GLOBAL FORUM

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GLOBAL CONVERGENCE 2.0 INTEGRATION & INNOVATION

Conference Proceedings

Monday, November 5th, 2007
Tuesday, November 6th, 2007

Fondazione Giorgio Cini
Venice, Italy

Alto Patronato del Presidente della Repubblica Italiana

Haut Patronage du Président de la République Française

Patrocinio del Ministro per le Riforme e le Innovazioni nella Pubblica Amministrazione

ITEMS INTERNATIONAL

FONDATION SOPHIA ANTIPOLIS

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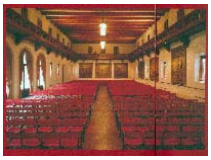
contents





acknowledgements....3

programme....5

about the global forum....14

think tank synthesis report....15

contact....113

acronyms & abbreviations....114

annexe 1: w2i white paper....117

Report written by
Susanne Siebald, Communications Consultant
assisted by Florentina Chirca, Items International

The organization of an international event like the Global Forum is a very rich experience in many respects. People may think that organizing the Forum for the 16th time is a kind of routine, but it has been, as every year, just as exciting and challenging as the very first time!

Now, the conference is over and more than 320 high-level delegates from 47 different countries across the world attended the conference sessions taking place on 5 & 6 November in Venice.

We would like to express our sincerest thanks to the City of Venice, città ducale, for having offered the splendid concert and dinner at the Teatro La Fenice, one of the most beautiful opera houses in the world, as well as to Veneto Banca and the company Zanardo for the welcoming cocktail in the beautiful Palazzo Pisani Moretta on the Grand Canal. We also would like to thank the Fondazione Giorgio Cini for hosting this conference in this magnificent institution, and in particular Azienda ULSS 8 di Asolo for their efficiency in helping to organize the Global Forum 2007.

Without their help, this conference would not have been possible and we would like to deeply thank the main sponsors and co-operating institutions of the Global Forum 2007, which are, besides Items International, the Foundation Sophia Antipolis, and Azienda ULSS 8 di Asolo,

Oracle, IBM, Telecom Italia, Qualcomm, Consip, eGovernet, Verizon, Postelink, AT&T, Venis, Guerrato, White & Case, Sagem Security Safran Group, the Wireless Internet Institute, Intema - Informatica Tecnologie Management, Veneto Banca, Zanardo, General Electric, the National Association of Broadcasters, Afilias, Alcatel-Lucent, EADS, Proxim Wireless, and ETSI

as well as the supporting sponsors, which are

the European Commission, the Veneto region, Confindustria Servizi Innovativi e Tecnologici, MEDEF, PoliticsOnline, Forum PA, PTI, ANUIT, Gov2U, MEDICI, Politecnico di Milano, Global Cities Dialogue, Access2democracy, Politech Institute, ENSA, and the Global Trust Center.

All these organisations represent in an excellent way the spirit of co-operation and dialogue in which the Global Forum was born and which continues to make the Forum a unique event.

We have been also very pleased to host and support the WSA 07 Awards Ceremony. This global initiative to select and promote the world's best eContent has generated excellent e-Content creation all over the world within the new Information Society.
Perhaps the most important acknowledgement goes to the participants, the speakers, the moderators and the chair persons, who made the Global Forum such a rich and lively event and who contributed with their invaluable experience, ideas and thoughts.

Now that the conference is over, for us, the work begins for 2008. Many thanks to all of you who made the Global Forum such a great success and we hope to see you all next year!

Sébastien Lévy
Vice-President of the Global Forum

Sylviane Toporkoff
President of the Global Forum

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5 November 2007

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Massimo Cacciari, Mayor of the City of Venice, Italy
Gino Redigolo, General Manager, ULSS 8 Asolo, Italy
Pierre Laffitte, Senator & President Sophia Antipolis Foundation, France

1ST DAY OPENING SESSION p 18

Chair & Moderator: **Sylviane Toporkoff**, President Global Forum & Founder Partner Items International, France

Keynote Speakers:

- **Cecilio Madero Villarejo**, Head of Information Communication and Media, DG Competition, European Commission
  Convergence in the Electronic Communication Sector
- **Thomas Rosch**, Commissioner, Federal Trade Commission, USA
  Forces Driving (and Impeding) Convergence: What Can The FTC (and Like Agencies) Contribute?
- **Kan'ichiro Aritomi**, Former Vice Minister for Policy Coordination, Ministry of Internal Affairs and Communications, President, Foundation for Multimedia Communications (FMMC), Japan
  Convergence Trends in Japan
- **Robert Hensler**, Geneva State Chancellor, Conseil d'Etat de la République et Canton de Genève, Switzerland
  Internet Voting: A Truly User Centric Application
- **Marius Eugen Opran**, Former Secretary of State for e-Administration, Ministry of Administration and Interior; Member of the European Economic and Social Committee, Romania
  ICT: Speeding Up the Sustainable Growth of the European Union – What Problems Should We Solve?

Chair: Jeff Brueggeman, Vice President – Regulatory Planning & Policy, AT&T, USA
Convergence – Redefining Communications and Regulation

Moderator: Jean-Pierre Chamoux, Professor Paris V-René Descartes University, France

Speakers:

- **Gabrielle Gauthey**, Commissioner at the French Regulatory Commission for Telecommunications and Postal Services - ARCEP, France
  Broadband Infrastructure – Points of Reference and Outlook
- **Gérald Santucci**, Head of Unit D4 - Networked Enterprise & Radio Frequency Identification – RFID, DG INFSO & Media of the European Commission
  From RFID to the Internet of Things
- **Xu Junqi**, Deputy Director, Institute of Communication Policy and Management, China Academy of Telecommunication Research, MII, China
  Network Convergence in China: The Development and Strategies – Case Study on IPTV
- **Lionel Chmilewsky**, Senior Vice President of Proxim International, France
  Wireless Broadband Infrastructure for Innovative Applications
- **Eric Festraets**, Director Broadband Access Marketing and Consulting, Alcatel-Lucent, Belgium
  Welcome to the Fibre Nation
- **Ibrahim Adel**, Investor Relations and Communications Director, Zain Group, State of Kuwait
  Zain
- **Roberto Saracco**, (represented Stefano Pileri), Long Term Research, Telecom Italia, Italy
  Next Generation Convergent Networks
- **Jacquelynn Ruff**, Vice-President, International Public Policy & Regulatory Affairs, Verizon, USA
  Broadband Infrastructure for Innovative Applications in Established & Emerging Markets

1ST DAY • SESSION 2 • The Future of Software & R&D Interoperability & Openness • p 37

Chair: Alison Birkett (represented Jesús Villasante), Delegation of the European Commission in Beijing, European Commission
Software & Services: European Community Research - Supporting Future Technologies

Moderator: Hervé Rannou, President of Items International, France

Speakers:

- **Margot Dor**, Director Strategic Projects, ETSI
  ETSI – Open for Business
- **Christian Rohnke**, Intellectual Property Partner (Germany), White& Case LLP
  The Future of Patent Law - Standards and Interoperability
- **Thomas Andersson**, President of Jönköping University & Chairman of the Global Trust Center (GTC) International Council, Sweden
  Innovation and Trust in the Digital World
- **Gianni Camisa**, Chief Executive Officer, AlmavivA Group, Italy
  The Real Challenge: Convergence Towards a Business Model 2.0
- **Eikazu Niwano**, Senior Research Engineer, Service Integration Laboratories, NTT Corporation, Japan
  Diversity-oriented Secure Chip Management towards Network Convergence
- **Bruno Carron**, Head of Erudine Centre of Competences, EADS, France
  The Erudine Behaviour Engine

1ST DAY • AFTERNOON'S OPENING SESSION • p 44

Chair & Moderator: Miriam Sapiro, President of Summit Strategies International, USA

Keynote Speakers:

- **Robert Morin**, Secretary General of the Canadian Radio-television and Telecommunications Commission - CRTC, Canada
  Empowering a Connected Society in a Digital World
- **Deborah Taylor Tate**, Commissioner, Federal Communications Commission – FCC, USA
  Convergence and Connectivity: Bringing Broadband to the People
- **Antonio Amendola** (represented Roberto Viola), AGCOM (Italian Communications Regulatory Authority) & European Regulatory Group – ERG
  New Scenarios, New Rights, New Duties, New Regulations?
- **Yannis Larios**, Advisor to the Special Secretary for Digital Planning, Ministry of Economy and Finance, Greece
  Digital Strategy - Paving the Greek Digital Landscape

Chair: Innocenzo M. Genna, Chairman of the European Competitive Telecommunications Association – ECTA
Regulation and Convergence. Introduction to the Panel

Moderator: Andrew D. Lipman, Partner and Head of Telecom Group at Bingham McCutchen, USA
U.S. Regulatory Developments of International Note

Speakers:

