interest groups. Similar to NRIC, MSRC has two working groups: One on public communications and safety, and one on communications infrastructure security, and access and restoration. They also come up with guidelines that then are provided to the FCC. Their working process is similar to NRIC. MSRC is also industry-led, and identifies threads and best practices, and both entities are open to participation by user communities.

An important aspect concerning the best practices developed by those two entities is that they should be both effective and easily implemented by companies. The FCC is aware of the limits of that sort of voluntary approach of best practices: Not all best practices are appropriate for all service providers or architectural implementations, and they are not meant to be mandatory. Even if the FCC's regulatory mandate includes the security of US networks, the FCC has chosen to address network security through voluntary standards, developed by the private industry. The FCC is just one component of a complex network of public and private entities, partnerships and organizations seeking to improve the security and reliability of the US and global communications infrastructure.

Jens Sörvik, Project Officer at the International Organisation for Knowledge Economy and Enterprise Development (IKED), Sweden, [www.iked.org] – one of the supporting sponsors of the Global Forum 2004, introduced the remarkable

Global Trust Center

ICT is the key enabler of the knowledge economy, however security is one of the keys allowing ICT to be beneficial. The Global Trust Center is a project IKED is working on since 1,5 years. The Global Trust Centre is both a study on trust issues in digital transactions as well as the creation of a network, that will work as a clearing house in digital transactions.

The worldwide ICT market is continuously growing, especially in the developing countries. Firms get involved in digital transactions to increase sales or to make their production more efficient, governments get involved in digital transactions in order to provide more and better services, 24 hours/day, to reduce cost and become more efficient, consumers get involved in order to find information, and to consume more and better. The number of digital transactions is increasing across the globe and the underlying important aspect is security. However, there are challenges and risks in connection with data confidentiality, availability and integrity, with consumer and merchant authentication, the non-repudiation and liability in the case of fraud, or the costs coming along with a failure, and finally interoperability requirements. The main response to these risks is to establish an infrastructure for identification and authentication. In this context, there are different technologies and different complexities which are appropriate to reduce risks and threads. There are technologies like user names and PIN together with SSL, there are systems for shared information – based on information from different kind of data bases, and there is PKI and biometrics.

The Internet is a global phenomena and it is difficult to find an identification infrastructure which provides security at a global level. In this context trust is important to overcome problems. There are currently a number of different national and banking initiatives that have been rolled out for identification and authentication. However, there is a fragmentation in the market – there are many different sectoral, regional and national initiatives and these solutions are quite complex and costly. It is important to find a balance between sharing right infrastructure costs and making it work over borders in order to make it roll out and break through. There is also a lack of consumer incentives versus costs: if the technology is too costly for the consumer, he/she will most likely not start using it. Furthermore, there is still a deficiency in the implementation of standards for interoperability and cross-certification. The problem is, that most solutions are implemented based on a top-down approach. The Global Trust Center bases on a bottom-up approach inviting all kinds of actors to participate and to provide the technical solutions to overcome current problems. The Global Trust Centre should work as a network with local nodes in different regions around the world in order to facilitate a dialogue between the technology providers and the governments who will use these technologies, but also to exchange experience between different kinds of sectors. The Global Trust Center will not develop any proprietary technology but will provide a platform for those having the technology and provide it to others. The Global Trust Center is also trying to bridge between different solutions.

Neil Edwards, Managing Partner of Xian Group, USA, addressed the important question of

Will Traditional Security Companies Survive the Wired to Wireless Convergence Revolution?

When looking at all the different devices people have today, it becomes obvious that in some cases, mobile devices offer more features or Internet capabilities than a laptop. However, security is not in line with such a development – most devices still have user names and passwords or user names and PIN. Especially wireless devices becoming more and more sophisticated do not have enough control or protection systems. Regarding authentication and digital certificates, it is for instance common practice for any commerce in the wired world, to have a digital certificate, so that people know when sending a name or a credit card number to a server that the information is scrambled and nobody can read it. However, solutions for encryption do not work very well in the wireless world up to date. What one can see is that a lot of trust platforms, such as certified download centres or virtual private networks, in the wired and the wireless world are build.

What is happening right now and what will revolutionise a lot of things, is that barcodes will be replaced by RFID-codes in the coming years. RFID-codes allow to use a reader, that will read the frequency and that will then use the Internet to access the manufacturers' data base in order to do inventories automatically. The consumers application which is actually being tested in this context, is to use mobile phones as readers to scan the products. This means that the phone would read the electronic product code tag and then takes that tag, uses the Internet, and goes to the manufacturers data base who recognises that this code was sent by a special GPS coordinate. Such an application makes a new use of the Internet by passing personal information on the Internet – but without any security around this.

However, both public and private sector are trying to react to this increasing demand for security. Security industry trends to support convergence are that companies around the world are increasingly building out trust platforms, or that PC-based technologies are being ported to support wireless devices. Governments are developing new privacy and security laws to protect consumers, and new industry security standards and policies are in development.

Key challenges still to be addressed are that security innovation has not kept abreast with aggressive wireless product innovations. Security threat will grow faster as wireless devices continue surpass PC usage on IP networks. Moreover, industry and governments must work closer on a global basis to develop more protections for consumers.

Maury D. Shenk, Managing Partner, London Office, Steptoe & Johnson, UK, [www.step toe.com], one of the supporting sponsors of the Global Forum 2004, gave a very clear and concise insight in the

Liability Risks for Security Breaches

Liability is a means to promote better corporate behaviour. The major reason companies do not worry about the externalities of their security decisions is that there is no real liability for their actions. Liability will immediately change the cost/ benefit equation for companies, because they will have to bear financial risks borne by others as a result of their actions.

One of the primary basis on which liability can be created is statutes, regulations and legislation. There is a number of EU directives to be implemented in the EU Member States, such as the Data Protection Directive and the Privacy and Communications Directive, being one of the broadest liability directives in the world. They apply to “personal data” associated with an identifiable living individual. Article 17 of the Data Protection Directive requires “appropriate technical and organizational measures to protect personal data against accidental or unlawful destruction or accidental loss, alteration, unauthorized disclosure or access”. Article 23 on liability provides the right to sue. The more recent Privacy and Communications Directive applies to data protection principles related to electronic communications services. Its Article 4 on security is similar to Article 17 of the Data Protection Directive, and also requires that “[i]n case of a particular risk of a breach of the security of the network, the provider of a publicly available electronic communications service must inform the subscribers concerning such risk”. The liability rules are referred to those in the Data Protection Directive.

There is also liability in the US which tends to be sectoral. For instance the Gramm-Leach-Bliley Act, which relates to the security of financial institution customer information and imposes obligations on banks to keep financial information secure. However, this it is only enforced by the government and there is not the right to sue as under the Data Protection Directive. There is a similar statute to impose security of health information: the Health Insurance Portability and Accountability Act. California, which is the most important of the 50 US states in the area of liability, due to its size, technology industry and legislative activism, passed a couple of statutes over the last 2 years: One of them requires disclosure of security breach that compromises unencrypted personal information of California residents and provides a private right of action. A second statute, passed in 2004, requires any business (other than financial or health) that “owns or licenses” personal information of a California resident to “implement and maintain reasonable security procedures”, and also provides the right to sue for that.

Two other basis of liability are contracts and torts. A contract declares responsibility for what is agreed, either explicitly or implicitly. Statutory duties can be implied and companies can be sued for negligence.

There have been few significant cases so far – almost none in Europe and a number in the US. Nevertheless this is something to worry about. Following “best practices” may be the best defence. Companies do not want to be a “poster child” for bad security.

The concluding **Q&A** part of the session concerned the access of third parties to personal data and the liability of ISPs. Mr Ott stressed that civil servants may access specific data if they are allowed to do this by the law. For instance, if the police in some cases has the right to access personal data, they can obtain these data but only in the context set out by the legal framework. Concerning ISP-liability, Mr Shenk pointed to the fact that the e-Commerce Directive has some important exceptions on ISP-liability for hosting peoples’ information. These exceptions will limit ISPs’ liability with respect to other parties information, i.e. ISPs will be liable for information on their own subscribers but much less for information that they host.

Another question referred to whether there are any moves to transfer liability to ISPs or to the manufacturers of software knowing that they put software on the market that is not secure? Mr Shenk answered that ISPs are probably liable for the security that they advertise, i.e. if

they offer a secure network and they do not provide it, but probably not for providing a service. Software as an unsafe product is an open question and most likely one of the main reasons for software manufactures to disclose their liability. Concerning the question of whether the UK tort law is comparable to the US tort law, Mr Shenk answered that both are very similar and have a common heritage.

Being asked if the citizens' use of the smart card is imperative, Mr Ott clarified that the user can choose whether to use it for banking or not. However, the public sector is offering a complex set of electronic services, In this context it should be avoided to have many different mechanisms in order to ensure the combination of services. The ID-card is issued national-wide and may be used by every citizens, but at the end, it is up to the citizens to decide whether to use it or not.

... DAY TWO

... OPENING SESSION

... DAY 2 – MORNING – PLENARY SESSION

The **moderator** of this opening session on the future of ICT innovation in the broad convergence, **Sylviane Toporkoff, President of the Global Forum and Associate Partner ITEMS International**, France, welcomed the panellists and participants.

The **session's chair, Hubert Fabre, Secretary-General of the Politech Institute**, France, [www.politech-institute.org], which is one of the supporting sponsors of the Global Forum 2004, briefly introduced the context of this opening session: The focus of the first day of the Global Forum has been the broad convergence principle, different access modes, infrastructure models, market implications, content, and regulatory aspects. During this second day, the broad convergence will be considered and evaluated under the angle of R&D, public policies at different levels, especially for local and regional authorities, as well as public-private partnerships and community aspects. In this context, the composition of this opening panel, bringing together representatives from the public and the private sector, specialists from business and the technological branches of ICT-convergence, as well as from public entities, ensures a good transition between these two days and their approaches. It is in fact the illustration, that broad convergence is not only a question of infrastructures and technologies, but also covers the convergence of the actors working together to promote the knowledge based Society.

As the first speaker of the session, **Patrick De Smedt, Chairman, MICROSOFT EMEA**, [www.microsoft.com], Belgium, one of the main sponsors of this year's Global Forum, presented with great expert knowledge the fascinating topic of

Enabling the Knowledge Society: Partnership and Innovation

As the Lisbon agenda shows, enabling the Knowledge Society is one of Europe's top priorities. It is important to start with a vision and to believe that ICT has a positive impact on the society. In this context, 6 areas where ICT is indispensable for a Knowledge Society can be identified: ICT is one of the most important drivers for economic growth - directly, towards the ICT-sector, as well as indirectly by enabling other sectors to become more effective, innovative and competitive. The technology industry helped to drive globalisation; today the industry itself is going global. Technology certainly changes the nature of global competition. The public sector represents a large share of the GDP and productivity, efficiency and process changes in the public sector itself can make a great contribution to growth and competitiveness. SMEs represent 2/3 of the Europe's economy and employment and are key drivers of the economy. We can not afford a "digital divide" for SMEs. Moreover, some 70 million Europeans are more than 55 years and older and the aging curve is increasing. To maintain a dynamic economy and an inclusive society, "active aging" is needed: longer and part-time work towards flexible workforce arrangements, community involvement, and access to services. ICT is indispensable in this respect. Finally, to close the e-readiness and the growth gaps between Europe and other countries in the world, increased investment in R&D and innovation is required.

Innovation is at the core of the PC-software industry and different waves of innovation can be observed. Each wave goes through the 2 phases "development" and adoption". During the first phase in the 80s, a lot of research and development was done, the PC-architecture has

been developed and a lot of Intellectual Property was generated, but what really lead to the adoption of the platform or the PC, were killer applications such as word processing and spread sheets. The adoption resulted in more PCs sold, decreasing prices and a larger market for applications. A kind of virtuous cycle, continuing on itself, has been initiated. The adoption of a platform is not really driven by the development itself but by customer benefits. The next wave was characterized by new technologies building on top of the existing ones. Thus, it was not a revolution but an evolution in innovation, with graphical user interfaces, mouse, or client-server computing been developed. The innovation curve got up again and the virtuous cycle was once more initiated. The next wave has been the Internet with the two killer applications: e-mail-clients and the browser. Today, only half of the possibilities of leveraging the Internet are exploited and there are huge opportunities for further innovation.

To make innovation work, a strong enabling framework is needed: Broadband infrastructure for citizens, a safe online environment, research incentives, open standards, IPR rules and enforcement, and investment in education and lifelong learning. At the centre, partnerships between governments, industry, academia and investors are of crucial importance.

Within the concluding **Q&A** part, the question about Microsoft's reaction on Linux and OSS has been raised. Mr De Smedt stressed that there are different dimensions to address this question: OSS implies another development process. This is an interesting concept, where a large community of users and developers provide feedback and build products together. The goal is really to increase the quality of a product. This is a good concept, which Microsoft is implementing in its strategy. However, there is a certain number of challenges of this approach: the risk of fragmentation, the risk of accountability, the challenge of integration for companies and users, and the complexity of the task for the end-user. Microsoft focuses on a concept, called "integrated innovation", which is based on the question "how much features and functionalities have to be integrated in a platform to reduce the complexity for the user". Moreover, there is a difference between open source and open standards. Microsoft is going for open standards, in order to make sure, that a platform is transparent and that all players can interoperate. Finally, to create a healthy ICT-Business, Intellectual Property Rights are essential.

The following question concerned the upcoming technological trends and the potential for innovation in the future. As Mr De Smedt pointed out, there is no immediate end of innovation. If looking on the next 10 years, there are more opportunities for innovation than in the past 50 years. There is still a huge potential. It is also important not to go into a feature contest, but to look at the benefits and the business value all these technologies provide for the customers. More innovation has to be made in the sense to make wise usage of the technology and to improve customer relationship as well as to streamline processes with the partners. If looking at the emerging technologies, certainly interoperability, security, user interfaces, speech, and natural language processing are important areas for innovation - but also the aspect of leveraging Information Technologies to other areas of science.

Jørgen Friis, Deputy Director General of the EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE (ETSI), [www.etsi.org] one of the main sponsors of this year's Global Forum, presented a specific and remarkable view:

From Innovation to Market Deployment: Where (and How) Standardization Fits?

ETSI is no regulator even if standardisation in general supports regulation. ETSI is an independent non-for-profit organization, owned by its members which is basically the

industry. ETSI provides international standards, especially in the areas of ICT, broadcasting, radio communication, and traditional telecommunication.

Standardisation has a tremendous impact on the society. 80% of the world trade is affected by standards. There are many reasons why the industry wants to participate in standardisation – the most important one is to create a more favourable environment to make business, and thus to make profit. Another reason is about being seen as a market leader. There are many good reasons for the industry to work with standardisation, however, standardisation also concerns potential areas of risk, such as IPR, enables the industry to participate in open processes in order to achieve consensus and to assure interoperability between the products.

Innovation can be classified as follows: Sustaining innovation is innovation that improves the performance of existing technology on a trajectory demanded by its customers. Discontinuous innovation is an innovation that requires changes in user behavior and the underlying support infrastructure of the industry. Disruptive innovation is innovation that addresses the needs of a value-network not currently addressed and has the potential to move into an established value-network thereby disrupting that industry. Disruptive innovation is a big challenge – for the industries, but also for standardisation bodies.

Another important issue is the timing about when standardisation enters the process and when research turns into standardisation work. When starting research in a research lab, the last thing people want to hear is about standardisation, but once a certain point is achieved, standardisation is needed. Standardisation can facilitate to bridge the process from early research to a mature product. ETSI is currently involved in a project called “Copras” which streamlines the interface between standardisation & research.

Some more information about Copras have been asked during the following **Q&A** part of the presentation. Copras is an important project which also becomes a reference within the European Commission. Copras, “Cooperation Platform for Research & Standards”, is a European project, funded within the 6 FP. Copras basically oversees all the projects that have been accepted by the EC to receive funding and looks at how these projects can interact with standardisation and how the results of these projects can be fed in the standardisation process. One of the main project’s outcome is not just to create interaction and action plans, but to come up with a guideline for future projects on “how to interact with standardisation”.