- **Jean-François Soupizet**, Head of the International Relations Unit, DG Information Society and Media, European Commission
  International Cooperation Public Consultation – A First Overview
- **Theresa Swinehart**, Vice President, Global and Strategic Partnerships, The Internet Corporation for Assigned Names and Numbers - ICANN
  Regulation and Governance
- **Katrien Lefever**, Legal Researcher, Interdisciplinary Centre for Law and ICT (ICRI), Catholic University of Leuven, Belgium
  The Revision of the Television without Frontiers Directive. Is the New Audiovisual Media Services Directive without Frontiers Future Proof?
- **Bernard Benhamou**, Senior Lecturer at Political Sciences Institute in Paris (Sciences Po) and at University Paris I Panthéon Sorbonne, France
- **Danièle Auffray**, Deputy Mayor of Paris in charge of New Technologies and Research, Mairie de Paris, France
  Paris, The Digital City
  Daniel Aghion, Executive Director & Co-Founder, w2i, USA
  The European Commission Local Government Broadband Wireless Conundrum

Chair & Moderator: **William Sloan Coats**, Partner, White & Case LLP, USA
MMORPGs - Present and Future Trends

- **Jay E. Gillette**, Professor, Center for Information and Communication Sciences, Ball State University, USA
  Creative Collaboration for the Information Renaissance: Weblogs build Distributed Community
- **Robert Bell**, Executive Director of the Intelligent Community Forum (ICF), USA
  Broadband and Community Collaboration. Does the Web Strengthen or Weaken Community Involvement?
- **Gianluigi Albano** (represented Danilo Broggi), Head of Research, Consip S.p.A., Italy
  The eMarket Place as an Innovative Electronic Procurement Tool for Public Administration
- **Alessandro Sciolari**, Scientific Director of Assoknowledge Confindustria SIT, Italy
  European Concept
- **Fiorello Cortiana**, Senator and Member of the Italian Advisor Committee of Internet Governance and the IGF, Italy
  Knowledge Sharing
- **Carlo Augusto Sartori**, Director of the Department of General Surgery, Castelfranco Veneto, Italy
  eLearning and Streaming: Surgery Online

Chair: Kristin Parsley Atkins, Senior Manager, Government Affairs, Qualcomm, USA
Wireless Reach. Empowering Communities Worldwide

Moderator: Ellwood Kerkeslager, CEO, Information Futures, L.L.C., Mayor of Madison, New Jersey, USA

Speakers:

- **David LaRose** (represented Jean-Christophe Lagarde, Mayor of Drancy and Member of French Parliament), Director of the IT Department, City of Drancy, France
  City of Drancy
- **Luca Fagan**, Project Manager, Healthcare Institution Azienda ULSS n 8 di Asolo & **Simone Tasso**, Hospital Medical Director & Head of Ambulatory Services, Local Health Trust ULSS n 8 di Asolo, Italy
  Individual Clinical Portability of the ULSS 8 Asolo Medical Network
- **Otto Gies**, Vice President Corporate Business Development, EADS
  Convergence - Mobility and Location Based Services
- **Michèle Thonnet**, French Ministry of Health, France
  ICT and Health Policy in France -- How does France cope with e-Health?
- **Chris Vein**, Executive Director of the Department of Telecommunications and Information Services - Senior Technology Advisor, City & County of San Francisco, USA
  Connecting Cities for Innovation – Green ICT
- **David L. Wood**, Councillor, Newcastle upon Tyne City Council, UK
  The National Concessionary Bus Travel Scheme, Smartcards, ITSO in the North East of England
- **Lasse Berntzen**, Associate Professor, Faculty of Social Science, Vestfold University College, Norway
  Digital Planning Dialogue

Chair: Peter Bruck, General Manager of Austrian Research Centers GmbH, Austria

Moderator: Hugo Kerschot, Managing Partner of INDIGOV, Belgium

Speakers:

- **Sascha Haselmayer**, Director & Co-Founder Interlace-Invent / Living Labs Europe, Spain
  Living Labs Europe
- **Paolo Zocchi**, Senior Adviser of the Minister of Regions and Local Authorities, Italy
  eGovernment 2.0
- **Chia-Sheng Chang**, Commissioner, Department of Information Technology, Taipei City Government, Taiwan
  Taipei's Experience
- **Steven B. Adler**, Program Director, IBM Data Governance Solutions, IBM, USA
  Competition, Innovation and Governance
- **Bror Salmelin**, Adviser to the Director ICT addressing Societal Challenges, DG Information Society & Media of the European Commission
  Service Science and Innovation

Commentators:

- **Edith Cresson**, Former Prime Minister, President Fondation Ecole de la Deuxième Chance, France
- **Pierre Laffitte**, Senator & President of the Foundation Sophia Antipolis, France

6 November 2007

2ND DAY • OPENING SESSION • p 77

Chair & Moderator: **Phil Noble**, President & Founder PoliticsOnline, USA
Civic Sector ICT: 2.0 Integration & Innovation

Keynote Speakers:

- **Todd S. Ramsey**, General Manager, Global Government and Education, IBM, USA
  Continuing the eGovernment Journey - Why Governments Need to Innovate and Transform?
- **Adriano Alessandrini**, Mayor of Segrate, Italy, & Regional Vice Chair of the Global Cities Dialogue
  Mayors of the World for a Global Cities Dialogue on the Information Society
- **Mel Proudfoot**, Senior Director EMEA Public Sector Oracle, UK
  How Converging Technologies Transform Government
- **Zoltán Somodi**, Secretary of State, Ministry of Communications and Information Technology, Romania
  ICT Achievements in Romania
- **Luigi Perissich**, (represented Alberto Tripi), Director General, Confindustria Servizi Innovativi e Tecnologici, Italy
  The Impact of Convergence, Innovation and Knowledge on the Economic Development

2ND DAY • SESSION 7 • Media & Content Issues in the New Convergent Environment • p 86

Chair: **Kathryn C. Brown**, Senior Vice President for Public Policy Development & International Government Relations, Verizon, USA
Issues & Opportunities in this New Converged World

Moderator: **Giorgio Prister**, Senior Strategy Consultant, Items International, Italy

Speakers:

- **Fabio Iaione**, Country Manager Italy, Qualcomm Europe
  Enabling Convergence
- **Jane E. Mago**, Senior Vice President & General Counsel, National Association of Broadcasters – NAB, USA
  Getting U.S. Consumers Ready For February 17, 2009
- **Andrea Ambrogetti**, Director of Institutional Relationship at Mediaset & President of Consortium Sardinia Digital, Italy
  Transition from Analogue to Digital TV: A Revolution for All
- **Matteo Maggiore**, Head of EU and International Policy, BBC, Belgium
  The BBC and Convergence. Broadcasting to Empowered Users
- **Giovanni Ridolfi**, Technological Strategies Multimedia Engineering Manager, RAI, Italy
  Towards HDTV and Beyond …

2ND DAY • SESSION 8 • How Converging Technologies Transform Government • p 95

Chair: Andy Smith, Senior Director for Public Services, Oracle EMEA, UK
Current and Future State of eGovernment

Moderator: Alan R. Shark, Executive Director, Public Technology Institute - PTI, USA
From Informative to Participatory eGovernment

Speakers:

- **Paolo Baldelli**, President of Postelink, Italy
  Digital Terrestrial Television (DTT). The "Fondazione Ugo Bordoni" Project
- **Nicola Contardi**, (represented Fulvio Barbarito), Lombardia Informatica, Italy
  The CRS/SISS Lombardia Project - Regional Service Card. Health & Social Care Information System
- **Alan Jones**, Chief Executive, Somerset County Council, UK
  It's About Leadership…
- **Eric Legale**, Director of Issy Média, City of Issy-les-Moulineaux, France
  The Example of Issy-les-Moulineaux
- **Madeleine Siosteen-Thiel**, Senior Programme Manager, Services & IT Implementation Department of VINNOVA, Sweden
  eGOVERNET - European eGovernment Research Network

2ND DAY • SESSION 9 • Data Governance, Security & Privacy • p 105

Chair & Moderator: Steven B. Adler, Program Director, IBM Data Governance Solutions, IBM Corporation, USA
The Six Questions every Organization should ask about Data Governance

Speakers:

- **Richard Livesley**, Program Director, Information Governance and Quality, BMO Financial Group, Canada
  Information Management Governance @ BMO Financial Group
- **Jacques Bus**, Head of Unit - Security, DG Information Society and Media, European Commission
  Data Collection in the Future Information Society
- **Paul Welti**, Programme Manager, European Programmes, Sagem Sécurité SAFRAN Group, France
  Data Governance, Biometrics Application for National Identity and Fraud Prevention
- **Edward Keck Jr**., Vice President, Security Strategy & Governance, KeyBank, USA
  KeyBank and the IBM DGMM
- **Cengiz Barlas**, Chief Data Steward, Discover Financial Services, USA
  Data Governance Maturity Model Use at Discover Financial Services

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 organisations 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

2007 Global Convergence 2.0 – Integration & Innovation – Venice, Italy

2006 The Digital Convergence – Paris, France

2005 The Broad Convergence – Act II – Brussels, Belgium

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

The Global Forum 2007 took place on 5 & 6 November at the Giorgio Cini Foundation in Venice, Italy.

The two-days event attracted more than 320 high-profile representatives from the world of politics, the business community, and academia. Influential leaders and prominent speakers from around the world came together to share their visions and concerns and to discuss the most recent developments and the most pressing and challenging issues related to this year's topic of the Global Forum: Global Convergence 2.0 - Integration & Innovation.

The Think Tank was organised in 4 plenary and 8 panel sessions of which two always took place simultaneously.