Kathryn Brown, Senior Vice President, Public Policy Development and Corporate Social Responsibility, VERIZON COMMUNICATIONS, USA, [www.verizon.com], one of the main sponsors of the Global Forum 2004, gave a captivating insight in

Deploying Broadband: the Infrastructure of Innovation

In the US, Broadband is considered as the innovation infrastructure and an enabler of innovation. There are two main trends: speed and mobility. The number of access lines in the US is going down on the landline side, while the number of users, minutes and innovation on the wireless side increases. In 2006, there will be more subscribers on the wireless than on the wireline side. On the wireline side, a shift from slow to fast has been observed: At the beginning of the Internet age, there has been an increase in the number of traditional wireline access lines, which is now decreasing as Broadband lines take their place – both Cable, DSL, and FTTH. Verizon is today the number 1 wireline service provider in of the US, the

number 1 wireless brand, and the world's number 1 directories publisher. Verizon is leading FTTH-provider in the US and is leading the wireless Broadband in industry with its new product "iobi".

However, the laws in the US are still "stovepiped" and do not reflect the new technologies. The objective is to get one clear policy for the development and investment in Broadband technologies. Similar to Europe, the US has 51 jurisdictions that can and may regulate in different ways. The US has to move very quickly towards a Broadband policy which is a light regulatory policy – no legacy regulations, no unbundling, but an open platform with connectivity principles allowing any user to reach any other user in an open ended platform. Clear rules on taxes, fees and surcharges imposed at any level of government are needed, and the update of the remaining regulation of narrowband services is a critical role for state governments.

The principles proposed by the US's High Tech Broadband Coalition are: to encourage a maximum investment and innovation, and apply only to light regulation to Broadband where needed. All Broadband participants should embrace a set of connectivity principles to ensure that consumers can gain access to any content on the Internet, run the applications they choose, have adequate information regarding their service capabilities, and attach any devices to Broadband connection that do not harm the network. Regulators retain general statutory authority and can step take action enforce principles and protect public interest.

Good public policy is a platform for innovation. In this context, the government needs to step back, allow the technology to move ahead and thus to develop the next cycle of innovation.

Within the concluding **Q&A** part of the presentation, the question raised, how often a company has to develop a new technology to stay competitive. As Mrs Brown pointed out, as far as network technology is concerned, it takes a while for these innovations to be developed, to be standardised and to come to the market, especially because there are still too many regulatory and bureaucratic burdens. The government must allow network technology providers to get faster. The second area of innovation is in the application field and here innovation can be done very fast. The faster the people who use platforms innovate, the faster network technology providers are forced to innovate. This cycle is what needs to be "greased" and it needs to move a lot faster.

John K. Barker, Assistant Deputy Commissioner of Competition, Industry Canada, presented a clear and forward-looking view on

*Technology, Deregulation and Globalization: Impact of Broad Convergence
on Competition and Citizens*

The challenge of competition agencies in the context of new technologies, innovation, and broad convergence is to adapt this market evolve and to respond as new forms of competitive behaviour appear on the market place. Technology impacts our lives, the way our market operates, and the nature of competition. The task of competition agencies is to make sure that innovation meets the communities' values and standards and provides benefits for all, and in particular to ensure that evolving markets have a legal framework for producers and consumers, that enables competitive prices, product choice and quality service. If looking at the way market structures evolved over the time, it becomes obvious that they have evolved to meet societies changing needs. Centuries ago we had an agrarian society, where those who produced sold to those who consumed in a direct relationship.

As the world moved to more capital intensive multi-production, we became involved in more complex transactions and the role of intermediaries was created. Industrial development caused the creation of large clusters of people, cities, and towns - leading to greater product choice, better market information, and greater numbers of buyers and sellers. When thinking of the impact of globalisation, we got greater markets connecting us, a kind of instant product and price information, and large pools of potential buyers and sellers. The IT-revolution had been bringing us back to something that is similar to the old town hall market place with many attributes of a town square. eBay, for instance, is bringing together buyers and sellers directly, they are physically dispersed but technologically connected, they share a common language and meet at a central market place. A competition agency has to look at these constantly evolving market forms and structures.

These types of developments are both welcome and enabling for consumers, but for a competition agency, this technologically driven redefinition of economic clusters comes along with very complex questions vis-à-vis competition in this new environment. The new borderless markets eliminate many of the protections previously provided by national jurisdictions and create new problems and challenges for the enforcement of domestic laws. Every new technology brings with it the need to protect community values and standards, which are in Canada to ensure a competitive market place and to ensure that all Canadians can enjoy the benefits of competitive prices, product choice and quality of services.

Many new technologies allow those who wish to engage in anti-competitive behaviour to avoid jurisdictional controls. This leads to an increased need for international co-operation and the Canadian competition agency is working closely together with its homologues all over the world as well as with international fora such as the OECD or the International Competition Network. To remain effective, competition agencies must understand and respond to changes, for instance, by developing special forensic software, or by staying in constant touch with industries and associations to understand how markets are changing.

The **Q&A** part of the presentation, addressed the fact that competition in the field of telecommunication seems to be more “civilized” compared to competition in the audio-visual field. The question raised whether this situation is the same in Canada. Mr Barker answered, that the situation is rather the same and stressed once again the necessity for a competition agency is to work with industry participants to understand their views of the future. A competition agency needs to know who is in the market today, but also to understand where competition is developing - which might be individuals, new technologies or trends. A competition agency needs to be neutral and independent but at the same time it has not to cut of itself from the knowledge that it needs to remain effective.

John Gage, Vice President & Chief Researcher of SUN Microsystems, USA, as a visionary outlined

Identity, Security, and Governance: ICT Innovations and Applications

The FCC is still organized by the sections of a law passed in 1934: there are different individual groups organized by statute to deal with broadcast, telephone or cable - even if all of us know that packages travel over any of these pathways. There are 2 fundamental issues that underlay all of the restructuring of competition agencies and businesses; issues that are joined in an interesting and new way: Identity and IPR. The issue of identity specifically addresses the identity of a person, of a piece of information, such as movies or songs, the identity of a criminal, or of physical objects. Identities can be traced by web browsers or

mobile phones. Discussions on IPR are usually centred on the music and movie industry. One of the main concerns of the movie industry, the music industry and the software industry is to try to force laws that would have every piece of IPR report home to retrace identities. This trend is merging with the change in the national security environment: During the last 2 years, national governments more and more focused on national identity cards allowing to trace back identities more efficiently. To some extent, there is a crisis caused by the conjunction of the issues of the IPR crowd and the national and domestic security crowd on the issue of identity - but the issues are being fought in very different areas.

Moreover, markets are subject to complete changes: The online real world sales of virtual resources gained within multiplayer online computer games has surpassed 100 million US\$ worldwide - and the real figures are likely to be much higher, as China and Korea, whose virtual worlds are booming, are not included in this survey. This means that synthetic worlds influence the GDP of countries. Who regulates this? Nobody. Nevertheless, one has to be pay attention with statements that the Internet is the beginning of possibility of crime. All crime is possible with any kind of communication media. In 2003, the amount of money spent on ring tones was between 2.4 to 4 US\$; in 2004 it is expected to reach 4 to 6 billion US\$. Why do we care about the music industry, when on 6 November 2004, the "Billboard Magazine", a central magazine of the movie and film industry, starts a chart on the most popular ring tone? These kinds of changes are occurring very rapidly.

New aspects raise in this convergence of Intellectual Property and national security: DNA, used for instance for criminal forensic analysis, can be taken easily from everyone. As one knows that the male chromosome comes from the father, it is possible to source people and to associate peoples identities in generations. Identity begins to become a most fundamental issue. Each of the billions of cell phones has a unique identity, each smart card has a unique identity - today it is possible to insert unique identifiers in DNA. Those thinking that those who push laws to protect music companies from having their music copied are the thought leaders in what should be done to protect privacy or anonymity, shall think again. The music or the copyright people should not be the ones making the policies that affect this world we are rapidly moving for. No regulator can control this; all we can do is to do our very best to understand what our values are that should then be reflected in public policy.

During the **Q&A** part the question about the meaning of international security for policy makers raised. Mr Gage proposed to bring together in the next Global Forum a panel that includes life scientists, the DNA-people, the military and police entities and have a conversation that lets these values emerge and to rethink and discuss the mechanisms that are currently in place for those to protect us.

Hisham El Sherif, Chairman & CEO of IT Ventures, Egypt, gave a different and passionate view on

The Convergence of the Global Information and Knowledge Society: Progress and Challenges

We live in a world of 6 billion people who are geographically and politically divided in more than 220 countries over six continents; each of them with its social, cultural, economic and regulatory environment. The average annual income in the developed world is US\$ 27,854, while the average in Africa is US\$ 1,690. The number of people living from less than US\$1 per day is 0 in G8 countries, while 291 million people in Africa do so. More than 50% of the

people in the world have never made or received a phone call. Internet penetration in the US is 75%, while it is less than 4% in the Arab world.

The technological revolution, speed and diffusion resulted in a stronger focus on ICT and less on content and its use. The transformation towards an Information Society is usually built upon seven pillars: People, ICT, data (content), business systems, application, information, and policies. The absence of one of those pillars impedes the speed of such transformation. Moreover, the evolution of an Information towards a Knowledge Society requires knowledge based institutions and “knowing” citizens. It implies, by definition, quality of education, lifelong learning, functional and technical skills, cultural understanding, multilingualism, and openness, tolerance and flexibility.

However, there are several main barriers and main challenges in this transformation process:

- 1) The right paradigm rather than the right slogan needs to be adopted.
- 2) Leadership, that understands the multidimensional nature of such paradigm and the complexity and interdependence between such dimensions.
- 3) The focus and bias to one or more of the seven pillars rather than addressing them in their totality...comprehensively.
- 4) The regulatory environment and process deregulation, including the management of the processes, its transparency, fair rules and involvement of the private sector.
- 5) Access, not only to technology, but also to information and knowledge.
- 6) The growing digital divide coupled by an abrupt political divide.
- 7) Politically non-democratic regimes where reform is secondary to status quo. By definition, democracy, information, market economy and knowledge are connected.
- 8) Information is development and knowledge is growth. The results agreed upon within the "Millennium Development Goals" declaration and its related implementation show, that accelerating development in relatively poor third world countries is still a wish rather than a national strive.
- 9) In many countries of the world, digitisation and data capturing at institutional level, governmental and/ or private, still represents a major challenge.
- 10) In many countries business process engineering or even business systems in its basic form still seem to be in its infancy.
- 11) Value proposition for the use of Internet in e-Education, e-Health, e-Tourism, the e-Society and e-World is yet to materialise.

Is this world really converging towards an Information and Knowledge Society? In any case, the starting point is to empower the new generation with knowledge to help shaping a better and happier world.

Innovation and R&D in Public/ Private/ Defence Sectors

Within the overall context of convergence, the session focussed on defence and security by analysing the possibilities, the expected impact and potential priorities of dual research activities and programmes related to security and ICT in order to raise the effectiveness of R&D activities and funding. Further issues addressed in this session were the relationship between industry, universities, and research organisations, as well as the necessity of risk mutualisation and funding to promote entrepreneurial dynamism in order to shorten the time to the market of innovative developments.

The **chairman and moderator** of the session, **Senator Pierre Laffitte, President of the Sophia-Antipolis Foundation**, France, introduced the session's topic, which is basically related to research and security problems. Up to date, defence on a common European level was considered as a taboo. However, the time is ripe to think about the possibility to have a kind of common development in the field of internal European research and security, such as the fight against terrorism and criminality, but also in the field of external defence. Such an organization could also provide the possibility for common research, which is one of the main issues Senator Laffitte is fighting for. It is important for a democracy to be able to defend itself and it is necessary for both sides of the Atlantic to have some common work on security problems, here included also the aspect of privacy.

As the first speaker of this session, **Jean-Louis Lacombe, Vice President, Technology and Innovation, Industrial Research and Technology, EADS**, [www.eads.com], one of the main sponsors of the Global Forum 2004, summarised

Technology and Innovation in EADS: New Challenges

Innovation is a challenge, but has to be clearly defined. Innovation is not about being the most intelligent company or country but being the one most responsive to change. EADS is a fairly young European company, consisting of actors from Spain, Germany, and France. EADS today is the second-largest group in the global aerospace and defence industry, with a unique range of products and services.

EADS currently faces the challenge of entering new markets and the growing demand for providing new financing options. The company in particular has to address the government's demand to move from the offering of products to the offering of services. Innovation is provided through R&D and EADS has a balanced system of decentralised and centralised R&T and R&D resources, co-ordinated by the EADS R&T Network. 16% of the company's revenues are spent for R&D.

Core competencies of EADS are in the field of materials & processes and advanced manufacturing, engineering, Microsystems, image processing, systems engineering, and standardisation. The key issues of EADS's R&D activities are virtual product engineering, intelligent systems, advanced engineering, and smart products. EADS's priority is to become a leading system and solution provider, and in order to do so, the company has to achieve a strong competitive position, become a global company and better manage cross-sector synergies. Currently, the company's annually spending amounts to 5 billion € for R&D and 450 million € for R&T.

Within the military domain, EADS has the goal to better equilibrate civil and military activities. There are a lot of new opportunities in this field, mainly coming through the concept of “netcentric warfare”, as a way to improve user information and processes, as well as accuracy and effectiveness of a product.

Concerning innovation in Europe, EADS fully supports the Lisbon strategy to improve the capability of Europe to extend innovation, as well as the objective to increase R&D effort up to 3% of EU's GDP by 2010, an increased budget for EC FPs, a coherent framework to foster competitiveness and contribute to Europe's economy growth, and an action plan for innovation between the European Commission and the EU Members States.

Whereas a company is in charge of development, R&D implies several actors, such as industrial R&T, research organizations and universities. EADS tries to extend its activities in industrial R&T in order to better cover long-term issues, while at the same time trying to convince universities and research organizations to cover a larger spectrum of R&D. There is a need to have a better scaling in terms of objectives between research, universities and industry, as well as to improve the transfer processes between these R&D actors. EADS intends to become a global research partner and is developing partnerships with the US, Asia, and Russia. EADS's innovation policy focuses on innovation promotion and monitoring of technology intelligence, benchmarking of key technologies and innovation trends, and the co-ordination of Intellectual Property.

Within the **Q&A** part of the presentation, the question was addressed, how to foster the mentioned relationship between industry, universities, and research organisations? As Mr Lacombe stressed, the priority is to better secure the link between these organizations and to establish long-term partnerships. The goal is not a case-by-case negotiation with good teams, but to rely on established partnerships. However, for establishing partnerships, one has to be sure that the partner is the best in the specific field and that the co-operation will last a longer time. As far as EADS is concerned, the organization in France is very different from the one in Germany or Spain and EADS, as a European company, has to find a general approach which is valid and effective for all countries.

Jacques Bus, Head of Unit of ICT for “Trust and Security” of the DG Information Society of the EC, [http://europa.eu.int/information_society/index_en.htm], addressed the very interesting topic of

Future Security Research in the EU

Convergence is one of the major driving forces of research in the IST-area - convergence in the media, convergence of content processing, and the convergence of networks. Important questions in this context are “where does this all lead to and how do consumers react”. Consumers get lost in technology and in the complexity of what is possible and how all this technology can work together. What is needed, besides simplicity and interoperability, is trust and security in order to build a world where people feel confident. It is the complexity that really creates the difficulties – and complexity is the main issue to be addressed: We have to think about the various interdependencies between the various systems, between critical infrastructures, between all our facilities and have to make sure to create infrastructures that are resilient and self recoverable and able to react to attacks or errors.

Concerning the role of research in the ICT-area, it is important to develop knowledge and understanding about the impact of ICT on societal processes and human behaviour. In the context of the latter one, the example of how young people may deal with ICT and privacy have been given: A dancing club in Rotterdam currently offers to young people the possibility to implant a microchip in their arms to get in for free and get their drinks by direct connection. The young people find this extremely cool and think that they do not belong to the important groups unless they have these tags in their arms. Moreover, research shall lead to secure, dependable, acceptable and respectful (of human rights and dignity) systems and applications. Certainly research should also contribute to the development of means to monitor the Internet to identify cyber crime. The 3 main priorities of ICT security research are the dependable ICT Information Society infrastructure, the secure services, and privacy enhancing technologies.