The Global Forum has been proud to host and help organizing this year's World Summit Awards Ceremony. The World Summit Award (WSA) is a global initiative to select and promote the world's best eContent, started in 2003 in the framework of the United Nations' World Summit on the Information Society (WSIS). The World Summit Awards Ceremony 2007 took place in the evening of November 5, directly following the conference sessions.

The Global Forum also hosted two workshops with the common general topic "Digital Cities: Broadband Wireless for Better Managed & Safer Communities", which were jointly organized by IBM [www.ibm.com] and the w2i [http://w2i.com] (see also "w2i white paper" annexed to the present document). The first workshop focusing on regulatory challenges took place in the evening of November 5, in parallel to the WSA Ceremony. The second workshop, focussing on business models, took place in the afternoon of November 6 and started with a working lunch, directly after the Global Forum's closing session.

The following synthesis report highlights the key issues of each presentation and summarizes the discussions that took place during the sessions. All slides, speaker profiles, and other documentation are available for download on the website of ITEMS International www.items-int.com. 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 summaries of the presentations made during the Global Forum 2007 are listed in chronological order corresponding to their succession in the final conference programme, as listed in the beginning of the present document.

SYLVIANE TOPORKOFF, President of the Global Forum & Founder Partner Items International, welcomed the participants and opened the 16th edition of the Global Forum / Shaping the Future Think Tank. This year, more than 40 nationalities have been represented in Venice.

Venice represents history, but also future. As the "city of bridges", connecting its citizens through numerous bridges, Venice is the prime example for a connected and networked city. It is also a socially active, culturally rich, and economically vibrant and living city, that prepares its future in many ways: Eight new spaces are ready to develop ICT for investors, such as the Lido with its Cita de Cinema, the Parche Vega dedicated to nano-technologies, or the Arsenale with its research centre. Furthermore, there is a plan to significantly co-finance ICT projects between 2007 and 2011.

This year's Global Forum continues its tradition of being a premier Think Tank for presenting and discussing leading edge technological development and innovative solutions. The subject of the discussions for the coming two days is a very complex one and there are various aspects to consider. Recommendations gathered in the nine high-level sessions that cover a variety of interests and disciplines related to the Forum's topic "Global Convergence 2.0 - Integration & Innovation " will be forwarded to governments around the world.

Sylviane Toporkoff thanked the sponsors of this year's Global Forum for their support and commitment. A special thank you was given to the Mayor of Venice for his hospitality and to the staff of the Healthcare Institution Azienda ULSS 8 di Asolo for their hard work and valuable and efficient cooperation in organizing the Global Forum 2007.

The **Mayor of the City of Venice**, Italy, **MASSIMO CACCIARI**, warmly welcomed the participants and with great passion for his city, he thanked the organizers for having chosen Venice for this 16th edition of the Global Forum.

The capacity to innovate is the main factor of success in every field of human activity. Innovation does not only mean new products and new commodities, but also new ways of working, communicating and living. Innovation also means cultural changes in the anthropological sense of the word and the business world has to take into account this close relation between innovation and cultural change and its impact on the economic and financial sectors.

Innovation means transformation and metamorphosis in every field of our life – and therefore, Venice is the right place for discussing about subjects related to innovation. Venice has been in the past a city where revolutionary visions in art or painting have been connected with revolutionary innovation in industry, arts and craft. And even if times are harder for Venice today, it is still a meeting point for artistic and cultural research. Venice has various important artistic and historic institutions, such as the Biennale, the Guggenheim museum, or the Fondazione Giorgio Cini and the Palazzo Grassi. Venice has an important university and also the Venice International University. Moreover, the Venetian curia has

recently opened an international school dedicated to the dialogue between different cultures and different religious traditions. A scientific and technological centre for research and the diffusion of innovation has been created in Mestre 10 years ago, and two new business incubators for start-ups just have been launched on the Island of Giudecca.

All these activities, as well as the new ones Venice will attract in the future, will be connected by a unique new broadband infrastructure that will be developed in co-operation with Cisco and Telecom Italia. These are only a few examples of what has been and what will be done in Venice. And yet so much remains to do. To be successful in all these efforts, it will be necessary that the international community of business leaders, scientists and technologists – represented by the attendees of the Global Forum – believes in Venice as a truly competitive city in this global world.

Venice needs this international support, not only for the extraordinary challenges the city is facing to safeguard its very unique environment, its cultural heritage, its patrimony and its artistic tradition, but also to develop a sound economic base. The Global Forum hopefully will be the beginning of a strong cooperation and a durable friendship. With this concluding remarks Mayor Cacciari welcomed once again the participants in Venice and to the Global Forum 2007.

GINO REDIGOLO, General Manager of the Healthcare Institution AZIENDA ULSS N 8 DI ASOLO, Italy, winner of the WSA Award 2007, [www.ulssasolo.ven.it], warmly welcomed the participants and expressed the great pleasure of ULSS 8 Asolo for partnering with the Global Forum.

The participation to the organization of an event like the Global Forum may sound uncommon for a health establishment. But the health sector is the area where all novelties, even those originating from other fields, find their most core technical scientific application, connected to ethical aspects. The same consideration is applicable to the digital and multimedia technologies. Digital innovation in health activities – telemedicine, tele-consultation, digital medical records, eLearning, education or RFID for pharmaceutical management – represent one of today's most important opportunity to add value to the health services offered to citizens and to develop professional research processes.

Within the framework of a specific policy set out by the Region of Veneto, ULSS 8 Asolo has been constantly carrying out an extensive programme on digital innovation in the recent years and attained very positive results at a European level. Every technological improvement may contribute to progress health care services.

The presence of so many distinguished delegates indicates that Venice is an adequate place for the Global Forum. Venice, with its sensitive environment, is a symbol the human capability to correct cultural and technical engineering fields. Bringing together instruments, solutions and opportunities helps easing the way to the future. And this is the goal of eHealth.

PIERRE LAFFITTE, Senator & President Sophia Antipolis Foundation, France, welcomed the attendees. He then told about three of his personal dreams: The first one is that the French Government changes the French wealth tax system, in order to enable rich people to become "business angels" and to massively finance start-ups and innovation. The second dream concerns hubs of innovation. Hubs of innovation should be of highest priority for

several Directorates General of the EC, such as the DG Enterprise, DG Research, or the DG related to competition. This highest priority should be shown to the 27 EU Member States at the end of 2008 in order to be approved by all Member States. The third dream concerns the development of the 3D Internet, which allows the creation of high quality content in arts, culture, patrimonial knowledge and cultural diversity. This new means of global marketing is of great interest not only for big companies, but also for territorial entities, like regions or cities.

OPENING SESSION

DAY 1 – MORNING – PLENARY SESSION

The **chair and moderator** of this opening session, which is dedicated to convergence and competition issues and applications, **SYLVIANE TOPORKOFF, President Global Forum & Founder Partner Items International**, France, welcomed and introduced the members of the panel.

As the first speaker, **CECILIO MADERO VILLAREJO, Head of Information Communication and Media, DG Competition, European Commission,** outlined with great care and clarity a competition authorities' view on

Convergence in the Electronic Communication Sector

First of all, convergence is driven by the integration and the technical development of infrastructures and the access level, which is where the subscribers connect to their service provider. Traditionally, different access networks were able to deliver only one type of service: e.g., cable networks deliver television, PSTN networks deliver voice. Today, cable operators have upgraded their networks and deliver retail access and call services, broadband Internet as well as TV services. Similarly, PSTN networks are now able to deliver telephony, broadband Internet and IPTV. Convergence means that consumers can obtain all types of services from several or only one platform. Hence, convergence lowers entry barriers to the electronic communications market, which is beneficial for competition. Furthermore, competition between infrastructures is more sustainable than competition on a single network, which often relies on access regulation. Thus, from the competition policy point of view, the Commission welcomes convergence to the extend it brings about infrastructure base competition to the benefit of the consumers.

Network owners react to the new technical possibilities and intensifying competition by bundling their various products. Famous are the so-called double or triple-play offers. In particular communications firms with large residual market shares, such as telephone or cable incumbents, often adapt a strategy of bundling their core product with other electronic communications services to counteract a loss of customers. Usually, bundle offers will generate efficiencies on the supply side trough economies of scale and scope. These business models will also generate efficiencies for consumers. It will save time to purchase all electronic communication services from a single provider. A bundled product from one single supplier might also be more reliable when it comes to the interoperability of the individual services. Bundles are normal means of competition and may serve the interest of the consumers. However, these practices can raise competition concerns under certain circumstances.

Telecommunication operators may, for example, try to leverage their strong market position in the voice market into the broadband and television market. The recent judgment of the Judgment of the Court of First Instance in the Microsoft case has just confirmed that competition authorities need to remain vigilant as to potential anti-competitive effects of such practices. The increased choice for consumers brought about by convergence should not be removed by anti-competitive practices. However, the Commission does not believe that transitory difficulties or short time promotion campaigns are an issue of concern for competition authorities.

The issue of replicability brings the competition to more specific questions of access to content, which is a key input for the provision of TV services. Telecom operators may try to secure exclusive agreements over premium content in order to promote their TV over DSL – offers which may close the market for other IPTV operators. There is a risk that DSL, as a new platform, may not develop because premium content, particularly rights on recent films or major sports events, are inaccessible for potential entrants. The Commission's policy aims to ensure that access by media operators to key inputs is not unduly restricted.