A European Security Research Programme is being set up in the upcoming FP7 of the EC. Its basic characteristics are a multi-disciplinary approach and solution and capability orientation. In particular it should create a more economic way of using research in Europe by bridging civil and military research. Possible priorities are to protect networked systems and infrastructures, protection against terrorism, to enhance crisis management, interoperability, and situation awareness. The programme should be embedded in the European security strategy as set up by the European Council in the document "A Secure Europe in a Better World", it should further develop the European security culture, it should focus on a EU technology basis and competitive security industry, foster the synergies between civil and military research and public and private use, provide coherence and co-ordination, reduce fragmentation and duplication, and improve interoperability.

Questions still to be further concretised in the European Security Research Programme are: What are the right priorities for multi-disciplinary security research in ESRP to achieve citizen security? How to include relevant public services (police, first responders, ...) as users in security research? How to achieve European and global standards for identity and privacy management in cyber space? What are the RTD priorities for a trusted cyber space for citizens and business?

The **Q&A** part of the presentation addressed the question about how to cope with the existing lack of good synergies between military budgets for R&D in the ICT area and the corresponding civil budget in Europe. Mr Bus answered, that this is certainly a real problem and the way the EU is currently addressing this problem is by setting up the European Security Research Programme, which will also involve companies and organisations working in the military and defence sector. Rules of participation and IPR-rules will help to classify the results. Mr Lacombe added, that the funding of this homeland security activity will be achieved in Europe by a reduction of the conventional defence budget. Thus, companies active in this special sectors can be more proactive and propose solutions. The current key problem is to identify within the different governments or organisations those people who are able to define the needs. In order to be proactive, a clear description of the needs and goals is required.

Patrick Auroy, Director Force Systems and Trend Analysis at the French Armament Agency, presented the important topic for the future of R&D:

From R&D for Defence to R&D for Security and Defence

Through its General Armament Directorate of Future Systems and for Technological, Industrial and Corporation Strategies, the French Minister Defence acts as a key player in public R&D. Each year, direct R&D contracts amounting to 500-600 million € are awarded to the industry and research laboratories; public R&D organizations and high schools are subsidised with approximately the same amount. Furthermore, about 200 million € per year are spent to finance dual R&D activities. The defence field is strongly involved in most of the innovative technologies linked to security for public applications. Some examples are intelligence, surveillance, observation, situation awareness, but also earth sciences, (including for instance meteorology, climatology, or oceanography), network communication and information security, interoperability of networks and equipments based on the concept of netcentric warfare, where dominance through standardisation is a great challenge. Other examples are information management and tools for crisis management, biological and chemical defence technologies, and reconnaissance and identification of individuals and goods, including access control, through biometry.

As defence organizations since a long time, security public departments need to adapt the increasing technology requirements in the security domain and thus to adapt R&D public organizations and funding as well as the acquisition process. This has to be made by profiting from synergies between security and defence – two areas which are today overlapping to a great extend. Military forces and public civil actors have to face many similar threats and risks: security demand for complex equipment and systems, that can no longer procured on-the-shelf, is increasing. A cost effective way of funding defence R&D, as well as the development equipment programmes that follow, can not be successful without a close monitoring of existing capabilities in the defence and the technological industrial sector. The maintenance and the development of skilfulness and competitiveness of the industrial and technological sector through national or co-operation incentives, in order to ensure to dispose of the right equipment at the right time, is a main role of the responsible department of defence. The identification of the strategic technologies needed, as well as of those companies, able to catch and mature these technologies, and finding the adequate ways of helping their development through R&D contracts, international co-operations, up to encouraging private investors to invest in these companies, are axes to be used to ensure the viability of the companies or at least of their strategic technologies or activities in the defence field. This approach developed for defence purposes, including both technological and economic intelligence, can also be used in the field of security, with responsibilities mainly devoted to public actors and authorities. Public investment in security has to take into account different R&D investments to avoid duplication and to use already existing technical expertise. It requires a strong dialogue between administrations and starts with the benchmarking of experiences and the sharing of methods and results in defining needs and requirements. It might be followed by the sharing of experience in the field of high-technology programme management, system approach, and monitoring of the technological and industrial base.

France has encouraged and welcomed the recent creation of the European Defence Agency, that will now bring the necessary synergy for building European defence capacities. A similar process started in the field of security with the involvement of several key defence players.

Military and civil sector have to do their best, to make the two processes benefit from each other and to produce more security for European citizens at the best acceptable price.

The following **Q&A** part addressed the question about the percentage of the reflux of military efforts spent on R&D back to the civil sector. As Mr Auroy stressed, many of the fields addressed by the defence sector are very similar to those addressed in the civil sector. The defence sector does not intend to repeat R&D which is already done elsewhere. For instance, in the field of Information Technology, the defence sector mainly uses the technology developed in the civil fields. The objective is to choose the best way to spend money in new research areas.

Mozelle W. Thompson, Commissioner at the Federal Trade Commission, USA presented with clarity the difficult topic of

*Job Creation and Innovation Outsourcing.
Fresh Look on Broadband Deployment and the Future of Competition*

It is not always easy to recognize the fundamental changes that occurred because of technology. When the big wheels get together, governmental agencies think of the world from top down - but technology led to a more demand-driven market place: "The more you know about your consumers, the more they know about you". Consumers expect to see new developments in terms of mass customisation. They want every government and every company to give them a tailored experience. This means for those working in governmental agencies to better listen to consumers, to give consumers better choices in the goods and services provided and how those services are delivered. This also includes safety and security about how we interact with each other. It also means that we have to breakdown the "siloesation" of how we operate. Confronted to a global market place, governments need to figure out ways to have practical operational solutions to providing protections for people around the world. The OECD recently developed a set of cross-border fraud guidelines, that allow consumer agencies from around the world to share information. These guidelines now form the basis of law in the EU, of some legislation in the US, Australia and other countries. But there still continues to be a big gap on the corporate and government side concerning the question, how to establish a better connection between people who are making decisions and people who actually are expecting rapid response.

Another area to think about is rethinking Intellectual Property. Current discussions mainly concern rights, who has access to them and the need to protect them because of technology. But there are a series of under-utilised assets, whether it is in the Broadband area, where companies own the delivery system without having enough uptake, or companies who have content without being able to give people access to it. There is a need to breakdown these "silos", and for greater discussions on how to get out of these under-utilised assets, including synergies deriving from more open platforms or the broadening of proprietary networks, and a better balance between protection and collaboration.

Finally, another important choice, not only for the public sector but also private sector, is to decide how do deal with investments in innovation - not just in terms of money but also how to focus public attention into why innovation is important and the role of public governments in it. There had been a big discussion in the US about outsourcing and this might be the symptom of a problem, not necessarily the problem itself. The US has always been willing to take a degree of risks of displacement of workers, mainly due to its optimism towards its ability to innovate and to create new jobs and opportunities. Today, the US is facing a

crossroads of whether to go forwards or go backwards, whether to invest time and energy in building new kinds of infrastructure to support innovation and the market place for ideas, so that the US continues to be a place where people from around the world can come and create. This is critical to the competitiveness of the US in the future and it might be critical for Europe or Asia as well. However, investment does not only refer to building better weapons or better telephones, but also investment in education, in teaching kids about the importance of learning and valuing learning and the importance of sharing ideas. That is what is needed at the bottom.

IT can be seen as a chain of various segments including hardware and software and if someone holds parts of the chain, he/she can dominate the whole chain or even the entire market. The following **Q&A** part referred to the question about the importance of this concept of new dependencies for discussions and decisions of the Federal Trade Commission. Mr Thompson stressed the importance for people who look at competition to be as forward looking as possible. One of the challenges these governmental agencies have, is that they tend to be reactive when they need to be more proactive or just to sit down and learn from the market place. They should be able to bring in the private sector and consumers in order to talk collectively of what the future platforms for growth and innovation are. Innovation does not occur in the way that we think. For instance, the Internet does not only provide a new way of purchasing products, but seriously changed consumer behaviours and changed the perception of how people are going to react to those who sell. It is up to the government to think a bit more about where the potential bottlenecks are, which are the ones who need governmental responses and which need just better understanding.

Edith Cresson, Former Prime Minister of France & Former European Commissioner for Research, France, outlined with conviction the

European Research Issues

Developed parts of the world, such as Europe and the US, share a clear responsibility for the future of the world and is it an important aim to mobilise knowledge and money not only to increase the help for lives in the developing countries but also to assist them on their way to prosperity. Intelligence and capacity exist everywhere. Education, seed money to invest, advising for management, private equity, and an adequate legislation are the main items to bring these populations and especially the young people to a better living standard and more stability. This is in everyone's interest. Security or environmental problems have global consequences and neither Europe nor the US have yet taken the necessary steps to decrease their CO₂ production causing the greenhouse effect and inducing terrible climate effects all over the world. Developed countries can not pretend to have any influence in conflicts, if conflicts are increased by the way these countries behave.

Europe has still a mission and a great challenge to face: It has to find, together with its partners, a vision of a future in the new context of globalisation. But for this, Europe has to mobilise. R&D is certainly one of the main possibilities to enter the future. Today, Europe's expenses on research corresponds to 1.9% of the GNP, compared to 2.7% in the US and 3.1% in Japan. The percentage of persons involved in R&D in the private sector are 2.4% in the EU, 5.9% in the US, and 6.3% in Japan. Today, there is little co-ordination between national research policies in Europe. Additionally, the EU has only a small budget for R&D - spent in a too bureaucratic way, which is linked to the very difficult balance between its institutions, leaving only little place for real political work aiming on progress. It is difficult to understand why the biggest financial institution of the world, the European investment Bank,

who easily gives loans to build roads and bridges all over Europe, could not agree to participate in the efforts of building the roads and bridges for intelligence. The objectives fixed in Barcelona and Lisbon seems out of reach.

It is time to launch a co-ordinated action in favour of massive investment in innovation together with all European partners. European countries, linked today by the stability and growth pact, can not float a loan on an individual basis – but the European Union a such has the international credit to do so: Upon the request of the heads of states, the European countries can collectively float a loan via the European Investment Bank in order to finance priority investments, research and innovation. This loan should amount to 100 billion €, which is equal to 1% of the European GNP. Such a loan should allow to increase the mobility programme of the EC, increase certain connecting programmes between Europe and Centres of Excellence piloted by the EC, reinforce the financial resources allocated to fundamental research, to systematically support projects approved by the EUREKA procedure in order to give them a greater scope, and involve the European Investment Funds more massively into existing start-up funds. This idea of floating a European loan to boost growth by massively investing in innovation and research is currently discussed by European leaders.

Anastase Adonis, Telecom Director at Objective Networks, France, presented the important topic of

SME's and Emerging Markets: The Crossroad of R&D and ICTs

The process of developing into advanced societies passes through several specific intermediary steps. The provision of knowledge as such is not necessary – what is needed are services based on knowledge. These services must represent a value and this value has to be shared. Infrastructure evolves and changes because there is a necessity to support all these goods, services and structures for our future societies. We evolve from the information structure to an information service structure to a knowledge structure, in order to finally reach a service knowledge structure. The latter one represents the capitalisation of the knowledge and experience and the performance of our infrastructure. On this transformation path, some technologies act as transitory powers to migrate into a socio-economic environment necessary for building infrastructures based on services and knowledge.

In Europe, there are 20 million entities, which represents a significant potential. In the process of globalisation, SMEs are exposed to precariousness, risks, continuous change and migration. SMEs offer flexibility, interfacing and easy and fast conversion capabilities. Emerging markets are transitional, in the process of moving from a closed to an open market economy while building accountability within the system. They are characterized by risks, reforms, and changing situations. There are different types of emerging markets, e.g. volatile, dependent, accelerating, essential, fragmented, or homogeneous. Emerging markets vary in terms of origins and dynamics, convergence, and access to the market.

SME are necessary for developing societies. They can take risky positions in a better controlled battlefield, show a better adaptability to the technology accelerations, and avoid “wait and see” positions. There are a lot of options when involving SMEs in this changing process, such as to use R&D as road mapping and management tools, to develop mechanisms for or against acceleration technologies, to engage discovery research in areas where evolutionary research fail to find solutions for anticipating problems, and to integrate the industry’s motivation in the European R&D plans. R&D is not an isolated process, SMEs

have to be more involved in order to pass from the capability to build road maps to the capability to build road mappings.

In the following **Q&A** part of the presentation, Senator Lafitte stressed the importance of risk mutualisation, risk insurance and venture capital, which is still lacking in Europe. Europe should learn from the US and its experience with corporate venturing and business angels.

Thomas Andersson, President of the Board, IKED (International Organisation for Knowledge Economy and Enterprise Development) & President, Jönköping University, Sweden, addressed, with a clear vision, the issue of

Raising the Returns from R&D

There is a major shift in the world economy towards a growing weight of East-Asia and China. In contrast of what is often thought, this shift is not only about labour-intensive standardised production in new countries, it is also about advancement in high-technology products in developing countries. The ability to make use of technologies, skills and knowledge is growing in importance in all kinds of products and all kinds of sectors. R&D is one of the key success factors and many countries' prime concern is to raise their R&D efforts. Countries like Sweden or Switzerland are doing very well in this area. However, it is not all about the amount of R&D, it is also about the composition and how the results are used. In countries with a lot of R&D, it is the private sector which is driving; there is also a shift towards R&D in universities, whereas the institute sector is declining. If looking at scientific publications and the number of triadic patents, countries like Sweden or Switzerland are ranked very high. Regarding the economic turnover generated by products that are new to firms, Sweden, as a country with lot of R&D, is once again doing very well. However, regarding the economic turnover generated by products that are new to the market, Sweden comes far down.

To get to the pay-off from R&D, the right conditions allowing innovation to work are necessary. Besides the supply-side of science and research, the demand-side of the market - the needs of people around the world - becomes more and more important. In order to be able to exploit the opportunities, reorganization is required. Private companies are focussing on core business, there is networking, and there are new methods of dealing with risk taking etc. Besides this, division of labour between firms, universities, other institutions, and even public authorities is needed, as well as dynamism in new enterprises and new units.

In terms of entrepreneurship, a country like Sweden with a high R&D-intensity is far down. The problem is the venture capital or seed funding, bridging the funding that is available in science and research and the one needed in the early stages of the commercialisation of innovation. In this context, there is not a need for public capital, but especially for committed/intelligent capital – that means competent actors that are really engaged through networking and their private efforts and risk-taking ability. When looking at conditions for investment around the world, there is no orderly playing field today: There are a lots of bilateral investment treaties, which grow very quickly.

To raise the returns of R&D, a comprehensive approach is needed - not for the government to try to do it all, but to try to be more selective and improve the playing rules. Of course, the scientific basis matters hugely, and academic credentials and openness are necessary. A critical mass is needed – but also the ability to support the niches. In terms of diffusion structure, competence centres and industrial institutes to supplement the universities are

needed, but also better conditions for professional services. In terms of industry-related features, R&D intensity in big firms is needed – but also in SMEs.

Tomasz Rawinski, Business Development Specialist at the Electrotechnical Institute, Poland, presented the very specific topic of

A New Secure Internet: An Important ICT Research and Development Priority

The Internet is continuously expanding and is increasingly used for commercial and governance processes. However, the Internet is more and more the target of effective criminal attacks, and since secure and reliable operations of mission-critical systems over the existing Internet are impossible, it should not be accepted to use the Internet for mission-critical teleprocessing. A report analysing the usability of the existing Internet for e-Government, commissioned by the US Department of Defence and issued in January 2004, came to the conclusion that the Internet in the existing state is completely unusable for e-Government or e-Commerce applications due to its lack of security.

The solution is to develop a new, Internet-like, but secure telecommunication network to be used as a basis for the mission-critical systems: a secure Internet. The secure Internet should be a network disposing of all the advantages of the existing Internet, with similar expansion and ubiquity, but without the weaknesses of existing Internet. This new, secure Internet should exist in parallel with the existing Internet and will be mainly used for mission critical systems operations. It should operate with high-speed and very high reliability. The development of this new, secure Internet requires adequate research, conceptual and design work. Launching this work should be recognized by the European and international community as key ICT research priority.

Basic reasons for the lack of security of the existing Internet are the principles of operating over the Internet and its architecture enabling any Internet user to operate anonymously by hiding or falsifying his/her identity, which is his IP address. Developing the secure Internet is a difficult and complex task, which is expected to be solved gradually in an evolutionary way. Preliminary analyses indicate that it might be possible to develop initial versions of this secure Internet by relatively easy modifications of the existing telecommunication technologies.

The new Internet is needed by all members of the international community - creating it is a difficult task requiring use of large resources. The most reasonable and also necessary solution is to establish a joint, international project for developing a new, secure Internet.

Vincent Vergonjeanne, Development Engineer at 3IE - Institut d'Innovation Informatique pour l'Entreprise, France, briefly introduced the remarkable

SmartCenter.Net - A Software Solution for the Communicative Home

SmartCenter.Net is the winning application of the worldwide 2004 Microsoft Imagine Cup.

The automation market is a rather old market which never really worked as it was expected to do. Today, automation is only basic automation, working with timers or detectors. Today's home automation consists in switching on and off the devices of your house, systems do not provide more than batch processing. This basic automation is not enough. For it to become essential in your life, you have to tweak your house automation system so that it best fits

your habits. What is needed is context-related information and the approach is to add Artificial Intelligence to improve home automation and to enable the digital home.

The response to this challenge is the SmartCenter.Net product. The underlying idea of SmartCenter.Net is, that it should be the house that adapts itself to its inhabitants and not the other way round. SmartCenter.Net is a home automation platform providing a complete integrated support by using many mediums to access to the system and allowing its user to automate a large variety of functions.

SmartCenter.Net includes cognitive technologies, enabling to analyse inhabitant's habits and any home automation product on the add-ware side to anticipate, adapt and react in real time to the people. Moreover, SmartCenter.Net is fully compatible to other products. One of the main problems of home automation and the digital home in the context of convergence is that everybody uses its own protocol. SmartCenter.Net allows seamless and unified integration and enables any product to work with it. Initially, home automation was made by technologist for technologists – however, it must be easily usable for “ordinary” end-users. What is needed, is a end-user oriented unified user interface to make the home automation market exploded. SmartCenter.Net provides all this on a middleware basis.

Information Society Perspectives for Communities

The session, which was divided into two parts, focused on initiatives, strategies and approaches for improving the economic and civic prospects of communities by capitalizing the existing technical infrastructure and networks. Today, communities of all kinds face the challenge of fundamental transformation requiring new models and strategies for leveraging competencies and building value and knowledge creating networks for the benefit of the individuals who form it. The panellists discussed the question on how to manage that technology and focus on knowledge and innovation strategies in this interdependent world.

The moderator of the session, **Jean-Pierre Chamoux, Professor at the University of Paris 5 - René Descartes**, France, welcomed the participants and panellists.

The **chair** of the first part of session 6, **Giorgio Prister, Public Sector Sales Executive, Local Government & Health, IBM EMEA**, [www.ibm.com], one of the main sponsors of the Global Forum 2004, opened the panel by introducing a new interesting concept:

On Demand: The Next Evolution of On Line Communities

The strategic goal for 2010, set for Europe at the Lisbon European Council, is “to become the most competitive and dynamic knowledge based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion.” Up to now, this objective seems to be out of reach. However, there are very encouraging initiatives going on in the public sector.

Grid Computing, applying the resources of many computers in a network across a community, becomes increasingly popular in the public sector. As an example, the state-wide initiative of North Carolina of putting in place a Broadband grid computing infrastructure, has been presented. The initiative, mainly focusing on SMEs, aims not only on reducing cost but mainly on saving money for the community of people and businesses in the state and on fostering economic development. A reduction of operational cost between 10-15% and additional 24,000 new jobs are expected by 2010. Grid computer clusters connect many computers and allow computations to run in parallel, e.g. data grids connecting storage centres using communications links, enterprise grids connecting clusters in a number of centres in the firm and allowing decentralized control of the grid, and partner grids letting suppliers or collaborators connect to an enterprise grid.

Another example comes from London Borough of Newham, where digital television technology is used to improve e-Democracy. A local government managed TV, called “Region TV”, enables citizens who do not use Internet, to access from their televisions to Internet and e-mail services as well as council information on interactive channels. This initiative is a very effective way, which does not require the installation of PCs, to bridge the digital divide.

These examples illustrate the kind of entrepreneurship, local governments and regions can put forward to foster economic development and social inclusion

IBM is annually creating its “Global Innovation Outlook”, describing the next services and products IBM will deliver in the medium and long term. This year, IBM decided to create an “Ecosystem”, bringing together representatives from governments and universities, in order to work together and build a picture of the future. On 15 November 2004, the results of this international initiative will be published.

The following **Q&A** answered the question whether IBM would provide solutions for communities by granting a concession or solutions that could be shared with other providers. Mr Prister stressed, that IBM is very open to any kind of collaboration. IBM very rarely does all by itself. The company knows a lot about technology and has a long experience in working with communities, but IBM has to collaborate with other private companies and public organizations in order to put in place the right values for the communities.

The first speaker of the session, **Gérald Santucci, Head of Unit “ICT for Business” at the DG Information Society of the EC**, [http://europa.eu.int/information_society/index_en.htm], presented with all his expertise and experience the Commission’s point of view on

Digital Business Ecosystems: A New Frontier for RTD in the Knowledge Based Economy

Business networks did not start with the Internet. They are now more widespread in our economy than ever before, but their pervasiveness is a result of a long evolution in social, economic, political, and technological systems. During the last decades significant changes in legal, managerial and technological capabilities made it much easier, and sometimes necessary, for companies to collaborate and distribute operations over many organizations. Companies started to integrate technological components from a number of business alliances and to collaborate with a number of channel partners to distribute their products. Distributed business networks have become today *the* established way of doing business in the Information Age. The occurrence of the Internet made it obvious that business network members share a common “fate”, which means that they can both raise and fall together. Today, there is a paradigm shift in Industrial Economics, notably from concepts like “industrial district”, “innovation cluster” or “growth node” to the emerging concept of “business ecosystem”.

Like biological systems, business networks are characterised by a large number of interconnected participants, who depend on each other for their mutual effectiveness and survival – or, with other words, if the ecosystem is healthy, individual species, i.e., the companies, thrive, but if the ecosystem is unhealthy, the individual species suffer. As with biological ecosystems, reversals in overall business ecosystems’ health can happen very quickly. Therefore, biological ecosystems can serve as a source of useful terminology for analysing business networks in the modern economy.

However, threats and opportunities can be identified: It becomes clear in the current transition from the Information Society to the knowledge based economy, that innovation and operations are networked phenomena. The massive dispersed activity creates new threads for firms, because traditional players braised themselves for attack by a number of challenges from a much broader industry base. The notion “business ecosystem” helps to understand, that a new area of technological ferment, triggered by technological change and globalisation and supported by the long process of deregulation and re-regulation, began. However, this new area does not pose insurmountable challenges for established firms. As long as the capability to integrate technology exists, established firms can leverage their ecosystems and adapt to major technological changes. This is why technological transitions

were survived by the majority of incumbent firms, which now enjoy greater revenues, reorganised structures and processes, and innovative businesses. In fact, incumbents endure and adapt. Therefore, the first critical decision of established firms is to identify and leverage the range of assets and capabilities that are likely to survive. Firms must identify opportunities for leveraging and link to an ecosystem in a way that fosters co-operation and partnerships. Business ecosystems also facilitate integration and evolution.

The notion of “digital business ecosystems” is derived from the notion of “business ecosystems”. It is an evolutionary, self organising system, aiming at creating a software environment for networked organisations. As natural organisms climb the evolution stairs, the analogy can be made of behaviours and architectures evolving in the direction of an ever-growing variability, adaptability, and flexibility. In the Knowledge-based Economy, businesses will often operate using application software or application services provided by developers that will take advantage of the special functionalities of the business ecosystem, in particular the ability for services to self-organise, self-optimize and evolve through reciprocity-based co-operation and transparency towards a better future. Such a vision supports the development of open and adaptive techniques and evolutionary business models. In this context, the European Research Programme of the EC will contribute to fostering local economic growth through new forms of dynamic businesses interaction and global co-operation between organizations and communities enabled by the ICTs. Research is needed in fundamental science, in order to understand how to transpose relevant mechanisms from living organisms to business models. Research in network architectures is necessary to explore how to leverage, for instance, P2P technologies to enable spontaneous evolution of a non-centric, full tolerant, secure and self-healing architecture, and finally, research in the field of socio-economic and organisational models is indispensable.

In short, the concept of Digital Ecosystem may prove to be revolutionary as a powerful research and technological innovation programme for addressing the evolution of complex adaptive systems in the Knowledge-based Economy.

François Bérorgey, Secretary General of the Strategic Board for Information Technologies, Prime Minister, France, presented a new view of

Industry Regulated Public Governance

The Strategic Board for Information Technologies (Conseil Stratégique des Technologies de l'Information - CSTI) is comparable to the e-Japan-initiative, the German D21-initiative, or the US President's Information Technology Advisory Committee, and is composed of members from industry and research.

CSTI's working plan for the upcoming years comprises competitiveness of the IT-industry around the world, competitiveness of companies in general through IT – in this context, the objective has been focused on developing activities, people working within the national territory and welfare of companies, usage for general public and the two main tools of growth and IT, which are R&D and education.

It is a good time to have this kind of relationship between companies and the political and administrative level, due the stable landscape in favour for co-ordinating a policy for the years to come. The scope of CSTI is 100% economic, focusing on competitiveness, growth, activities, and employment in the French territory. There are 3 types of communities with very

different scopes of interest and very different time schedules: the political level, the administrative level, and the private sector.

Soren E. Skovlund, Senior Advisor & DAWN Manager at NOVO NORDISK, Denmark, [www.novonordisk.com], one of the main sponsors of the Global Forum 2004, presented

A Case Study of Stakeholder Innovation: Diabetes Attitudes Wishes and Needs (DAWN)

Novo Nordisk is a world leader in diabetes care since 1923 with approximately 19,000 employees in about 70 countries. Diabetes becomes an urgent global challenge and Novo Nordisk, a company committed to environmental and social responsibility, is leading the fight against diabetes. The company follows the WHO recommendations of developing national health strategies, building national healthcare capacity, ensuring best possible pricing and additional funding. Novo Nordisk's approach to these recommendations are, among others, national diabetes programmes and the DAWN Programme.

The DAWN Programme is a world-wide initiative, based on stakeholder innovation and led by Novo Nordisk in collaboration with the International Diabetes Federation and an international expert board, with the objective to improve healthcare delivery and policy for diabetes and the quality of life of people suffering from diabetes. The programme started in 2001 with the global DAWN study, including 5,400 people with diabetes, 3,800 healthcare professionals in 13 countries, and political decision makers. The study showed a clear need for improving health-policies for chronic diseases.

The 2nd International DAWN Summit took place in November 2003 in London with 150 leading diabetes stakeholders from 31 countries to discuss how to address the critical gaps that exist in current healthcare systems. A world-wide call to action has been published in 140 countries. Concrete strategies for national and regional DAWN concerted actions have been developed and implemented in more than 20 countries to raise awareness and advocacy, mobilise people with diabetes, train healthcare providers, provide practical tools and systems, drive policy and healthcare systems' change, and to develop psychosocial research in diabetes. IT is a key driver of attitude and behaviour change in healthcare. Examples of IT use are: interactive multi-media communication training for healthcare professionals, the setting up of video-links in collaboration with the George Pompidou Hospital, Paris, or interactive telehealth services with the French Space Agency.

Partnership and a focus on the real end-user needs is crucial for the achievement of common goals. Policy-makers and industry can work effectively together through value-based information sharing. Multi-stakeholder surveys and value-driven knowledge bases form a strong platform for truly multi-stakeholder driven concerted action. Motivational and behavioural psychology can inform and improve more effective use of IT systems to align processes and, in this special case, improve healthcare.

Andrew Robinson, Joint Coordinator of the eJustice Project, United Kingdom, gave a very clear and concise presentation of

The eJustice Project: Acceptable Technologies for the Accepted Freedoms on Europe

eJustice is a Integrated Project, co-funded by the European Commission. Becoming a working model of freedom, justice and security is one of the key ambitions of the EU.

The eJustice project aims at indicating that justice, since the Treaties of Amsterdam, has got a trans-European pillar and answering to the question whether there are any ICT-tools that make that ambition real - so that the citizens can have confidence in justice, not only at a national level, but also at the European level. On 5 November 2004, a meeting of the European Council takes place in Brussels, to discuss the programme for the future in justice, security, and freedom. Pre-conditions of this working model include that juridical data must be of good quality between the member states, the data must not land in the wrong hands, and citizens must be protected from the misuse of the data. As stressed in the official communication from the Swedish Ministry of Justice to the European Commission, a main challenge lies in operational co-operation, in making the legal framework and the structures set up fully operational. The most crucial task in this regard is to develop the exchange of information between the law enforcement agencies in the Member States.

The consortium of the eJustice project believes, that e-Justice could be like e-Health was ten years ago: It has been taken ten years for e-Health to be moved from an ambition of the European Commission to becoming evidence today. There is a demand which eJustice tries to address by identifying the ICT-tools that can achieve those objectives. The eJustice consortium is composed of strong partners, such as SAP, Thales, Unisys and several universities. Above all, eJustice wants to deliver something which can be usable as a tool. As an Integrated Project, eJustice has to have an integrated team, it has to integrate the best of research, it has to be an audit of what already takes place, and has to have an integrated vision – and that integrated vision requires the integration of stakeholders. The project brings together the industrial field, universities - and ethics groups, set up in France and the UK, so that the civil society understands some of the implications of biometrics, and of other complex and complicated issues, which could make the citizen feel uneasy, unsure and doubting in the structures which have been proposed in the Treaty of Amsterdam or in future elements concerning collaborative justice in the European Constitution.

eJustice focuses on ICT-tools to make sure that the European e-Justice network works for the professionals in that field and for their clients - the citizens, and the way one can offer solutions to the issue of the European Arrest Warrant. eJustice hopes to be able to say, that, if this can work in only a few areas in a few Member States, other Member States can see the value for money of this investment, because they can learn from what has been done in the project.

Per Torphammar, Technical Director of SkåNet, Sweden, gave remarkable presentation of

A Powerful Business-Driven Public-Supported Initiative in Infrastructure in the Malmö Region

SkåNet is one of the biggest ongoing European IT-infrastructure projects with a budget of about 100 million US\$. Skåne is a county with 1.2 million inhabitants and 500,000 households, situated in the south of Sweden in the expansive Øresund region (4 million inhabitants).

SkåNet also has been involved in the Dark Fibre Link project for establishing the Broadband connection between Sweden and Denmark via the Øresund bridge. Within the Dark Fibre Link project, 384 fibre pairs have been deployed. Today it is possible to rent dark fibre from Malmö to Copenhagen.

The network in Skåne is a public-private partnership, operated under the brand name SkåNet. SkåNet is a small company whose only business is to create the network in Skåne. The company is owned by the county council, which is the public sector for healthcare and the co-operation of local authorities in Skåne. The main contractor is sydcraft bredband, who is in charge of physically creating the network. The project is funded by public grants, by traffic generated by the county council - the healthcare system and local authorities, and incomes from the rental of the dark fibres. 32 of the 33 local authorities of Skåne are involved in the project. 2/3 of the network are completed today. This has been achieved in 15 months. Once finished, the network will be 2,000 km in total. The dark fibre network covers all towns and villages with a population of more than 200 inhabitants. It is an infrastructure project and the network is treated like a basic infrastructure: It is open for all operators at equal terms, and everyone can rent fibre. The business model is constructed in a way to support long-term and long-distance rental.

The long-term objective of the project is to get locally produced shared services, to create new opportunities to develop public-shared systems and new opportunities for business development. The network represents an infrastructure for the whole region with residual resources for urban and access networks. The network focuses on the development of business and public administrations, should be attractive to operators and service suppliers, and create a climate of "go" in the total region - but at the same time, with very low costs for the local authorities.