In the past the Commission prevented possible distribution of competition inter alia by means of its major control activity. Making premium content more accessible aims to create an effective framework for competition in an environment where such content is delivered over new media platforms.

The Court of First Instance on 17 September 2007 confirmed the Commission's 2004 Microsoft decision on all points of substance. The Commission's rational has been the importance of preserving the incentives for firms to innovate. In this regard, an artificial interoperability advantage for a super-dominant player dumpens the market's incentive to innovate, since companies know that, however good there products are, they cannot compete. Similarly, a bundled super-dominant platform can sent signals which limits available venture capital and deters innovation in neighbouring product markets.

The following **Q&A** part of the presentation addressed the question of how to describe the Commission's role in keeping IT or communications markets in the EU open for entrants and investors in times where convergence might change the industry and its market transactions dramatically. Cecilio Madero Villarejo emphasised that the best competition policy is the one that only intervenes when it is indispensable or when the circumstances are exceptional. Regulation of new economy sectors should be exceptional as well. It is necessary to establish a certain level of trust in those companies. Self-regulation is better than regulation coming from the Commission. Intellectual Property Rights need to be protected in order to preserve innovation and to incite investment in new technologies. However, the Commission only intervenes when it is needed – not to preserve competitors, but to preserve a level playing field and a fair competition, to protect consumer rights and to make sure that innovation can happen.

THOMAS ROSCH, Commissioner, Federal Trade Commission - FTC, USA, gave a first-rate presentation on

Forces Driving (and Impeding) Convergence:
What Can The FTC (and Like Agencies) Contribute?

The three main forces driving and impeding convergence are the following: First, product markets are increasingly worldwide in their scope. There are exceptions. "Polly Pockets" still

wear national garb, and therefore the markets for those products tend to be national in their dimensions. Vehicles still drive on the left in the U.K. and Japan, and vehicles that are sold in those countries therefore have steering wheels and columns on their right hand side. But in the main, the products that are sold in the U.S. are the same as those that are sold in the EC and/or Asia. What are the principal threats to this driving force? Essentially, they can be boiled down to one word: protectionism. That can, of course, take many forms. A tariff is the principal one. But extraordinary taxes and supports for "national champions" are others. And those supports can take the form not only of economic subsidies but also of a "hands off" policy when it comes to law enforcement.

Second, business is increasingly conducted via the Internet. The amount of retail sales that are made over the Internet instead of through brick-and-mortar stores is increasing exponentially. One need only look at the year over year sales figures reported during the Christmas season to see that. And the commerce that is conducted over the Internet is just the tip of the iceberg. Vast amounts of data respecting employees and customers is transmitted by companies with locations scattered across the globe.

The principal threats to the convergence that is occurring by reason of the Internet are fourfold. 1) There are practices that have the potential to – or that actually do – disable computers, such as spyware. 2) There are practices that disincentivise use of the Internet altogether. These include things such as identity theft and other forms of invasion of privacy that can occur when Internet transmissions are high jacked or computer systems are hacked. 3) And this pertains specifically to efforts by firms to transmit employee and customer information to their various offices located in other countries – disparate national standards and rules governing whether and how such data transmissions can lawfully occur may threaten e-commerce and convergence. And 4) there are the issues raised by the whole debate about net neutrality.

Third, standard setting is increasingly enabling interoperability and convergence. Standard-setting organizations play a critical role in our high-tech/information economy by developing industry standards that enable interoperability and convergence. There are threats to standard setting as a driver of convergence, however. For one thing, the standard-setting process can be compromised and indeed "captured" if participants do not disclose the existence of their intellectual property before it is "baked" into the standard. Related to that threat is that the adoption of a standard may "tip" markets one way or another, resulting in enduring monopoly power and supra-competitive prices for consumers. Finally, firms may unilaterally resist anything that may lead to interoperability. One way to do that is by technological tying – configuring one's technology to favour one's own complementary products or to disfavour the complementary products of a competitor. Another form of resistance is simply a refusal to configure products so that they are interoperable.

What can the FTC and similarly situated law enforcement agencies around the world do to neutralize these threats and contribute to continued convergence? First, they can do their best to promote convergence among the world's substantive antitrust rules and policies. It might be reasonable to caution against too much reliance on convergence of competition law throughout the world and have even suggested that forced convergence might be unwise at this time. But the strongest argument for working towards convergence in appropriate areas is that different substantive standards can chill the forces that are driving commercial convergence worldwide.

Efforts are being made in the consumer protection area to achieve substantive law convergence, but, more can and should be done to facilitate cross-border transmission of

employee and customer data within a business organization. Economies depend in large part on nearly instantaneous transmission of data. Increasingly, this data is travelling across country lines, sometimes several countries in seconds. If FTC as well as other international regulatory bodies don't get it right, they could end up crippling international commerce and perhaps stifling innovation.

In an environment that is becoming increasingly more globalised, it is important to look for ways to encourage compatibility and coordination between various regulatory regimes. The complement to coordinating regulation and laws is the co-ordination of law enforcement efforts. There is also a need to strengthen the international co-operation in the law enforcement efforts. The U.S. SAFE WEB Act,30 signed into law in December 2006, allows the FTC to co-operate more fully with foreign law enforcement authorities in the area of cross-border fraud and other practices harmful to consumers that are increasingly global in nature. The FTC looks forward to continuing to work with all of our foreign counterparts to protect consumers on a world-wide basis.

The **Q&A** part of the presentation referred to the most productive measure that the FTC can take with respect to companies engaging in business in the EU. Thomas Rosch stressed the great co-operation with the DG Competition of the EC in the anti-trust area and with various other consumer protection areas throughout the world. However, the most important issue facing the global economy today is the patchwork quilt of regulations that exist governing the transmission of data about employees and customers within a company across various country lines. It is not possible to conduct a global economy as long as there are different standards throughout the world.

KAN'ICHIRO ARITOMI, Former Vice Minister for Policy Coordination, Ministry of Internal Affairs and Communications, President of the Foundation for Multimedia Communications (FMMC), Japan, provided an excellent insight in the current state of ICT infrastructure in Japan:

Convergence Trends in Japan

The transition from a Telephony Society, based on PSTN, to a Ubiquitous Network Society, based on IP-networks, is successfully under way in Japan. This transition started with the liberalisation of the telecommunications market in 1985 and has been supported by actively introducing technological innovation, developing policies to promote competition as well as the great efforts made to upgrade and activate the Japanese ICT market and infrastructure. The collaboration between the Japanese government and ICT industries in national strategies, such as the e-Japan Strategy, the u-Japan Strategy and the New ICT Reform Strategy, has been particularly fruitful in the realisation of a Ubiquitous Network Society. As a result of these actions, Japan has succeeded in building a world leading edge ICT infrastructure. At the end of June 2007, the number of broadband subscribers in Japan reached 27 million. (ADSL: 14m., FTTH: 9.7 million, CATV: 3.7 million).

The Japanese ICT industry has greatly contributed to the national economic growth. However, more efforts are needed to further develop Japan's economy and its various industrial sectors and to improve the daily life of the citizens. Thus, the following programmes are currently being implemented: The New Competition Promotion Program 2010, the Next-Generation Broadband Strategy 2010, the Fundamental Restructuring of Legal System for Communications and Broadcasting, and the Digitalisation of Terrestrial Broadcasting.

The New Competition Promotion Program 2010 was formulated in order to provide advanced low-cost, safe and secure ICT services taking into account the rapid development of IP-based networks and the transition to Next Generation Networks. The four main issues of the programme are: the promotion of facility-based competition, a review of the policy concerning interconnection, the review of the universal services obligation, and a review of the regulation concerning the dominant carriers.

The Next-Generation Broadband Strategy 2010 is a strategy to bring high-speed service to areas without access to broadband Internet services. The programme aims to provide full territorial coverage with high-speed broadband services, such as ADSL, and a more than 90% coverage with super-high-speed, such as FTTH, by 2010.

The programme for the Fundamental Restructuring of Legal System for Communications and Broadcasting addresses the shift from telephony to Internet, broadband and wireless in the field of telecommunications. At the same time, the digitalisation of terrestrial broadcasting also has been taken place in Japan. This trend led to the two streams of convergences: fixed-mobile convergence and the convergence in telecommunications and broadcasting. Convergence is taking place in the following four areas: Content convergence (with VOD and IPTV), business convergence (with mergers, cross-ownership and triple-play services), network convergence (with broadcasting via satellite and via FTHH), and terminal convergence (with mobile-TV-phones and TV sets for IPTV).

The legal system of telecommunication and broadcasting is currently covered by nine laws, which are separated into those covering telecommunications and those covering broadcasting in a vertically structured system. This structure has to be revised to take into account convergence. The Ministry started the revision in order to establish a layer structure system covering transmission infrastructure, platform and content. A study group already convened and an internal report has been released in June 2007. The report makes three recommendations: The regulatory framework should be restructured from a vertically structured system to a layer structured system as a common framework for communications and broadcasting. The regulatory framework to the content should be separated into media service, communication in the public domain and private correspondence. The currently nine laws should be integrated into one single law on ICT. The study group is currently gathering comments and will release its final report in December this year.