Claes-Olof Olsson, IT Director of the City of Malmö, Sweden, presented the challenging experience of Malmö:

From Ships to Chips - Transforming Public Services to the e-Community

The economy of the city of Malmö historically depended on heavy industries. The Shipyard industry had its peak in 1970 and thenceforward declined up to its downfall in the nineties. The challenge, the city of Malmö faced, was to transform the community, marked by a century of the industrial revolution, into a decade of IT and knowledge based industry. The challenge as such was threefold: transformation of the physical infrastructure, qualification of human capital, and provision of an adequate IT-infrastructure. The fixed link to Denmark via the Øresund bridge is an important aspect of this IT-infrastructure, but the city is also focussing very heavily on putting a new fibre based broadband network in place, which is built and owned by the city. This has to be linked with the services as such, e.g., a structured approach towards e-Government.

The deployment of IT-infrastructure is heavily influenced by what is going on in the telecom industry, and Sweden lived through a decade of "organised chaos" in terms of deregulation of the Swedish telecom market. At the turn of the millennium, the city of Malmö took the initiative to put in place a publicly accessible IT infrastructure - without any grants from the government. What Malmö had been facing, was a kind of Broadband paradox: The main approach of the Swedish government was, that the market actors will fix the problem and put a new IT-infrastructure in place. This is a valid assumption for areas of great market potential – areas which are densely populated and with high purchasing power. However, this includes the obvious risk of vertical monopolies with low or no competition. The other side of the paradox is, that in other areas, which geographically represent the most important part - even of the city of Malmö, there is actually no market interest. Thus, the city of Malmö decided to create the infrastructure itself. The decision was driven by both social and economic considerations. The network should be accessible for all, whether they live in urban or rural

areas, should represent an open, neutral market place to create competition, promote establishment of SMEs, and promote the city and the region as an interesting place to work and live.

The IT-infrastructure in Malmö today is an open, fibre based structure of about 300 km spread throughout the city, with 300 access points. Furthermore the city council's active internal network is operated through the network with 200 access points based on FTTP and 400 access points via DSL. Malmö became a well connected city with all schools being connected to the Broadband network and 50% of its population having Broadband capability in their homes. But even if the region currently has the highest number of Broadband wired homes in Europe, there is still a moderate up-take. All Broadband operators, which previously focused on building infrastructure, still have not come up with the killer applications.

The City of Malmö is today in the midst of the most dynamic and challenging time period since the beginning of the last century. The focus of ICT development must always be the customers' and citizens' benefits. The corner stone in this context is an open, flexible and dynamic infrastructure supporting efficiency and growth.

Gene Kimmelman, Senior Director for Public Policy at the Consumer Union, USA, outlined a fascinating view on

Consolidation of Telecom and Media Companies: A Problem for Democracy

Information does not automatically translate into knowledge that supports democracy. An example is the case of the US, where too much deregulation eliminated the important role of public oversight in areas that are fundamental to a democracy.

The US are characterized by an enormous technological explosion, the explosion in media, in content, in wireless and wireline networks, in cable television with hundreds of channels and satellites with even more. There is probably more content available to individuals across the US than anywhere else in the world. This has fuelled an enormous shift in public policy to a world of liberalization and deregulation of policy, which has then led to substantial consolidations within industries and across industries – in network and infrastructure, but also related to content where consolidation is leading to more control despite massive availability. The US created a kind of paradox, which differentiates between what the mass market is versus what the availability is.

With these hundreds of channels available in the US, on average American families watch about 12 channels. For the news, Americans overwhelmingly have abandoned newspapers and turned to television. Television is on in American homes more than 7 hours a day. But despite all these channels, more than 35 million homes watch only 3 networks in the evening for news - among a wide array of cable channels that offer news – and that over a 30-minute period. A wide array of cable channels are offering news over a 6-hour period in the evening. They are available in 85-90 million homes but reach only 1 million to watch. When it comes to community and local decisions, it is the newspaper people turn to. Almost 60% of Americans say, that they rely on a newspaper as a major source of information for local events, local elections, and local decision making. 70% of Americans have one local newspaper in their community. In this world of a deregulated market place, there are now proposals to allow to TV stations to own the local newspapers and vice-versa.

There has been the experience in the recent presidential elections in the US, of one media company that owns 62 channels across the US in more than 40 communities. It happened to be in markets where the national election was quite close and decided to broadcast a documentary that was extremely favourable to one candidate and harmful to the other. The media company changed its mind in the last moment after there was an enormous public outcry and a lot of pressure was put on. There was very little available in terms of public oversight in governmental regulation to do anything about this, even though a survey showed that even among those people who wanted to see this documentary, more than 70% believed it should be balanced with the opposite point of view.

The example points out, that one needs to be very careful to understand that information is often disinformation, and information availability does not translate automatically into reliability and availability to people in a meaningful timeframe, in a manner and a form, in which they can incorporate it and use it for their decisions. Information availability is not enough for democracy.

Since many local governments are involved in infrastructure projects, the concluding **Q&A** section addressed the questions most of them are actually facing: what is the right model, which services to provide, and how to measure success?

Mr Santucci pointed to the achievements already done during the past 20 years: Research in the pre-Internet area started looking at end-user applications; the notion of “communities” did not even exist in this context. The question was rather how to apply telecommunications and computing to areas of general interest and the first ones in Europe have been healthcare, learning, and road safety. This was a first step. 10 years later in 1995, the Worldwide Web started to be implemented and used. This was when the notion of “communities” appeared - first of all because the number of areas of applications have been extended to new ones, but also because local and regional aspects came to the fore. The question was how to apply telematics to urban and rural areas. A few years later, the notion of integrated applications on digital sites took momentum and almost superseded the previous notion of individual telematic applications for urban and rural areas. Today, we are in a third stage, where the use of technologies is expanded to new areas, such as justice or democracy, targeting very specific domains where collaboration is needed to achieve very clear goals. This is a way to get a sense of what a community is and whatever we want to propose when looking at the future, we need to address the issue of what the new infrastructures will provide: Broadband and mobility. Mr Robinson added that although many cities move to new technologies, people still want good health and better health, good learning, better learning and lifelong learning. One has to be careful of ICT thickness and democratic thinness. A balance is needed between ICT thickness and democratic thickness.

As the first speaker of the second part of the session, **Debra Amidon, Founder & CEO of Entovation International**, USA, provided a brilliant insight in

In the Knowledge Zone: Knowledge Innovation Principles, Practices and Policies

Following the economist Thomas Malone’s understanding of the innovation agenda, we are at a historic choice point and at a finding moment in determining what kind of world our

children's children will inherit. It has to be avoided to make decisions on the old industrial models of the past. However, economic theory has a problem with knowledge: The more you share it, the more it proliferates. So it defies the basic economic principle of scarcity.

Some major milestones, illustrating the evolution of this knowledge economy, are the "Grande Colloque de Perspective" in 1991 in Lyon, that has further evolved through the efforts of the OECD and the EU, who funded a conference in bringing together the Secretaries of Educations to look at how to create the European Knowledge Union in 1997. Just before the year 2000, the World Bank funded a conference on Global Knowledge Partnership II in Kuala Lumpur, to bring together 93 countries building Knowledge Societies. In 2000, FASB published guidelines on measurement criteria for managing and measuring intellectual capital, which was followed by a groundbreaking research conducted for the United Nations in order to develop the world's first national intellectual capital index.

In the 1980th, the knowledge economies started with the focus on government, industry and academe to build technopoleis having a training-based focus. In the 1990th they shifted and evolved into science and technology parks, knowledge clusters and laboratories, and digital cities, focusing on learning-based balancing continuous and breakthrough improvement. In the 21st Century, they are characterized by knowledge villages, knowledge cities, and knowledge regions - which is what the knowledge zones are for innovation-based real-time performance.

The basic premise of an Innovation Superhighway is not about the technology – it is about the social networks that are developed. Knowledge is the resource to manage, innovation is how to put knowledge to work and this is done by building collaborative infrastructures. The report "Engines of Economic Growth", looking at how to link governments, industry and academia supported by some economic models, was highly recommended to local governments. There is a shifting in trends and drivers, characterised by a new reliance on the Internet, the virtualisation of markets, the value of intangibles, and the visualisation technologies. Knowledge zones can be defined in three ways: 1) a geographic region, 2) a product or service or industry segment, or 3) a community of practice in which knowledge flows from the point of origin to the point of need or opportunity. It is important to understand how does knowledge flows and how to put this into action with the principles leading to the impedance of innovation, the policies, the governance and the management of practices leading to the impact: real time performance. Countries are creating models and communities of practice are being established across the globe. And if one starts thinking of this being nodes on the network and the knowledge flowing among them, one can see what is evolving and how networks can be used.

We need to understand the knowledge processes that tie together these new knowledge economics consisting of knowledge structures, knowledge workers, knowledge processing technology, and knowledge performance. We are creating a new economic world order based on the flow of knowledge and not on technology, on innovation and not solutions, on value systems and not chains, on stakeholders success and not satisfaction, and on international collaboration.

Emanuela Prandelli, Assistant Professor of Management, Bocconi University & SDA Bocconi School of Management, Italy, gave very clear and coherent presentation on

Communities of Creation: Managing Distributed and Collaborative Innovation

Virtual customer environments have become a flexible and effective tool to interact with customers and partners and co-produce value with them. Such an ability has a direct impact on the firm's capacity to generate value both in the short term, through a better interaction with the customer and an implementation of a customer marketing policy, and in the long term, through the creation of new products that may be better targeted to the served market. The Web and new technologies have a strong impact of the entire portfolio of customer relationship: It not only improves the efficiency of customer relationships but also provides the chance to involve customers in a more interactive dialogue, allowing companies to increase the quality of the typical output of market research activities – which is the knowledge about individual customers.

Actually the most important aspect in this context of customer relationship comes from the opportunity to manage P2P relationships between the customers. This has a very important business meaning for companies, due to the fact that it allows companies to absorb customer knowledge. When using virtual communities, allowing customers to share experiences, the companies get the chance to enter a social dimension of customer knowledge and have the opportunity to understand what customers think about specific experiences. Thus, companies can move from the knowledge about customers to the knowledge of the same customers and accessing the competencies that customers have developed within their own context of experience. Companies more and more use virtual communities to get feedback on products' prototypes, in order to profit from the customer knowledge to assess and even improve the product, and thus to reduce the time to the market of its products. Web and ITC provide access to a kind of knowledge that would be very difficult to access with traditional marketing research.

Virtual companies are becoming a relevant tool in order to manage distributed innovation. Actually, there are two opposite models: The one, where the cycle of innovation is internal to the boundaries of the individual company. This proprietary model is a sort of hierarchical model for managing innovation where the control and the direction of innovation is clear and well identified. The disadvantage of this model could be that the company does not reach enough creativity. The opposite model is the open source model: Open sources systems have the advantage of increasing creativity but imply the risk that the company might lose some kind of control and that the system may become unstable.

Virtual communities, or communities of creation, represent a sort of compromise between too much chaos and too much order and a balance between these two opposite models. Communities of creation allow to pursue a flexible model of innovation by leveraging distributed competencies, but at the same time ensure clear participation rules, centralized co-ordination activities to support the constant animation of interpersonal communication, social control mechanisms, incentives for favouring participation, and rules to manage Intellectual Property Rights.

Helena Lindskog, CEO of Heldag AB, Sweden, presented a new insight in

IT Outsourcing in the Public Sector

In almost every country the public sector represents the biggest part of any country's economy. In Sweden, the public sector purchases goods and services amounting to 50 billion € per year. It is not possible to find a comparably large industry in the private sector. The public sector varies in numbers and responsibilities, but when looking at the different public sectors in the different countries across the globe, there are more similarities between these public sectors than differences. There is no competition on this market. The public sector is characterised by many contacts with citizens and businesses and is the most IT-intensive sector. However, today the distinction between private and public is blurring, among others due to outsourcing.

The public sector is the biggest single buyer (monopsony). It can be very attractive to sell to the public sector, but on the other side it can be very tedious, risky and costly. Furthermore, the buyers' competence is not always the highest and in the IT-sector it can be on a rather low level. Thus, the public sector needs a lot of external experts. Jurisdiction is different in the public sector, there are limited possibilities of contacts between buyers and sellers, and there is a difference in framework agreements and call-off contracts.

Outsourcing is a one-time event for a specific function that previously has been a part of an organization and afterwards becomes a part of another organization and the relation between these organizations is regulated by a contract. Off-shoring is outsourcing to another country.

There are many different players in the field of IT-outsourcing in the public sector, and the most important ones are politicians. Most of the IT-outsourcing is initiated by the politicians, with the objective to gain votes. Outsourcing is always a very critical and strategic issue, as it concerns data, the life of citizens and businesses. Imagine, for instance a public sector is outsourcing the IT of the tax authorities to a private company and this private company decides to off-shore it afterwards...

In competitive bidding, the term "winner's curse" refers to the situation that the winners at auctions are often the real losers: they pay more for an item than its value. In IT-outsourcing in the public sector, this "winner's curse" occurs quite often. In a normal auction the buyer loses and the seller is gaining. In the public sector, this can lead to a double negative impact: Often the one who won and was struggling a lot to get the contract, conceded too much and finished with irrational pricing, so that is impossible afterwards to deliver to the government what should be delivered. In this case the biggest loser is the government – and at the end the citizens.

Kimmo Aulake, Advisor, Council of Europe & Special Advisor, International Affairs, Ministry of Education and Culture, Finland, gave a very interesting overview on the

Council of Europe Recommendations on e-Governance

The Council of Europe is Europe's oldest political organisation, founded in 1949, and is assembling today 46 countries. The Council was set up to defend human rights, parliamentary democracy and the rule of law.

The Council's draft recommendations on e-Government have been prepared by an ad-hoc inter-sectoral group of specialists, including a number of Council of Europe's steering committees' members, including those on culture, education, mass media and legal affairs, as well as representatives from certain Member States. The Council's two main recommendations are to review the e-Governance policies in light of the guidelines that are appended to the recommendation, and to work inclusively to develop a shared vision of e-governance that upholds human rights, democracy and the rule of law.

The appendix consists of three chapters on e-Democracy, public e-Services and e-Governance strategies. Within its recommendations the Council recognised the very important potential of the use of ICTs to enhance democracy and to improve different democratic processes, but at the same time made clear that ICT should only be used if it brings about certain positive societal externalities. The use of ICT should strengthen citizens' participation, initiative, and engagement in public life; improve the transparency of democratic decision-making and the accountability of democratic institutions; enhance the responsiveness of public authorities; improve the overall accessibility, usability, and inclusiveness, of public services; and ensure equality in public service provision as a means to foster social cohesion.

The Council of Europe is actually trying to complement the different, frequently used, technical feasibility criteria for e-Governance applications with societal and democratic feasibility criteria. The Council of Europe's task and mandate as a value based organisation is open ended and must be interpreted and applied sensitively in the changing world. In addition, there is a specific mandate given by to the Council of Europe to "seek common responses to the development of the new information technologies, based on the standards and values of the Council of Europe, while ensuring a proper balance between the right to information and respect for private life". This particular recommendation, as well as other relevant Council's legal texts, are carefully circumscribed not to overlap or contradict other texts that are often closer to the implementation of e-Policies. Furthermore, this recommendation actually occupies a more or less empty "legal space", i.e. it targets phenomena that few other legal instruments pertain to. The overriding thrust is to bridge more closely the fundamental democratic principles and the much more concrete everyday work in developing and implementing individual e-strategies or parts thereof. Or, at least, to introduce a perspective whereby the basic democratic ideals can inspire, and be taken into account, when the Member States make decisions on the information society.

The Council of Europe's activities in the field of the information society, including standard setting, are entirely justified. They are indeed necessary when they pertain to, and strive to increase the awareness of the governments and other decision makers on how a number of questions of fundamental democratic importance are today often embedded in new and emerging issues and sectors.

Denis Ettighoffer, CEO of the Eurotechnopolis Institute, France, presented a new concept for the future:

Driving Role of the Networks of the Economic - e.Fertilisation

Only innovation will allow developed countries to continue to create value and thus revenue; only innovation will allow companies to get out of the vicious cycle of the intensification of competition based only on the reduction of production cost.

Today, the employees should become the first vector of the “pollination” of the ideas they can gather. The number of employees being in relationship with customers or external suppliers exploded: In 2001, 97% of the employees have a direct contact with customers or the public in general – as against 29% in 1987. And these new contacts are increasing rapidly with the generalisation of electronic intermediation. Thus, companies are moving from a logic of functions to a logic of relations. These functional and operational units will become more and more autonomous and driven by collaborative relations. Managers are facing a major challenge by moving from an organization based on data towards an organization based on human networks. The expansion of knowledge makes that what is creating value today are rather intangible components than material ones.