The following **Q&A** addressed the issue that the increasingly expanding convergence of telecommunication and broadcasting will have a great impact not only on the ICT industry but also on various other industries. Kan'ichiro Aritomi explained that traditionally, competition was among the common carriers, but today other entities enter the market. For instance, the Japanese government initiated procedures to issue licenses for the use of WiMAX. And not only telecommunication carriers, but also organizations form other industries, such as broadcasters or railway companies, vendors or financial institutions, form cross-industry alliances in order to apply for a licence. This trend is unique and was not imaginable in the former telephony world.

ROBERT HENSLER, Geneva State Chancellor, Conseil d'Etat de la République et Canton de Genève, Switzerland, shared his thoughts on electronic democracy by presenting a great initiative:

Internet Voting: A Truly User Centric Application

Too often, condemnations replace debate when it comes to discussing the use of ICT in the framework of the democratic means of expression. One of the reasons explaining this lack of debate is to be found in an approach that is purely based on technical efficiency. When envisioning technology, it is important to keep the users in mind. Users are the real challenge. A challenge that begins with their correct identification.

The case for voting machines rests very much on the desire to avoid unreadable ballots and to speed up ballot counting. Voting machines missed their target – they benefit polling station workers, while aiming at voters. Voters' involuntary mistakes have been reduced by electronic voting machines and the percentage of invalid ballots has gone down. Yet, before the electronic age, voters all left the polling station confident that their vote was valid. For them, electronic voting does not make a difference. Is it then a surprise that election officials defend voting machines while voters refuse them?

Not so long ago, to get the news of the day, people had to get down to the newsstand and buy a freshly printed evening paper. Today, they go back home and switch on the TV or the computer. Tomorrow, people will simply ask their mobile phones. Voting machines still require people to go down to the polling station. The main values added by ICT are mobility and flexibility. Voting machines provide neither of them. ICT implementation in the framework of the democratic institutions must provide citizens with the same benefits they receive in the other areas of ICT implementation. Here, Internet voting clearly has an edge.

Remote voting was introduced in Geneva back in 1995. Voters can mail their ballot over a two week period. Postal voting brought a 20 percentage points increase in turnout. In 2000, Geneva decided to add a third voting channel to consolidate this success with contemporary tools. The Internet voting project was born. It is too early to quantify its impact on turnout.

In order to avoid decreasing turnouts and to maintain institutional legitimacy, democracy has to hold out its hands to the citizens. In societies, where elections can be won by one or two percentage points, every vote matters. The issue at stake with electronic voting is the ability to maintain the current level of participation in the future and to increase it. Corresponding to the Pareto 80-20 law, 20% of citizens never vote. The remaining 80% is evenly divided between a 40% who always vote and another 40% who only vote occasionally.

Internet has the ability to aggregate the long tail of voters, the way it does with customers purchasing niche products. This effect has been clear in the nine official eEnabled ballots the Canton of Geneva has conducted so far. By introducing Internet voting, Geneva has succeeded in reaching a new public and activating occasional voters. When casting a ballot, more than half the occasional voters chose Internet. Internet voting is a truly user-centric application. The drivers of internet voting use are the emotional relationship that an ICT savvy group of citizens has developed with ICT, in their subjective feeling of ease with their computer and in their daily use of the web.

As stated by Ian Rowe, MTV Vice President, who launched the MTV/MySpace Presidential Dialogues where young people can interact with candidates for the nomination for the US presidential election: "Young people have an incredible level of interest in politics, because they can see how much the election influences things like the war, and global warming. They

can see that who the president is really matters. These issues are no longer theoretical: They're very personal."

It is important to invent new relationships between the various actors of democracy and keep as much as possible the citizens' involvement in making the processes secure and democratic. The design of the French eTax application, where users must perform a few checks and upload their own certificate, offers an example of this new collaborative role between state and citizens. However, it is important to keep in mind that eDemocracy has to be driven by policy and not technology.

The first question of the following **Q&A** referred to the quantum encrypted network Geneva has implemented recently. Robert Hensler pointed out that the company id Quantic, a spin-off of the Geneva university, has developed a quantum encryption technology that is now mature. Quantum encryption protects data by transforming it into a light beam instead of an electronic impulse. Any unauthorised attempt to read the data will destroy it and any alteration during the data transfer is visible. With quantum encryption technology it is possible to ensure that the transmitted data are unchanged and unread.

The second question was about how to ensure that the person voting online is really the voter he/she claims to be? Robert Hensler explained that Geneva took advantage of the fact, that there is no public birth register. During the online identification, the voter is asked to provide the following three elements: His/her birth date, the municipality of origin, i.e., the municipality the voter's family is originating from, as well as the PIN code provided on the voting card. No one else than the voter can have all these information.

MARIUS EUGEN OPRAN, Former Secretary of State for e-Administration, Ministry of Administration and Interior; Member of the European Economic and Social Committee, Romania, delivered a thought-provoking speech on

ICT: Speeding Up the Sustainable Growth of the European Union – What Problems Should We Solve?

A possible future programme within the i2010 Initiative regarding the role of the ICT in the Sustainable Growth of the European Union would have the following two main goals: 1) Building a Knowledge Society for all; 2) Reducing the Digital Divide. In order to reach these goals, a new generation of "e-Citizens" would be required. This new type of Citizen must then be equipped with the most advanced ICT tools.

The first tool could be a new affordable "EU Citizens Global Internet Portal". It should be a new portal driven by its own European search engine and providing a EU Citizens Directory and EU Citizens e-Mail. This portal should represent the European replica of the US Yahoo or Google. The portal will provide a full range of products and services; it should be a platform for open discussions between all EU citizens, actively fighting against the Digital Divide. Such portal would represent a major step to reach the declared goals of the Knowledge Society.

Due to the importance of the convergence that is currently taking place between mobile devices and the Internet, the second tool should be a new affordable Wireless "EU Citizens' Internet Universal Service", covering the whole territory of the EU. This service should be implemented according to international standards, also meeting the general obligations

established for services of public interest and universal services. Moreover, it should have the characteristic specificity of ICT sector services.

The first option regarding this new Wireless Internet was to issue a new EU Directive in order to impose all EU governments the obligation to fully cover their national territories with broadband wireless. This mobile Wireless Internet should be implemented as Universal Service for all Citizens, without any discrimination, and should provide continuous and affordable services. It should provide free of charge Internet Services to disadvantaged and socially-excluded groups, such as the pupils in rural areas.

After four major computing cycles over the past 50 years, two important achievements have been reached: PC with broadband Internet and large-area coverage Wireless Internet. This is supported by WiMAX large-scale implementation. VoIP becomes fully mobile due to the new generation of dedicated phones allowing the direct connection to any existing Access Point (about 300,000 Access Points worldwide in December 2006). The number of people replacing the use of GSM by VoIP, especially for international calls and roaming – due to the insignificant tariffs of VoIP operators – is under exponential growth.

The second option could be the official adoption of the Wireless Broadband Access to the Internet for all EU Citizens as an affordable Universal Service. Concerning affordable Universal ICT Services for EU Citizens, the "Universal Services Directive" currently includes the unique right entitling each individual to have access to a fix phone line. During the review activities of the "Universal Services Directive", the Commission and the Committee should propose and request the Parliament to add - as a second affordable Universal Service - the Wireless Broadband Access to the Internet.

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The first comment of the **Q&A** part at the end of the session referred to convergence between broadcasting and telecommunication. From a financial point of view, tele-communications might be more important, however, media have a strong political importance because they represent information and democracy. In some countries, regulation of telecommunication and media is separated and it might be difficult to find the consensus for a common regulation.

The second comment addressed the importance of providing affordable universal services. Today, after the liberalisation of the telecom market, there are new possibilities to subsidise universal services. Morocco, for instance, takes 3% of the revenues of the telecom operators to subsidise the informatisation of the schools

A question, addressed to Robert Hensler, referred to the fact that citizens in Switzerland can already propose legislative initiatives through written ballot. The question was whether Geneva will also allow citizens to propose legislative initiatives online via the Internet. Robert Hensler stressed that the implementation of participative ICT tools will be done step by step. The first step is voting, the next step will be the elections, and then initiatives an referendums will follow. Michel Chevallier, Geneva State Chancellery, added that there is no digital signature in Switzerland yet. The law exists, but there is no provider and until it is not possible to ensure that the user is the one he/she claims to be by signing an initiative or referendum, it will not be possible to do it online. However, citizens should be able to submit legislative proposals online within the next 2 or 3 years.

Broadband Infrastructure for Innovative Applications

The **moderator** of this first session of the Global Forum, **JEAN-PIERRE CHAMOUX, Professor Paris V-René Descartes University**, France, welcomed the attendees and expressed his delight about the large and very distinguished panel. He then opened the session, which consist in three presentations from experts in the field of regulation and five presentations from the professional world.

The session's **chair, JEFF BRUEGGEMAN, Vice President for Regulatory Planning & Policy at AT&T, INC**., USA, [www.att.com], introduced the topic of the session by providing a brilliant presentation on how a company was fundamentally transformed by what is happening in the field of convergence:

Convergence – Redefining Communications and Regulation

AT&T is no longer just a phone company, but is expanding globally and becoming an international provider with Internet data centres in 36 countries and business customers around the world. With wireless being supposed to be the business of the future, the company has today more wireless customers than wireline, 3G wireless data services in a 170 metropolitan areas in the U.S., as well as WiFi in 50,000 locations around the globe. Wireless is becoming much more than just a voice service but also a total communication and a data service.

Another growth area is video. The company is a new entrant into video services: AT&T is deploying IPTV and will reach 8 million customers in the U.S. by the end of the year. The company also sees content changed by convergence: The company now longer provides just traditional TV services but also online video services or the possibility for customers to create their own video on the Internet. The future of convergence is the basic ability to watch content on different devices integrating the various services together. People have to be enabled to find the content that they want by using their wireless device for Internet service, manage the content wherever they want, and share it by using any device. Content is becoming much more something that is controlled by the customer themselves.

At the same time these new services emerge, there is a tremendous growth of traffic on the networks: Traffic on the Internet is doubling every 12 to 14 months and traffic moves to wireless (voice traffic is growing but it is growing on the wireless side). Wireless data is also fast growing. This rapid growth requires both investment and new capacity in bandwidth but also new intelligence in the network in order to be able to manage the traffic and the new services.

What does this mean for regulation? There are a couple of 2.0 regulation principles, with the first one being the focus on consumers. While the services may look very different, there are some core consumer principles that must be protected, such as public safety (access to emergency services, child protection, etc.), security (identity theft etc.), and consumer protection.

Another major area focus is promoting the infrastructure and the innovation. An approach that has emerged in the U.S. is a model where the public sector and the private sector partnered together to identify broadband infrastructure needs. This model, initiated in the rather rural state of Kentucky, started with a programme to assess where broadband is not available. Then, a very specific initiative was launched trying to expand broadband capability. This collaboration proved to be very efficient and the partners were able to greatly expand the availability of broadband. Other important regulatory issues are the maintenance of competitive safeguards and promotion of market entries as well as the transition to next-generation broadband networks.

The third major area focus is to respond to the new challenges that this new converged market place brings. There is a need for consistent regulation in a market with converged services and many non-traditional competitors. Moreover, regulators have to face the challenge to determine a jurisdiction as geographic boundaries disappear.

GABRIELLE GAUTHEY, Commissioner at the French Regulatory Commission for Telecommunications and Postal Services - ARCEP, France, shared with great know-how and awareness some of the challenges French regulators are facing for the next generation access networks:

Broadband Infrastructure – Points of Reference and Outlook

The move regulators are facing, more rapidly than they thought, are residential fibre roll-outs. Asia is the pioneer, coming up on 10 millions subscribers. China is promoting fibre optic installations in new buildings. Leading telcos in the U.S. have around 7 million homes switched to fibre and 1 million subscribers. In Europe, the main FTTH roll-outs have been public initiatives, with the more recent projects initiated by local authorities. More recently incumbents are taking significant initiatives in fibre roll-out.

The national circumstances make the situation different from one country to another. Unlike France, cable development in the U.S. is a major characteristic, representing more than 60% of Internet access lines in 2004. France is a one-platform country for broadband (cable has 5% market share in broadband). Civil engineering cost is cheaper in the U.S. and in Japan because a lot of cables are aerial. Copper cable quality is poorer in the U.S. than in France, where ADSL is more efficient and the local loop length shorter. This led to different regulatory situations, with unbundling required in Japan and “regulatory holidays “in the U.S.

Fibre is taking place in different ways. A fibre roll-out can either mean fibre to the cabinet (VDSL or cable) or fibre to the home. Fibre is a technological cut off compared to copper pair and cable. Regulators a facing one of the major structuring projects for the next 10 to 15 years in the telecommunications area. FTTH makes 100 Mbit/s upstream/ downstream available to the end-consumer. Of course, it is taking place in different ways according to the topography. For instance, France is an exception in the way that the French incumbent decided to go directly to FTTH, whereas in other countries, incumbents are making one first step with fibre to the cabinet and then remaining with the same old copper network. The regulatory challenge in France is to encourage the construction of a new fibre network to the home, not to discourage investment and to preserve competition.

During the 4 years, France has enjoyed a very dynamic competitive market, thanks to the dynamics of France Telecom, the success of unbundling and the help of local authorities,

which supported the expansion of broadband across the country. France is now facing a couple of FTTH announcements by local authorities but also main residential operators.

There are uses of FTTH, and even if today few applications require more bandwidth (HDTV video services, blogs, exchange of personal content), there will be a constant growth of bandwidth and a need for symmetrical bandwidth with the simultaneous use at home or Web 2.0. There is little doubt that fibre is the infrastructure of the future.

Investors need a foreseeable regulatory environment and a reasonable return on risky investments, but the high risk of re-monopolization has to be taken into account. The objectives of the French regulator are to keep these new infrastructures open, while guaranteeing a reasonable return on all new investments whose financing should be shared. It is important to take the relevant and proportionate measures today in order to avoid to have to regulate heavily tomorrow. France is concentrating on the two remaining “bottlenecks” and adapts the current European framework to face this new challenge.

The real bottleneck is in physical infrastructure. Open access sewers are found only in a few cities in France, such as Paris, Lyon, and Marseille. Existing infrastructures should be used and access to ducts might be a possible remedy. In this context, ARCEP is already engaged in evaluating and negotiating a future duct rental offer from France Telecom. Moreover, ARCEP is also sharing experience with local authorities, which are crucial players in the context of access to ducts.

However, access to ducts will not be sufficient. Even if a duct sharing offer has been implemented, ducts may not be available everywhere, so that competitors may not be able to rely exclusively on this offer to roll-out their fibre networks. Furthermore, in low density areas, even if ducts are available, it may not be economically feasible for more than one competitor to roll-out in parallel several fibre networks to the end users. Thus, another bottleneck is the in-house wiring. It is doubtful there will be more than one rolling out of in-house wiring due to costs, the lack of space in cable trays, or the refusal of co-ownership property representatives to grant access to more than one operator. There are risks of pre-emption of this facility and sharing is crucial.

Sharing of the end part of the fibre loop should be considered. The localisation of what could be considered as the adequate point of mutualisation depends on the topography and technical architecture chosen by the first operator reaching the area and economically on the density of the area, so as to have a reasonable number of access points. If no access to passive facilities (either ducts or fibre), there will be a risk of downgrade of competition from unbundling to bitstream. Thus, the Framework Directive should evolve towards a symmetrical approach. It should impose a symmetrical obligation to any operator to negotiate the sharing of facilities under reasonable terms. There are two investment models in Europe: The one preferred by incumbents is an integrated passive and active assets network, the one preferred by local authorities is a model where the active assets remain with the operators.

Local authorities are major players n France and should act as “facilitators”. Their role could rank from encouraging the sharing of ducts, laying ducts and then rent them to operators, avoiding inefficient duplication, promoting the choice of a common optical loop topography, facilitating the negotiations with property owners, and ensuring the fair opening of the new optical loop.

GÉRALD SANTUCCI, Head of Unit D4 - Networked Enterprise and Radio Frequency Identification – RFID, DG Information Society & Media of the European Commission, provided a very interesting insight into the Commission's perspective of the evolution

From RFID to the Internet of Things

Radio Frequency Identification covers technological, ethical, societal, and legal issues. A RFID system includes the RFID tag itself, the reader and the communication between both, the RFID enterprise module (which is the articulation between the RFID and the back-end systems) and an inter-enterprise module, because more and more companies are involved in a supply chain and they need to exchange data and information using RFID. This gives rise to the notion of the infrastructures of today and tomorrow that will support networked RFIDs. There is also the notion of an Object Naming Service (ONS).

RFID technology offers opportunities for improving competitiveness and innovation and in this respect it is a major contribution to the Lisbon Agenda and the i2010 initiative. The market potential of RFID is tremendous. RFID as such is not a new technology. It was invented 60 years ago, but about half of the RFID tags that were sold in the past 60 years have been sold during the last three years. The global RFID market is estimated to increase by 6 times in the coming decade. RFID will pervade every sector of the economy and every corner of the society. It is also the doorstep to the Ubiquitous Information Society or the Internet of Things. We are entering a new information age where communication will not only take place between people and not only between machines but also between individual objects. The key issues are to get the technology right (e.g., affordable, standards, features, spectrum), to address the critical issues of privacy and security concerns, and to get clarity on legal issues (e.g., infringement of IPR, privacy legislation, health, environment).

There a number of key shifts in the global economy: from distance to proximity, from local to global, from network-centric to edge-centric, from content to context, from wired to wireless, and from frequent access to ubiquitous access.

Technological key trends regarding RFID are the low-cost tag and reader and the shift towards embedded technology. Moreover, RFID become increasingly networked. The potential for applications is very high. Some existing applications concern for instance railway passes, ID cards, e-tickets, payments, trace food packaging, passports, or smart toys. RFID will be increasingly combined with other technologies, especially nanotechnologies, sensors, and smart devices. The combination of RFID and sensors creates a kind of "super RFID". Sensors can be embedded in RFID realising ID detection and monitoring function, e.g. moisture or temperature sensors (in food RFID), light sensors (in chemical medicine RFID), vibration sensors (in display RFID), or pressure sensors.

In terms of European policies, many issues have to be taken into account: In the longer term, it is important to prepare the "Internet of Things", including a common understanding of this specific term as well as a common understanding of its objectives. Furthermore, it is important to provide objective information on RFID to citizens and to balance the different RFID "speeds" in the European Member States. Another priority issue is to foster the technology take-up by carrying out large pan-European pilot projects. Safeguarding security and privacy is an other important issue and it will be necessary to adapt the European data protection law to the specific case of RFID. RFID has to be evaluated in the context of health and environmental concerns. And finally, it will be necessary to sustain an international dialogue on all aspects of RFID development and deployment.