The methods needed to create ideas combined with the creation of added value are constituting the collaborative economy - or “e-Fertilization”. Today, it is vital to get access to relevant information or ideas as early as possible in the same way as to dispose of rare material or capital. The complexity to gather all possible information to resolve current problems obliges to combine the know-how of experts in multiple domains. This radical evolution will modify the economic tissue of the work organization of the growing services. It will boost applications such as tele-working and co-operative working between actors around the world in order to gain collective intelligence and to favour knowledge “pollination”. The goodwill relationship capital will correspond to the potential of interaction between a company and its environment and its capacity to generate partnerships. What will become essential is a collective outcome of the ability of each employee to communicate with others and thus to favour the “fertilization” of ideas.

Depending on the quality of interaction which will be established between all members of a community, its collective intelligence will be either less or very much higher than the simple sum of each individual talent. Meeting the requirements of collective creativity will not be possible without upsetting the current ways of managing people though organized professional networks. Access to more and more shared material or immaterial resources is essential.

After years of studies about the best ways of using electronic networks in order to increase work productivity, we now have to concentrate on how to use these electronic networks to create added value thanks to cross-fertilization of knowledge and ideas.

Daniel van Lerberghe, President & Executive Director of the Politech Institute, Belgium, [www.politech-institute.org], one of the supporting sponsors of the Global Forum, introduced a remarkable new concept:

An e-Strategy for Political and Community Leaders

Broad convergence does not only happen on the ICT-side, but also between ICT and the political world. Political and community leaders, as well as civil society actors who want to get involved in the political process, have to develop an electronic strategy alongside their own global strategy. “e-Strategy” means, providing political and civil leaders with a powerful combination of strategy, issue advocacy and cutting-edge web-technology services to empower, activate, educate, and mobilise constituencies, citizens, activists and resources to achieve public affairs objectives.

As Phil Noble, founder of PoliticsOnline, emphasized, "Anyone who reads the newspapers knows we are seeing the Internet revolutionize politics in America - now. Like any revolution,

there will be a lot of new winners, and new losers". These new winners need to respond to the changing political realities by developing an efficient e-Strategy, in order to be present and control the political, the community, or the civil agenda - and to win.

The concept of "the political entrepreneur", developed by the Politech Institute, is joining an innovative person putting forward his or her project: He/she needs to mobilise resources, his/her constituency, activists and support. And this can be done through the web – even though not exclusively through the web. The major component of such an e-Strategy is the branding of an organisation or a person and its objectives by reaching anyone, anywhere, at any time in an interactive, innovative and sustainable way. As one of the characteristics of the Internet is to be an interactive medium, contrary to television and other more passive traditional media, the Internet provides a powerful tool for such an e-Strategy. The use of innovative means is very important, but they have to be used to serve the needs and not just for innovation's sake. Finally, the e-Strategy has to be based on a constant campaign aiming on sustainability.

The design of such an e-Strategy is much more than just building a web site. The web site is at the centre of the strategy, but other ICT tools, such as interactive TV or SMS for mobile services, have to be used and integrated to help staying on track and out front to achieve the goals and win. Such a strategy needs to be flexible: You need to adapt yourself, and you need to be very interactive in order to awake the "silent majority" of persons who are not voting in general. However, these people who are not voting in general are the citizens of tomorrow: the young people. In 2002, the British Prime Minister Tony Blair intended to launch a programme engaging each Member of Parliament to get online and to create his/her own web site. Against this background, a survey was carried out in the UK, that showed that only when the web site is responding and interactive and provides nice features, young people are starting to get involved in the political process. User-friendliness is extremely important in this context of an e-Strategy.

You have to become an online leader. An online leader successfully cumulates the online campaign with the offline campaign. You need to assess that strategy and to be in constant contact with it, you need to plan, and you need an ongoing support to be innovative and to add different tools to your website – and thus to your campaign. Therefore, a flexible and efficient e-Strategy needs to be an integral part of the global political and media strategy of any political actor to achieve his/her objectives.

Local & Regional Authorities: Scenarios, Tools & Perspectives

The session addressed the deployment of value-added public electronic services so that citizens can fully benefit from the Information Society. Local and regional initiatives, tools and trends for improving the life of citizens and communities were the focus of this session, which covered healthcare, the use of smart cards, education, e-Democracy and e-Government, among other issues. The goal was to leverage know-how and experience into international co-operation.

The session's **moderator, Miriam Sapiro, President, Summit Strategies International in the USA**, opened this last session of the Global Forum by noting that we would shift attention away from providers to end-users and the entities that facilitate their interaction. With parts of the globe better connected than ever before, and other parts not yet enjoying such benefits, she said the time is ripe to assess the extent to which (1) we have been able to harness new technologies to realize civil society goals and reap the benefits of an Information Society; and (2) to the extent we fall short, what needs to change. These questions, of course, should be addressed in the broader context of a transatlantic economy that generates \$2.5 trillion dollars, as well as increasing concern about the looming demographic crunch, lagging growth and less than stellar productivity. To what extent, we must ask, can broader deployment of ICT infrastructure and applications by public institutions and enterprises help address these challenges? Significant strides have already been made in e-Health, e-Learning and e-Government, but clearly more can be done. The two afternoon panels, she noted, will explore precisely what has been accomplished, and the challenges that lie ahead.

The **chair** of the session, **Christopher Varian, Director Public Affairs Europe, Kodak Health Imaging, UK**, [www.kodak.com], one of the main sponsors of the Global Forum 2004, introduced the session by presenting the following remarks:

The Transition from Island Healthcare Information Systems to Integrated Care Record Systems

Today only 1% of the total healthcare budget is spent on ICT. As the population in Europe grows older and the pressure on government healthcare budgets augments, the EU wishes to increase the investments on ICT in the health sector in order to make it more efficient in the future.

The challenge for ICT in healthcare consists of providing appropriate clinical information at the point of care to improve efficiency and quality. Many complex issues need to be addressed in order to make the transition from island healthcare information systems to integrated care record systems. For example, the healthcare process and the interdependences between the departments, hospitals and clinicians are very complex. Legacy information systems need to be integrated to provide the clinical pathway. There is also a need for validation of patient identification validated and the migration of data in island systems as well as a strong security and authorisation system of access to data.

In the standard hospital environment today, each clinical system (such as radiology, cardiology, and laboratory) acts as an isolated island: each system has different vendors and

isolated archives and there is no sharing of infrastructure or of information base. Archives may even be located at different sites.

With the exploding growth of digital information, mainly in imaging, Kodak has developed a system that will automate clinical information at the point of care, thus bridging the gap between existing archiving islands in hospital environments. It is a solution that simplifies the complexity of the healthcare process by providing a longitudinal healthcare record, enables legacy information systems to be integrated to provide a clinical data repository and ensures an appropriate unique patient identifier. It reduces costs by Enterprise Information Management by consolidation and simplification and it uses existing industry standards and file formats such as IHE, DICOM, HL7, XML, or FTP.

VIParchive is Kodak's revolutionary storage management software platform that provides centralized, enterprise-wide management of images and information. This flexible platform can accommodate both DICOM and non-DICOM information distributed across multiple sites, storage platforms and architectures associated with clinical and back office systems. VIParchive provides a virtual information repository for short-term storage requirements as well as long-term image and information preservation.

The first speaker, **Bent Christensen, President, Lund University Hospital & Former CEO, Medicon Valley Academy**, Sweden, described

The Hospital of Tomorrow

Bent Christensen presented, from both a health-care and IT perspective, a mix of the long-term vision of convergence of bio-medico-health-administration of the hospital of tomorrow.

The present status at a few hospitals was illustrated via three snapshot cases: 1) Case One evoked the costs of a mistake in the transferring of patient data from one system to another, leading to a false medication of a patient. Therefore, a high level of security and data handling is also a question of patients' security. Hospital managers are very interested in developments on the issue of security. 2) Case Two highlighted a recently, successfully tested new medical image transferring system in the region. Hospitals in the southern part of Sweden can now transfer pictures between them. This means that it is possible from a distance to provide other hospitals and patients with the competence in the University Hospital and spread knowledge for the benefit of all the patients in the region. 3) Case Three pointed at the fact that a nurse's working time amounts to 40% patient time and 60% administrating data and patient documentation. If the latter could be handled in a more efficient way by means of IT, and the patient time could be increased by 10-20%, it would be equal to recruiting 200 new nurses to a hospital the size of Lund University Hospital.

As of today, hospitals are brick platforms for the meetings between diseased citizens and medical competencies. In the future, access for patients to medical knowledge and technologies will still be the cornerstone in all medical services. But the bricks will to a very large extent be replaced by standards, interfaces and virtual environments. Hospitals will turn into networks of competencies spread all over the world, having both the ability and the capability to combine and concentrate knowledge toward any single diseased individual whenever needed. Thus the patient may be situated in Malmö, the Laboratory specialist in Phoenix, the interpretation of ultrasound examinations will be performed by the medical imaging expert in Bordeaux and the surgeon in Lithuania will be performing remote controlled robot assisted surgery. This technology is only a few years away.

As no patient in the future wants to be a doctor's "first case", virtual web supported training facilities and super empowerment technologies will gain increased importance. The possibility to see inside the virtual patient means whole teams can learn new procedures before going into the operation theatre. With the help of the Kamprad Foundation, Lund University Hospital will in only 2-3 years time have the most fantastic Skills Centre in Europe.

All the technology needed for this Hospital of Tomorrow is already here today. It just needs to be connected. The major obstacles to overcome include the current lack of common standards, different systems and, especially, the question whether politicians and managers dare to move forward on the issue.

Ulf Persson, Sales Manager Healthcare, Atos Origin, Sweden & Patrice Cristofini, Healthcare Director, Atos Origin, France, presented the original topic:

Atos Origin Global Healthcare Strategy – The Mona Lisa Prototype

Atos Origin has built the Mona Lisa prototype, that can help address some of the challenges in the eHealth sector. Using modern technology and the Internet, the Mona Lisa system gives online access to medical and social services in real-time during doctor-patient consultations and greatly reduces the amount of paperwork (prescriptions, administrative forms, test results, billing, appointments, etc...) for the medical doctor.

Mona Lisa gives access for new online services for each stakeholder (healthcare professionals, institutions, citizens, companies). The technology is ready to give access for patients in a secure way to his or her medical records. The system is based on market standard tools and uses state of the art security. As such, Mona Lisa is a major economic opportunity in the modernisation of the health sector.

By simply connecting to the Internet via his web-browser, the medical doctor can access several types of services throughout the Internet as well as connecting into other social services depending on need and situation. The prototype includes several functions: Electronic patient record; Electronic transfer prescription; e-Forms; Billing for both compulsory and complementary insurance and; Emergency data management.

The most important aspects of the system are however its connection, identification and authentication functions for the patient as well as the medical practitioner that permit display, read, update and control access to secured patient data on an open network.

It is important to keep in mind that the medical record is the property of the patient. Therefore it is necessary to build a solution supporting secure exchange of data. Because there are different rules and legislation in each country, another challenge is to build connectivity between all the systems in different countries. The Mona Lisa prototype has been built to be adaptable to different situations and different countries.

Laura Aho, CEO, Access International Consulting, Finland, outlined the specific and interesting case:

Case eTampere: Turning Services into eServices Through a Local Smart Card Scheme

As a concrete example of how local authorities are taking full advantage of the new technologies, Laura Aho gave an overall picture of the Smart Card pilots in the City of Tampere, Finland. The project was not so much about Smart Cards, as about creating an electronic identity for the citizens and how the City uses them within different electronic services. What the city is aiming at from this development is to see to that there would be some sort of a Citizens "one-stop-shop" in the Internet to access the wide variety of services provided from the local government, but also from other organisations. In the future, citizens will have their electronic identity to access a number of services. A variety of tools (smart card, mobile phone or other devices) could be used for this depending on the consumer's needs. The experiences gained show that a lot can be done with the technology already available today.

The City card project is taking form within the framework of the five year eTampere programme, aiming at making Tampere a model information society. This programme includes not only the development of e-Government services, but a number of sub-programmes from e-Business to technology for the area.

People in the city are already used to using a variety of Smart Cards and their willingness for new services has never been an obstacle for development. A successful Travel Card Scheme is in place since 1997. The same card was later extended to including entrance to the swimming halls. Finland was also the first country in the world to create a national electronic identity card. Unfortunately the Government did not make it mandatory. Therefore a very low number of Finnish National ID cards are today in circulation. This is why there is a need for the City to develop an own card, even though the ideal would of course be just to have one card to access all the services of the City.

Tampere has so far piloted more than ten services. The services such as public transport, swimming halls, lunch payment, and physical access control have been easily put in place using standard technology. The stronger focus has therefore been on electronic services, such as e-Health, e-Voting, citizen democratic services, etc, which are continuously being developed. As an example, local schools are being very active in making electronic forms and workflows around the scheme and 5000 pilot cards have been issued to students to access these services.

Results from a user study show that over 80% use the card in public transport. Somewhat unexpectedly 8% say they now use more public transport services than before. Noticeable is also that over 50% say strong authentication is important, meaning that citizens are becoming more aware of the security issues, especially when moving into critical areas such as healthcare services.

Presenters: Rosa Bruno-Jofré, Professor and Dean of Education, Queen's University, Canada & Frank Huntley, President, Kingston Software Factory, Canada.

Authors: Rosa Bruno-Jofré, Frank Huntley, Joe Stafford, Algonquin & District School Board, Jeff Moxley, GRIDS Ltd.

*Exploring Our World – A Journey through Space:
The Teaching of History through the Virtual Globe*

How do children learn? How do we teach? Researchers in education are often frustrated by the fact that the technological applications for education have so far shown very little

sensitivity to such fundamental pedagogical issues. Based on this the Faculty of Education at Queen's University has entered into a partnership with the Kingston Software Factory, a research and development business consortium that is imagining a new world of teaching and learning through technology, in order to develop educational technology embedded in educational aims and in pedagogical principles.

One of the major outcomes of this collaboration is the Virtual Globe project. The Virtual Globe is a 3-D visualization of a globe that allows you to zoom in with theoretically infinite detail on global datasets, and whose underlying mathematics supports extended mathematical modelling and pattern recognition. One of the Kingston Software Factory's members, GRIDS Ltd, has worked with researchers from various institutions, including Queen's University, to create a fully three-dimensional interactive globe that provides anyone the ability to display and manipulate global geospatial data, particularly those with Internet access, through a project that is supported by the Canadian Space Agency. The Faculty of Education and its partners use these technologies to create 3-D interactive curriculum. One of the curriculum models is an inquiry model that explores the turbulent world of the 1960's and 70's with the educational aim of understanding democracy as a way of being and of acknowledging the relevance of education as a transformative process. Through a variety of approaches, including physical, representative, collaborative, data rich and alternate-media approaches, the Virtual Globe provides (1) accessibility to primary sources and other historical research resources, and (2) encourages the building of historical arguments across cultures by facilitating the involvement of teachers and students across the world. The Virtual Globe provides means to deal with discipline based standards and constructivist pedagogy that pays attention to the way children make sense.

Patrick Dupont, B to B Development Manager, Ingenico, France, presented on the challenge of introducing e-Cards.

The Daily Life e-Card

With a 24% market share, Ingenico is the world's largest provider of payment and transactions systems used by banking, retail, petroleum, transportation and government agencies to accelerate and secure the flow of electronic commerce. The Company's 1300 employees working in 21 subsidiaries, as well as a network of a hundred partners and distributors annually deliver more than 1.5 million payment terminals in more than 80 countries. These payment systems leverage technologies such as biometry, touchscreen technology, GPRS communications and Bluetooth™ to deliver cost effective performance.

Traditionally dealing with hardware, Ingenico decided four years ago to launch a new market in view of the planned modernisation of the French administration. Ingenico is now involved on 3 major projects: the electronic ID Card, the Purchasing Card and the Daily Life City card.