The European Commission has published a communication on RFID in March 2007. A RFID Stakeholder Group, established in June this year, will assist the Commission during the next two years in reflecting about RFID and the Internet of Things. A recommendation on the implementation of data security and privacy principles for RFID-enabled applications will be published in the first quarter of 2008. As regards international co-operation, the EC is in close contact with many countries, such as the U.S, Japan, China and Korea.

In less than two years, the EC has been able to bring together industries, citizens, status bodies. The EU is committed to promote the technology while at the same time safeguarding the rights of the citizens. A major event will take place on 15 and 16 November 2007 in Lisbon, Portugal, with the conference "RFID: The next step to the Internet of Things".

XU JUNQI, Deputy Director, Institute of Communication Policy and Management, China Academy of Telecommunication Research, MII, China, provided a noteworthy presentation on

Network Convergence in China: The Development and Strategies – Case Study on IPTV

Currently, China is enjoying a relatively higher development speed. Spurred by the rapid development of mobile services and broadband, the global annual rate of the operating revenues of the telecom industry amounts to 6%, whereas it is about 9.5% in China. 45% of the total revenues of the Chinese telecom market are coming from mobile services (the global average as well as the OECD average is about 36.5%), by the end of 2005. However, the development speed of the telecommunications industry slowed down in the recent years. Even China is no exception.

Driven by the substitution effect of mobile services, China's fixed operators engage in the deployment of convergent services. In this context, IPTV is considered as the "blue sea" for telecom operators. In China, not only the cable operators but also the telecom operators deploy IPTV. However, because the current law does not allow telecom operators to deploy IPTV, their present IPTV projects are only pilot projects.

As regards the positioning of the telecom operators in the value chain of the information and communication network services, telecom operators should not only be the integrators of content, but also the video application providers and network operators. Thus, telecom operators transform from network operators into information and communication operators. The IPTV business is expected to have between 5 to 20 million subscribers in 2010.

The main IPTV operators in China are China Telecom, China Network and the media corporation SMG. There are 5 licence holders belonging to the media companies as no telecom operator can get an IPTV license. The main business areas are urban areas, such as Shanghai or Hangzhou, as well as some rural areas including the provinces of Henan and Jiangsu. There are currently more than 300,000 IPTV users in China.

The main Chinese regulator in the field of IPTV is the SARFT (State Administration of Radio, Film and Television). The MII (Ministry of Information Industry) is the Chinese telecom regulator. Now, Chinese telecom operators want to enter the IPTV market, but they faces several regulatory obstacles: One is related to the regulatory institutions, due to the fact that China adopts a vertical regulatory regime, and no horizontal one. Another one is related to the current policy of the State Council, the central government, which does not allow telecom

operators and broadcasters to get into each others' businesses. Moreover, there is a lack of legal clarity concerning IPTV services and a lack of standards supporting IPTV deployment.

A three-step process is proposed to promote IPTV development in China. The first step concerns the policy change in order tot allow telecom operators to get into the IPTV business. The second step is to draft some convergence legislation to clarify the position of commercial IPTV. The third step is the adoption of a institutional reform and the creation of a convergence regulator.

LIONEL CHMILEWSKY, Senior Vice President of PROXIM INTERNATIONAL, France, [www.proxim.com], delivered a brilliant talk on:

Wireless Broadband Infrastructure for Innovative Applications

Proxim, a global pioneer in scalable, broadband wireless networking systems for service providers and private networks, is a small but growing company with 250 employees.

GSM was the first technology introducing mobility. The advantage of GSM is that it provides a good level of mobility, but it is limited in the field of data transmission. Then, the 3G came up, which brought the same level of mobility but a higher throughput in terms of data transmission. Finally, WiFi provides a high level of data transmission but a low level of mobility. Technical answers to WiFi have been WiMAX and mobile WiMAX.

The network is composed of three parts: The top layer is the point-to-point connectivity; the second layer is the distribution of the network (could be WiMAX or unlicensed); and the bottom layer of the network is the access with WiFi or Mesh WiFi. One advantage of WiFi is that it is a system that can be deployed very cost-effectively. Furthermore, it is a heavily standardised technology. More than 300 million WiFi clients have shipped to date, and Apple alone shipped 1 million dual-mode iPhones in 74 days.

Bridging the digital divide is the key market for wireless technologies: Africa has an average of 3 fixed lines per 100 inhabitants, while Europe has an average of 40 fixed lines per 100 inhabitants. The G8 countries, representing 14% of the world's population, account for 34% of the world's total mobile users. There are the same number of Internet users in the G8 countries than in the whole rest of the world combined. There are still 30 countries with an Internet penetration lower than 1%. In the context of bridging the digital divide, Proxim has deployed an application for an Internet operator in India who has started deploying Internet on a nationwide level.

Another very important field of application for wireless technology is security and surveillance. In this area, Proxim has provided video surveillance solution (a match of IP cameras and a wireless network) to protect the Californian Bay Area's transportation infrastructure consisting of 7 bridges and 2 tunnels. Another example is what has been done in Oregon, U.S., where the company provides video surveillance to 9 cites and a chemical weapons depot linked to first responder communication (police, fire department, etc.).

Municipal networks represent another key application area. The U.S. municipal wireless spending is projected to be more than USD 3 billion over next three years. In Bellwood, a city in the suburbs of Chicago, covering an area of 2.5 square miles and a population of 20,535 inhabitants, Proxim deployed WiFi technology for the inhabitants, WiFi access for enterprises and video surveillance for the public safety forces by providing a citywide WiFi mesh network

with unlicensed band point-to-multipoint backhaul. As a result, the crime rate has decreased by 15% and the number of emergency calls has been drastically reduced. One of Proxim's case studies in the field of mobile applications concern the equipment of "conductorless trains" in Korea. During the Olympic games in Athens Proxim provided hot spots for the journalists and users and then extended the network to hostels, press centres etc.

Wireless is giving chances to everyone to step in, because it is not only for those who have a license but can also be used unlicensed (2.4 GHz and 5 GHz: mostly unlicensed; 3.5 GHz: mostly licensed). It is fast and secure: One can start from a "green-field" or an interface with existing networks (e.g., satellite, fibre). It is an end-to-end solution enabling indoor and outdoor applications and it is very cost effective. Moreover, the deployment is very fast: it is possible to connect up to 50 new subscribers per day per team.

With regards to the return on investment: The typical capex per indoor subscriber is USD 300 for WiMAX; the typical capex per outdoor subscriber is USD 450 for WiMAX. The typical payback on a turnkey network (WiFi and Multipoint) is between 5 to 10 months in for developed countries and between 10 to 15 months in countries under development.

ERIC FESTRAETS, Director Broadband Access Marketing and Consulting, ALCATEL-LUCENT, Belgium, [www.alcatel-lucent.com], outlined with great clarity and expertise the fixed access side of convergence:

Welcome to the Fibre Nation

Conditions and parameters of fibre deployment are changing. In the nineties, some visionary people predicted that in 2000 everybody will have FTTH. However, this did not happen yet. On the other hand, there is a lot more momentum going on. The vision is to migrate from traditional ADSL deployment towards a full fibre access network.

Clouds have lifted in the last 6 month. The evolution is that users increasingly demand more bandwidth (HDTV, peer-to-peer experiences, faster downloads, etc.). There is also a fibre momentum today, with fibre booming in Japan and in the U.S. There are lots of discussions around bringing fibre to the node (bringing fibre towards a street cabinet) and reusing the copper infrastructure from there on, and bringing fibre to the home directly to the residential user. There will be a coexistence of these two types of deployment for a long time. On the technology side, there is a lot of FTTH technology appearing and maturing. GPON (Gigabit Passive Optical Network) infrastructure will be the leading technology for mass market deployment. The interoperability for GPON is underway as FSAN has made a lot of improvements. Infrastructure sharing is also possible and is very much used in France or Sweden.

Today, there is a central office with access (over copper or any other access technology) to the home. The vision is to have a consolidation of these central offices, which is also very much related to the PSTN migration and the traditional voice migration scenarios for service providers. There will be a consolidation towards bigger central offices, more centralised in the network, and passive infrastructure installed in the network. The whole will become much smarter because all the different devices people use will be able to interchange. There should be a consistency in the delivery of the service end-to-end, irrespectively of the device used in that smart home.

There are four main categories of moving from the central office based ADSL towards FTTH as the end game. Some service providers use VDSL instead of ADSL from the central office to the end-user. Others use FTTN in order to reuse the copper infrastructure for the end-user. The third category uses FTTB, where fibre is brought to the basement of the building in order to, then, reuse the existing in-building wiring. The fourth category is using directly FTTH. It is a matter of bringing fibre to the most economical point. All depends on the business case, profitability and the migration strategy of the provider. The time to the market is very important and FTTN became increasingly interesting, mainly due to the high level of competition between the providers.