With the daily life card, Ingenico is participating in the virtualisation of the French public services, making it easier and more efficient to deal with the local town hall. The service is giving access to forms and possibility to fill them in online and send them to the town hall. The town hall handles the request electronically, issues the desired certificate, signs it electronically and sends it back either by e-mail or as a hard copy. This process that used to take four days is today almost instantaneous. Citizens can connect to the service from any computer connected to the Internet, from the public access point put in place in the town hall, or from a telephone linked to a voice driven service for those who can't or do not want to use a computer.

The tests in the small city of Gluiras in the south of France have been successful and collaboration is in place with a large number of towns and on more types of services. End of 2004 will see the real start of e-administration in France at the service of the end-user, and devised for the end-user.

Mary Reid, Councillor, Royal Borough of Kingston upon Thames & Chair of the Project Board, United Kingdom, presented on:

The National Project for Local eDemocracy, England

A project enhances democracy if it supports representative democracy, engages citizens, makes decision-making transparent, manages conflict as well as consensus, improves political equality and does not increase the digital divide, as well as if it increases community control over decisions that are made to affect them.

The UK Government is funding the largest e-democracy project in the world. 6 million euros have been allocated to the National Project in Local e-Democracy, to run from November 2003 to March 2005. This project focuses on e-participation at the level of local government, where there is great potential for interaction between citizens and decision-makers. Sponsored by the Office of the Deputy Prime Minister, the project is being managed by a range of local councils, and will produce e-democracy toolkits that can be taken up by any council in the country.

The strategy toolkit, including business cases, business planning and guidance materials will give the tools and information a local authority needs to design a sustainable e-Democracy strategy. For implementing the strategy, several e-Democracy tools are being produced for councillors, councils, partner organisations and communities, such as a national councillors database, websites and online surgeries; methods for e-Citizens' panels, e-moderation, e-petitioning and policy tracking; methods for joint work on information sharing and consultations; tools and methods for implementing online communities, text alerts, interactive webcasting, blogging, websites for elderly, involving young people, etc. These tools will be ready at minimal cost by end of March 2005 for people to share with local authorities. The tools for self-assessment will enable councils to evaluate their progress in relation to the rest of the country.

The toolkits are underpinned by a Knowledge Pool at www.e-democracy.gov.uk, a Best Practice Database providing access to various research reports, a funding database, baseline surveys, literature reviews and a wide range of case study information on e-Democracy and its tools at all levels of government within the United Kingdom and abroad.

As the first speaker of the second part of the session, **Kerstin Wiss Holmdahl, Legal Advisor, Swedish Association of Local Authorities, Sweden, gave a presentation on:**

e-Invoices: Cooperation in Sweden for a Standard

Kerstin Wiss Holmdahl (responsible for the work with promoting e-Commerce and e-Procurement in local authorities and county councils in Sweden) described how the introduction of e-invoices in local and regional authorities can benefit the local community in

terms of a more efficient administration and procurement, including cost savings and increasing quality, such as increased price awareness, reduced invoice processing time, improved financial control as well as better and easy available statistics.

A working group for e-Invoices was established in May 2003 in Sweden. As a result, since June 2004 there is a new common standard for e-invoices ("Svefaktura" / "Swed-invoice"), which has been developed in cooperation between sellers, buyers, IT companies and banks and which is based on international standards. Solutions based on this standard are available from fall and winter 2004. Public procurement orders in Sweden are also made electronically and are integrated with the invoicing procedure.

The public-private cooperation set up to establish the e-invoices has not only resulted in e-invoices for the public sector, but also for business to business. Some of the IT companies and banks that have assisted with the project plan to implement the e-invoice standard, as well as co-operate with the Confederation of Swedish Enterprises.

The next step would be to enlarge this co-operation to a European scale in order to establish cross-boarder invoices and thus further promote e-Commerce on a more global scale. Knowing that legislation is very similar in other countries, implementation should be possible. The most difficult part would be to convince the SMEs.

Baudouin de Sonis, Executive Director of the e-Forum Association, Belgium, presented the interesting topic of

eGovernment Learning Journeys: Knowledge Management in Action

e-Forum brings together all interested parties active in the field of e-Government in Europe, from both the private and public sectors. It aspires to be a network for the exchange of ideas, a gateway to the latest e-Government information, and a showcase of e-Government excellence. It will facilitate sharing and tracking of best practice, and bring the public and private sectors together to improve European e-Government competitiveness.

The key objective is to play a very active role in transforming local, regional and central government, adding real value to the community, to share information on successful, leading-edge e-Government implementations, to establish partnerships better to serve the EU e-Government market, to promote the success of EU e-Government to all, and to develop an atmosphere of professionalism that encourages EU e-Government people to achieve their very best.

The e-Forum is the neutral reference point of contact in Europe for all e-Government matters. It debates and put forward new e-Government proposals and focuses on priority topics through working groups and publications. It is visible through a website with rich content and publicises the importance of e-Government in Europe. It organises major annual conferences and has launched "Learning Journeys" to fasten the exchange of best practices.

As of today everybody is talking on "Good practices exchanges". On the Internet there are very good examples of "framework, data centres, e-Gov observatory, prices ceremony results, resource centre or repository", etc... However, very few or even none of these tools give a detailed approach of the methodology, the tools and/or the platforms used in order to help you to take advantage of the said good practice. e-Forum has launched the Learning process in order to remedy this fact. "Learning Journey" consists in: visiting the team on site;

tacit knowledge versus explicit; two way questioning; limited number of attendees; interactivity is key; persistent pursuit of details; in depth one day session; presentation by team members.

The follow-up of this action is the launch of working groups around selected good practice (national, regional, local, and security), including direct involvement of the people having developed the said "good practice", who will chair the working group. These working groups will gather representatives from the public sector interested in importing the good practice into their own services. The approach is a "building block" approach, where we will identify the software used, the needed tools, possible regulation roadblocks, etc... The main target of the working groups is to support contractual agreements, such as joint ventures, public-private partnerships, Memorandums of Understanding, contracts, in between two or more administrations.

This interaction bringing together academics and the public and private sectors makes e-Forum the only place in Europe to really discuss, share, challenge and develop innovative e-Government concepts and models.

Jeannette Viale, Vice President, TeleCities, [www.euocities.org/telecities/], one of the supporting sponsors of the Global Forum 2004, & **Senior Advisor for the Board of Directors, City of Naestved**, Denmark, gave a very clear introduction to

TeleCities – A Framework for the Knowledge Based Society

TeleCities is a network of 130 European cities focussed on how to use technology for developing local societies in a knowledge-based economy. Local authorities have a key role to play in the development of an inclusive Information Society. They are the authority closest to the citizens and are providers of services, such as health, learning, banking, sport, and culture. TeleCities is the major European network of cities committed to leadership in the Information and Knowledge Society. Established in 1993 as a Eurocities' sub-network, TeleCities is open to democratically elected city governments as well as to business and scientific partners. It provides a platform of over 100 local authorities from 20 different European countries, sharing experience and developing practical solutions to achieve an Inclusive Information and Knowledge Society.

The overall objective of TeleCities is to learn from shared experiences and practices, to transform these into ideas and recommendations for future policies, and to accomplish a range of surveys and set-up project initiatives. The work of TeleCities focuses on four broadly defined challenges: Overcome the barriers to an inclusive Information Society (Broadband access for all, e-Learning, e-Inclusion, e-Health); the promotion of a Charter of European e-Rights (accessibility rights, information rights, rights to training and education, participation rights); the promotion of a knowledge based industry (ICT clusters/ innovation, services to businesses, life-long learning), and; to promote the modernization of local public administration through e-Government (re-engineering processes, e-Security, risk management, participative democracy and ICT, knowledge management, interoperability between administrations).

TeleCities has also established co-operation with Deloitte to develop a yearly benchmarking study and Award on e-Citizenship for All. The main results of the first year edition have been a database, owned by TeleCities and freely accessible by its member cities, containing specific information on their individual state as to the four aspects of e-Citizenship for All: re-

engineering processes, e-Democracy, security and data protection, e-Learning and inclusion. Thanks to the Database, the member cities of TeleCities are able to get access to and learn about other cities' state and strategies in the relevant fields as well as to have an overall picture of where European cities stand in the Information Society broader developments.

A few questions for the future were raised: How can we enable cities to strengthen the approach of working "out-side-in" – more user-demand-driven – and still without creating a "democratic deficit" – maybe we need a redefinition of (e)Democracy? How can we enable cities and regions to improve tools at "micro-level" to uncover some of the somehow invisible profits coming from the knowledge based economy in practice? How can we enable cities and regions to be even more social innovation driven (businesses, universities, citizens and authorities) within the European goals of an inclusive society? TeleCities will continue to deal with these issues.

David Wood, Councillor, Newcastle City Council, UK, [www.newcastle.gov.uk], one of the supporting sponsors of this year's Global Forum, shared his vision of

Smart Card Identity Management in the North East of England

The North East Regional Smartcard Consortium (NERSC) consists of the 26 Local Authorities in the North East region, as well as One North East, the transport operators and the PTE (Nexus). Together they are developing a strategy and governance framework for the implementation of a region wide multi application citizen smart card that can be used for travel throughout the North East Region, to support local authority public services as well as other commercial applications.

The objective is to develop an infrastructure of shared and trusted services via the creation of a Regional Smart Card Platform, which could support multiple brands; offering a variety of card supported applications to residents, businesses and visitors in the region. The aim is to develop a "build once, use many times" infrastructure (regional hub) that is capable of storing or accessing multiple brands and multiple applications and of supporting 2.7 million users by 2010.

So far NERSC has implemented a variety of projects across the region focusing on schools, leisure and transport and is supporting approximately 40,000 customers. These systems have largely been successful and demonstrated user acceptance. The e-Learning and e-Government project (2004/2005) commenced the development of core elements for the regional Trusted Services Network (TSN). Via a partnership with Sunderland College and Sunderland football club, it provides the means of registering and creating an identity for up to 40,000 users with the ability to scale up to 100,000 users. The Regional Project (2005/2007) will have significant impact on the speed and route for development of the TSN in subsequent years extending the scheme with a further 250.000 Smart Cards for e-Learning, health and social care, concessionary travels, culture and tourism.

As the scheme moves towards a wide scale regional rollout, NERSC addresses the region's challenges by joining up the regions objectives, coordinating across partnership boundaries and federating services. The creation of trusted third party services and the joining up across boundaries will make the Smart Cards the key aids for mobility that supports users in the Region throughout their daily life.

Tomaz Stebe, Mayor of Municipality Menges & Vice President, Slovenian Association of Municipalities, Slovenia, discussed:

European Information Infrastructure (EII) – A Local Authority's European-Wide Perspective

The presentation was based on the opinion on “Connecting Europe at High Speed: National Broadband Strategies” done for the Committee of the Regions of the European Union. It focused on opportunities and proposals, ambitions and expectations, worries and threats for local authorities, SMEs and Citizens in view of reaching the Lisbon goals (Europe as a knowledge-based and competitive continent). The key element is the widespread – and huge -- throughput communications availability and affordability of secure, trusted data, document and multimedia content on-line, and real-time advanced e-Services processing in urban as in rural or less favoured areas.

We are today far behind in achieving the goals of Lisbon 2010 Europe. However, it will in great part still be possible through highly ambitious goals of the Information Society for all, based on a superior ICT infrastructure. The targets and strategies set up are ambitious: fibre optics connecting every European final user with a minimum of 10 Mbps (25% at the end of 2006; 70% at the end of 2010); bandwidth and availability to ensure IP telephony for nomadic users (end of 2006); reasonable pricing of monthly broadband connection costs with 10Mbps throughput, secure Internet and trusted transactions, multimedia IP telephony, digital TV/Radio (multimedia) broadcasting (digital rights not included) by the end of 2006; online, reliable, secure, authentic and trusted exchange of multimedia data and documents (end of 2006); distributed, interoperable, complex, hierarchical data access and update (end of 2007), and virtual or simulated environment and real processes access and control in real-time (end of 2008).

Not only are the physical and hardware side of the communication infrastructure important for businesses, administrations and citizens; a key aspect in the evaluation of the progress is the evolution from connectivity to content. Integrated internet broadband infrastructure requires content and services to promote demand and take-up. Instead of digital divide, we should make every effort for every citizen to enable digital opportunity.

The main point of the European Information Infrastructure is to yield economy and quality of life improvement. Efficiency and impact shall be the consequence of new services from innovative entrepreneurs and administrations. This in turn will depend on human values, culture and society management.

●●● CLOSING SESSION

●●● DAY 2 – AFTERNOON – PLENARY SESSION

During the closing session, the attendees of the Global Forum have been invited to participate in a tombola organized by **SONY ERICSSON**, [www.sonyericsson.com], one of the main sponsors of the Global Forum 2004. The lucky winner received the latest Sony Ericsson mobile phone.

In his concluding words, **Councillor Kent Andersson**, Vice Mayor of the City of Malmö, Sweden, reminded the participants of the fact that half of the world is talking about Internet and Broadband, whereas the other half of the world's population is still waiting to make its first phone call. Bridging the digital divide is still one of the most important challenges to face and international efforts and networking events like the Global Forum are crucial for bringing forward joint actions and strategies helping to meet this challenge. The City of Malmö is proud of being the hosting city of the Global Forum 2004 and Councillor Andersson thanked the participants and speakers for coming to Malmö in order to share ideas and valuable experience during these two days.

Senator Pierre Laffitte, President of the Sophia Antipolis Foundation, France, thanked the participants of the Global Forum 2004 for their commitment to the Global Forum's vision of shaping the future together and encouraged them to continue their efforts. Senator Laffitte also complimented those who organized and hosted this event by stressing that the Global Forum is not only an important event but one of the most important co-operations of the world.

Before closing the Global Forum 2004, **Sylviane Toporkoff**, President of the Global Forum & Associate Partner of ITEMS International, France, thanked the chairpersons and moderators for the excellent sessions this year, as well as the sponsors of the Global Forum for their valuable support and generosity. Special thank was given to the City of Malmö for its welcoming hospitality and its strong commitment to making the Forum a success. By expressing her appreciation for the efforts of each attendant of the Forum to work towards collaborative efforts that will benefit societies around the globe, as well as for the Global Forum's network which supports bringing together the right persons at the right time, Sylviane Toporkoff thanked the participants for sharing their views and ideas and expressed the hope to see everybody again next year for the Global Forum 2005.

Sébastien Lévy, Vice President of the Global Forum & Associate Partner of ITEMS International, France, thanked all the participants for attending and for contributing to a very successful event. He wished everyone a good journey back home and emphasized that ITEMS International is already looking forward to the Global Forum 2005.

CONTACT

The conference programme, presentations and slides, speakers' profiles, press reviews, and related information on the Global Forum 2004 are available on the website of ITEMS International www.items-int.com, as well as on the websites of the Foundation Sophia-Antipolis www.sophia-antipolis.org and the City of Malmö www.malmo.se.

Please do not hesitate to contact ITEMS International if you need any help to get in touch with the participants of the Global Forum 2004.

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It is important to us to get your feedback. As we try continually to improve the Global Forum, your comments and suggestions are always appreciated.

The team of ITEMS International will readily give you all information on the upcoming Global Forum 2005 taking place in autumn 2005 in France.

ACRONYMS AND ABBREVIATIONS

ARPU	Average Revenue per User
CERT	Computer Emergency Response Teams
cTLD	Country Code Top Level Domain
DG	Directorate General
DICOM	Digital Imaging and Communications in Medicine
DNS	Domain Name System
DOS	Disk Operating System
DSL	Digital Subscriber Line
DTT	Digital Terrestrial Television
EAN	European Article Numbering
EC	European Commission
FCC	Federal Communications Commission
ENISA	European Network Information and Security Association
EPC	Electronic Product Code
ERG	European Regulatory Authorities Group
ESRP	European Security Research Programme
ETSI	European Telecommunications Standards Institute
EU	European Union
EUREKA	European Research Coordination Agency
FASB	Financial Accounting Standards Board
FP	Framework Programme
FRIACO	Flat Rate Internet Access Call Origination
FTTH	Fibre to the Home
FTTP	Fibre to the Premises
FTP	File Transfer Protocol
FWA	Fixed Wireless Access
Gbps	Giga bits per second
GDP	Gross Domestic Product
GNP	Gross National Product
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
gTLD	Generic Top Level Domain
HL7	Health Level 7
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	Information and Communication Technologies
ID	Identification/ Identity
IETF	Internet Engineering Task Force
IHE	Integrating the Healthcare Enterprise
IP	Internet Protocol
IPR	Intellectual Property Right
IPTV	TV over IP
ISI	Information Society Index
ISOC	The Internet Society
ISP	Internet Service Provider
IST	Information Society Technologies

ITU	International Telecommunication Union
LAN	Local Area Network
Mb	Mega-Bytes
Mbps	Mega bits per second
MPEG	Moving Pictures Experts Group
MP3	MPEG Layer 3
MSRC	Media Security and Reliability Council
NGN	Next Generation Network
NRA	National Regulation Authority
NRF	New Regulatory Framework
NRIC	Network Reliability and Interoperability Council
OECD	Organization for Economic Cooperation & Development
OECD ICCP	OECD's Information, Computing and Communications Policy Committee
OSS	Open Source Software
PIN	Personal Identification Number
PLA	Power Line Access
PSTN	Public Switched Telephone Network
PTE	Passenger Transport Executive
P2P	Peer-to-Peer
Q&A	Questions & Answers
QoS	Quality of Service
R&D	Research and Development
RFID	Radio Frequency Identification Standard
RTD	Research and Technological Development
R&T	Research and Technology
SME	Small and Medium Sized Enterprise
SMS	Short Message Service
SP	Service Provider
SSL	Secure Sockets Layer
Telcos	Telecommunication companies
TSN	Trusted Services Network
TV	Television
UK	United Kingdom
ULL	Unbundled Local Loop
UMTS	Universal Mobile Telecommunications System
UN	United Nations
UNIRAS	UK Government's CERT
UPC	Universal Product Code
US	United States
USO	Universal Service Obligation
VoIP	Voice over IP
WARP	Warning, Advice, Reporting Point
WHO	World Health Organization
Wi-Fi	Wireless Fidelity
WiMax	Worldwide Interoperability for Microwave Access
WLAN	Wireless Local Area Network
WSIS	World Summit on the Information Society
XML	Extensible Markup Language
3D	3 dimensional
2G	2 nd Generation
3G	3 rd Generation

ANNEX 1: PRESS REVIEW



Dagens industri
Onsdag 3 november 2004
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Onsdag 3 november 2004

AFFÄRSNYTT

Idéer möts på it-mingel i Malmö

Öresundsredaktionen
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MALMÖ
Det har kallats för it-branschens Davosmöte. I morgon träffas 200 speciellt inbjudna beslutsfattare från 25 länder i Malmö stadshus på konferensen Global Forum.

"Konferensen har två syften. Dels att ta del av vad som händer i branschen och därmed förstå framtiden bättre, dels att vara en mötesplats för olika aktörer och öppna nätverken", säger Sylvaine Stoporkoff, VD på franska Items International.

Items International organiserar Global Forum tillsammans med forskningsbyn Sophia-Antipolis Foundation, Malmö stad och en rad sponsorer som EU-kommissionen, Microsoft, IBM och Sony Ericsson.

Konferensen ska också knyta ihop olika utvecklingsprojekt i branschen och vara en plattform för diskussioner.

"Önsade möjligheter"
Deltagarna är ofta konkurrenter på marknaden men till Global Forum bjuds man in för att marknadsföra sina idéer och inte sina produkter, understryker Sébastien Levy på Items International.

SAMVERKAN. Sébastien Levy och Sylvaine Stoporkoff på Items International, en av arrangörerna bakom it-konferensen Global Forum, räknar

"Här ges oönskade möjligheter att träffa verkliga toppar i branschen, som Suns teknikchef John Gage eller den säkerhetsansvarige på Microsoft, vid fikabordet", säger Peter Höjerback, VD på IT Öresund.

Flera deltagare kommer också från statliga och överstatliga organ, regioner och städer.

Årets kongressstema är konvergens. Ett seminarieämne är e-learning, distansstöd distansundervisning, ett annat är hur sjukvården kan använda it för att ge människor bättre vård.

Öresund har it-kuster
"Öresundsregionen är perfekt som exempel på konvergens mellan

med intressanta idéutbyten under dagarna i Malmö.

sjukvård och it. Här finns starka kluster av it-företag samt hela Medicin Valley. Var för sig har vi inte lyckats positionera regionen som vi nu kan göra tillsammans", säger Peter Höjerback.

Global Forum har hållits varje år sedan 1992. Årets upplaga äger rum i Malmö stadshus i morgon och på fredag.

* Dagens Industri is Sweden's most important Business Journal.

IDEAS MEET AT IT MINGLE IN MALMÖ

It has been called the Davos meeting of the IT industry. Tomorrow, 200 specially invited decision-makers from 25 different countries will meet in Malmö Town Hall for the Global Forum Conference.

“The Conference has two purposes. Firstly, to keep up-to-date with the new developments in the business and hence better understand the future, and; secondly, to be a meeting place for different actors and open up the networks”, says Sylviane Toporkoff, from the French company ITEMS International.

ITEMS International organises the Global Forum in collaboration with the Science Park Sophia-Antipolis Foundation, the City of Malmö, as well as with a number of sponsors, such as the European Commission, Microsoft, IBM, and Sony Ericsson.

The conference aims at establishing different development projects in ICT and be a platform for discussions.

“Great opportunities”

The participants are often competitors on the market, but to the Global Forum you are invited to market your ideas and not your products, underlines Sébastien Lévy from ITEMS International.

“There will be great opportunities to meet, over a cup of coffee, the real top personalities in the industry, such as the CTO of Sun Microsystems, John Gage, or Microsoft’s chief of security, says Peter Höjerback, CEO for Øresund IT.

A number of delegates also come from national and international organisations, regions and cities.

The theme for this year’s conference is Convergence. One issue that will be debated is “e-learning”, computer aided distance education, another issue regards how IT can be used in order to give people better healthcare.

Øresund has IT clusters

The Øresund Region is a perfect example of convergence between healthcare and IT. In the Region you will find strong clusters of IT companies as well as the entire Medicon Valley. We work together in order to position the region, says Peter Höjerback.

The Global Forum has been held every year since 1992. This year’s edition will be held tomorrow and Friday (04-05/11) in Malmö Town Hall.

(Translated by Paulina Lundqvist, ITEMS International)

IT-världens Davosmöte invigs i Malmö

► Malmö lockar till sig allt fler betydelsefulla konferenser. Idag invigs det som ibland kallas för IT-branschens Davosmöte. Global forum heter det två dagar långa IT-mötet med 200 inbjudna beslutsfattare från 25 länder.

Bland deltagarna finns dataföretagen Suns vice vd John Gage och Bulls vice vd Geraldine Capdeboscq, Microsofts europeiske ordförande Patrick de Smedt, Frankrikes tidigare premiärminister Edith Cresson och Pierre Lafitte som grundat den franska forskarbyn Sophie Antipolis.

Konferensen handlar dels om vad som kommer att hända i IT-branschen, dels om att skapa en mötesplats för aktörer och nätverk. Arrangör är franska Items International tillsammans med Sophia-Antipolis Foundation, Malmö stad och sponsorer som Sony Ericsson, IBM, Microsoft och EU-kommissionen.

THE DAVOS MEETING OF THE IT WORLD OPENS ITS DOORS IN MALMÖ

Malmö is attracting more and more important conferences. Today is the inauguration of what is sometimes called the Davos meeting of the IT world. This two day long IT meeting, called Global Forum, gathers 200 invited decision-makers from 25 countries.

Among the participants the Vice President of Sun Microsystems, John Gage, the Vice President of Bull, Geraldine Capdeboscq, the Chairman of Microsoft EMEA, Patrick de Smedt, the former Prime Minister of France, Edith Cresson, and Pierre Lafitte, founder of the French Science Park Sophia Antipolis.

The conference deals partly with new developments and trends in the IT industry, partly with creating a meeting place for actors and networks. Organiser is the French company Items International in co-operation with the Sophia Antipolis Foundation, the City of Malmö, and sponsors such as Sony Ericsson, IBM, Microsoft, and the European Commission.

(Translated by Paulina Lundqvist, ITEMS International)

ANNEX 2: DOCUMENTATION ON EUROPEAN RESEARCH INITIATED BY SENATOR LAFFITTE



Mission Statement (document approved on September 12th 2004)

ELITE recognises the importance of innovation as the main source of competitiveness and sustainable economic development and its actions will serve the worldwide community and in particular will re-enforce the Lisbon commitment, to make Europe “the most competitive and dynamic knowledge-based economy in the world by the end of the decade”. To achieve this ambitious goal Europe’s existing innovative potential should be used and networked as effectively as possible.

ELITE will act as a driving force in the achievement of the 2002 Barcelona objectives in particular that of increasing European Countries and Union expenditures on R&D and innovation by at least and if possible more than 3% of GDP by 2010.

ELITE will be an independent, non-profit, visionary group, committed to pushing Research & Innovation policies forward and better integrating them into society. **The members are independent, inspired and motivated persons of high economic and political influence from different backgrounds with proven expertise in recognised organisations and with strong personal networks.** This group aims to generate, influence, support and leverage actions to get the most out of European Science and Innovation supported by the know-how and motivation of the group and its network members (entrepreneurs, financiers, scientists, academics, politicians, etc.)

ELITE will form an interface between Europe’s knowledge-based industries, partners of the innovation system, European authorities and policy makers, using their experience and networks to nurture the development of new innovation policy actions that will bring Europe to the leading edge of innovation in any field, social, economic, management, technology, etc.

ELITE recognises the role of entrepreneurs and especially SMEs and will help them to become a leading part of the European and global innovation system.

ELITE will also be an interface between all of the international organisations dealing with R&D and innovation and financing, promoting a balanced dialogue between the different constituencies of its members and networks, spanning all aspects of economic sustainable development.

ELITE will seek to achieve its objectives in the following ways:

- Through sharing common experiences and learning from best practices
- Nurturing the creation of a European competitive advantage of employment and wealth

- Raising awareness and suggesting new mechanisms with a vision to broaden public / private cooperation in the field of finance, research, adapting education and innovation
- Supporting organisations in charge of local development (chamber of commerce, development agencies, municipalities, universities, etc.) especially in the creation of young innovative companies and developing innovation culture in companies and in their growth processes
- Presenting and enhancing national, EC and Eureka proposals on innovation, research and policy
- Networking with think-tanks, laboratories of ideas in Europe, organisations and territories/regions of excellence
- Increasing awareness of and acknowledging new ideas, disseminating new proposals and spreading an innovation culture.

Democratisation of scientific and entrepreneurial culture is the best way to develop the necessary public acceptance of innovation in Europe.

Priority actions to take innovation in Europe forward:

- To greatly increase the European Commission's "Mobility" programme by extending the benefits of the system to technicians and engineers, and companies and technological start-ups.
 - Immediate expected effect: this would encourage an attractive broad European space for innovation and would have a positive impact on pan-European cooperation in science and industry.
- To consider new and flexible finance procedures in order to allow the Networks of Excellence (and FP7 technological platforms) to develop in size and structure to create higher added value.
 - Immediate expected effect: this could stop the brain drain and support the brain gain.
- To give a strong support to the development of innovative environments where incubation, capital, networking, training and excellence meet to foster business creation and growth.
 - Immediate expected effect: increase the number and quality of newly created companies.
- To heavily and systematically support projects approved by the EUREKA procedures in order to give them greater scope. These projects will lie within the framework of top priority programmes.
 - Immediate expected effect: this will increase the participation of SMEs and therefore trans-national networking and will lead to better cooperation between SMEs and large corporations.
- To encourage the development of a guarantee fund with the EIB in partnership with national structures, allowing SMEs, participating in European R&D projects to be automatically considered and backed-up without any further actions being required in regards to their bank.
 - Immediate expected effect: Increase the survival rate of SMEs and boost the creation of more sustainable jobs.
- To boost growth by heavily investing in research and innovation which could be achieved through the launch of a European loan of 150 billion Euros. This 150 billion Euros is the value of the gap that exists between current expenditure on R&D and the 3% EU target.
 - Immediate expected effect: This will inverse the current European situation and increase European competitiveness and attractiveness for experts and enterprises.
 - Increase the national and European GDP and significant creation of jobs in the knowledge economy especially in the priority programmes defined by the different European enterprises, research organisations and bodies.

- Help to finance the other suggested priority actions.
- To involve the European Investment Fund significantly and in a more simple way in existing seed capital funds or funds to be created, in order to facilitate the **initial** and **long term** financing of projects. Linking regional best practices in public-private partnership to European innovation funding.
 - Immediate expected effect: Boost to the creation of a European competitive and efficient venture finance community
 - Facilitate the development of start-ups up to create European success stories.

The above priority actions are the first steps towards an “European Innovation Area” in addition to the “European Research Area”.



150 billion euros for Research and Innovation in Europe

The financial resources dedicated to innovation by the United States have exceeded those set aside by Europe by 40 billion dollars. As a result, there's every reason for concern: young European experts are drawn to the United States, driving the best teams on the Old Continent to despair.

On average, the resources dedicated to research in Europe are equivalent to 1.9% of the GDP, a long way behind the 3% in Japan or the United States. Because the difference has increased, the aim to catch up with these countries, as expressed in Barcelona and Lisbon, seems even more remote in 2004.

Furthermore, as half of the growth is linked to efforts in innovation, both in the public and private domain, a sustainable recovery of the European economy implies a spurt in scientific and technological creativity.

Launching a co-ordinated action in favour of a massive investment in innovation with our European partners is an absolute necessity for our common future.

It is vital to act now: developments seem to be speeding up while time is getting shorter. European countries linked by the Stability and Growth Pact cannot float a loan on an individual basis.

However, Europe, as such, has the international credit to do so. Upon the formal request of the Heads of State, the European countries can collectively float a major loan via the European Investment Bank (EIB) in order to finance priority investments: research and innovation.

This loan should amount to 150 billion euros, that is, 1% of the European GDP. A massive investment in research and innovation would allow European growth to be reactivated. A symposium organised at the French Senate on 30 September 2003, brought the issue to the attention of numerous major scientific, economic and political leaders. "It's a sensible loan," considered the chairman and managing director of ANVAR (the French Agency for Innovation). Industrials too found the idea attractive.

The French Government, the Prime Minister, the Minister Delegate for Industry and the Minister for Research and New Technologies greatly appreciated the initiative.

This loan should allow the following:

A – To greatly increase the European Commission's "Mobility" programme by extending the benefits of the system to technicians and engineers, and companies and technological startups. This would encourage the creation of an attractive European space for innovation.

B – To greatly increase certain connecting programmes between European centres of excellence piloted by the European Commission.

C – To reinforce the financial resources allocated to fundamental research and the major related organisations and structures (EONR, ESA, etc.).



D – To support systematically and heavily projects approved by the Eureka procedures In order to give them greater scope. These projects will lie within the framework of top priority programmes.
E – To involve the European Investment Fund more massively in existing start-up funds, or funds to be created, in order to facilitate the initial financing of project holders.

All of these methods of intervention should be piloted and assessed by the ad hoc committees, which include European figures designated by the national scientific, industrial and financial communities.

Financing the science industries

This idea – **of floating a European loan to boost growth by massively investing in innovation and research** – was received with interest by important scientific, industrial, economic and political French leaders, and is now the subject of working and planning sessions being held by European leaders.

- The first working session on this topic will be dedicated to the **electronics industry**.
- This workshop will be organised on 25 June 2004 at Sophia Antipolis (France) by the “Fondation Sophia Antipolis” and the professional unions of the electronics industry¹.
- The second meeting, dedicated to the **energy industry**, will take place in Warsaw (Poland).
- A third working session on the new information, civilian and military technologies, will be held in Malmö and Copenhagen (Sweden).

Other workshops will be organised on the financing of other major science industries. The priorities in research and innovation should be examined for various scientific and industrial entities during the working sessions (seminars or workshops), bringing together research and industries in the fields of, for instance:

- Electronics and IT
- Energy
- Biotechnologies
- Galenic and clinical research
- Mechanics and engineering of processes and materials
- Environment and sustainable development

This list is of course non-exhaustive.

We think it would be advisable for the High-level Eureka Experts to decide on these proposals and help identify and validate the most important projects to be financed.