From these different steps operators anticipate FTTH as the end game and plan the migration. They guarantee uniform IP service delivery across all broadband accesses, whether it is DSL, fibre, WiMAX or any other access technology, and shift attention to the optical termination and the residential gate. The role of the operators is definitely changing these days in trying to create a residential hub in the home – which is part of the vision of the smart network, by at the same time maintaining a unified subscriber service and network management.

The industry know-how and the demand is there, but the public sector has to pave the way for fiberisation, because the business case is not viable for a service provider alone in certain areas. Moreover, there is a lot to be regulated to create fair competition and providing broadband to all.

IBRAHIM ADEL, Investor Relations and Communications Director, Zain Group, State of Kuwait, delivered a captivating and concise presentation of

Zain

Zain Group is currently the fourth largest operator in dedicated wireless services in geographic coverage. The group is present in 22 countries in the Middle East and Sub-Saharan Africa. Zain is operating in the GCC countries with some of the most affluent economies in the world on a GDP per capita basis and has introduced effectively all the latest technologies. Zain were the first company to have had nationwide 3G coverage in Bahrain and has now launched WiMAX. The company has recently re-branded to Zain, and used to be known as MTC.

Zain is also working in Sub-Saharan Africa, were telephone service is still a challenge. The penetration is 3 fixed lines per 100 inhabitants. The cellular penetration currently is below 15%. Zain builds support, provide for, work with, and strengthens communities wherever they go. The company takes its social responsibility very seriously. This means pushing its role in the community beyond providing world-class leading telecommunications technologies and services.

ROBERTO SARACCO*, Long Term Research, TELECOM ITALIA, Italy, [www.telecomitalia.it], provided a brilliant and dense presentation of

Next Generation Convergent Networks

There is a decrease in revenues in the fixed line sector, a slight increase in the mobile sector – but a stable decrease concerning voice services in the mobile sector, and an increase of revenues in the ICT and entertainment sector. However, a much more significant change will be coming up. The term "convergence" seems to be a little bit misused. The market is not converging, but people are using more and more devices and everybody is trying to get in the business of somebody else.

All these evolutions result in a progressively increased availability of bandwidth at low cost for the end-user. The question is if the end-user will really benefit, will be using this increased bandwidth. The immediate answer is pointing at television channels. However, one can observe that each HDTV channel consumes bandwidth in the range of 15 Mbps. Given that it is most unlikely to have more than 3 channels being used in parallel by a single home one has to say that any bandwidth in excess of 50 Mbps is unlikely to be consumed by television. Higher definition will consume more bandwidth but the life cycle of television is measured in 20 years and more and it is unlikely to see Ultra HDTV before 2020. The consumer electronic sector is providing much higher definition than the television (e.g., digital cameras or video cameras). Thus, the consumer market will be the major producer of ultrahigh definition content in the coming years.

Density is the crucial issue. Operators that really want to deploy broadband in wireless do not have to have big cells. WiMAX is as efficient as the other systems, but provides a good way to enter the market with a low capex. But then there is a low density. In the future, there will be a number of wireless solutions with WiMAX being part of the solution. Since there will be all the solutions at the same time, roaming at the horizontal level will no longer be sufficient. Roaming on the vertical level between different technologies and different coverage areas will be required.

In Italy, the Next Generation Network 2 has been set up. The first NGN is already in place since 2000. There is a shift from the broadband area to the ultra broadband area. Fibre will be brought to every cabinet, with a couple of fibres dedicated to wireless. There are 140,000 cabinets in Italy and if you are moving from the current 11,000 cells for wireless coverage to over 100,000 antennas and cells, then, it is possible to provide real dense bandwidth. That is going to be a major change. However, the NGN is not just about wiring – it is about software and platforms.

An emerging paradigm is the one managing layered information leading to mash ups. Value chains are changing significantly. Value chains no longer are rigid linkage of various of information, but several value chains interacting with one another. It will be possible to get information from one party and on that information other information are meshed up. The context is no longer the one where the information was created but the one in which it is being used. An example is the use of the maps made available by Google to present a variety of overlapping information (directions, tourist information, points of sale….). Web 2.0, information infrastructures, and platforms are crucial elements of the NGN.

Telecom Italia is strongly in favour of an open network in order to share investment. But there should not be a strongly regulated access; prices should be fixed by the market. The NGN is

a very flat network, so the concept of unbundling the local loop will no longer be valid in the future. The NGN is a flat network, it has to be made open and the market should regulate.

* represented Stefano Pileri, Managing Director of Telecom Italia, Italy,

JACQUELYNN RUFF, Vice-President, International Public Policy & Regulatory Affairs, VERIZON COMMUNICATIONS, USA, [www.verizon.com], shared her great knowledge and her vision for

Broadband Infrastructure for Innovative Applications
in Established and Emerging Markets

Verizon is a very diverse company, acting in many different sectors. From the perspective of broadband, Verizon is doing broadband over wireless, DSL, FTTH (called FiOS). Verizon Business serves primarily large enterprise customers all around the world. Verizon has also a significant investment in Vodafone Italia.

Verizon's international NGN has been repeatingly described as the most connected global network in the world. From the point of view of broadband globally it is going primarily over the submarine cables touching emerging markets all around the word. For instance, Verizon recently got the go ahead for a long distance license in India.

In the U.S, the company is a leader in terms of households that are using broadband, the percentage of the population that has access to it, and speed. Concerning the two indicators "the percent of the marked that is served by competitive infrastructures" and "the growth rate of fibre deployment", the U.S. is generally recognised as at the top.

A closer look at the adoption of broadband in the U.S. shows that 53% of households actually take it – compared to an average of 28% in the EU (with some of the EU Member States being higher than some of the highest U.S. States).

The hallmarks of the U.S. market are the intense competition among platforms delivering broadband and the deployment of fibre that is underway. DSL comprises only roughly 42% of the U.S. market, whereas cable and other infrastructures, including fibre and satellite, comprise 58%. 94% of Americans have access to broadband. At least 79% have two or more platform options for broadband access. In addition, the FCC statistics released in November 2007 note not only the continuing advance of broadband access lines in the U.S., but also highlight the doubling of wireless high-speed Internet growth over the past six months – a dynamic new element to U.S. leadership given its multiple broadband platforms. However, at present, the OECD penetration rankings do not include mobile data (other than for select developing markets, where wireless broadband is the only clear choice).

Verizon offers consumers a number of broadband options. Verizon continues to offer DSL and also has a very strong wireless 3G offering and recently rolled its global blackberry. However, Verizon is best known for deploying fibre to the premises. Innovative applications include healthcare (telemedicine, electronic medical records), education and environmental applications.

The company began fibre deployment in 2005 with BPON. The technology that is deployed as of March 2007is GPON, which is capable of delivering speeds of 400Mbps downstream / 100Mbps upstream. Verizon is offering FiOS TV with more than 350 channels and triple-play (including broadband Internet, digital voice and digital TV).

Presently, the scope of deployment is approximately 9 million premises passed, with roughly 5 million of those premises open for sale. Of the current approximately 900,000 customers, roughly 360,000 have opted for FiOS TV, Internet and voice. Installation costs have decreased from USD 1,220 per premises in January 2006, to roughly USD 750 today. And, in FiOS-deployed areas, there is an 80% reduction in maintenance calls over DSL-only customer areas.

The broadband infrastructure is global. Communications travel at the speed of light around the globe, thanks to the undersea cables that link the countries and over which 80% of international traffic travels. Following several years of a “glut” of this capacity, demand is skyrocketing. Verizon is participating in the first-ever high capacity undersea cable between the U.S. and China, which should be in service prior to the Olympics in August 2008.

Within emerging markets, broadband is growing as well. This is critically important for economic development. Verizon is working on a project to increase international internet connectivity for universities in Africa. The trends are very positive: The latest figures from TeleGeography's Global Internet Geography study show that international Internet traffic grew 57% from mid-year 2006 to mid-year 2007 – a very healthy global trend with traffic growth trends remaining particularly strong in Asia and Latin America.

Important public policy issues are to encourage platform competition, to promote investment in fibre, to foster infrastructure for Internet access in emerging economies, and to balance between country-specific practices and differing market conditions and strengths.

The Future of Software & R&D, Interoperability & Openness

The session's **moderator**, **HERVÉ RANNOU, President of Items International**, France, welcomed the participants and introduced the panellists.

The **chair** of the session, **ALISON BIRKETT*, Delegation of the European Commission in Beijing,** EC, provided a visionary and brilliant insight on

Software & Services- European Community Research

Software and services represent a key industrial sector with more than 1 million specialists in the EU and a 200 billion euro market with 5.8% of annual growth for 2006/2007, at the European level. They are, by far, the most dynamic sector of the ICT market and they constitute a key component for any other sector of the industry, as a condition for development. A very interesting and important aspect is that 70% of the software development takes place in non-software companies, not only in the IT field but also in telecommunications and broadcasting.

There is a great difference between the IT approach to software development and the telecom approach. The traditional IT approach focuses on interaction with specific users in specific business sectors. It has a strong focus on applications for companies with the main goal to build the appropriate solution for a specific segment. From the telecommunications point of view, the underlying infrastructure, the network and generally the end-user is far more important. The convergence between telecommunications and IT represents a particular challenge for the development of software and the 7th European Framework Programme (FP7) will be used to address some of the challenges as well as to take advantage of some of the opportunities.

At European level, a good example of industrial commitment is NESSI (Networked European Software & Services Initiative), an ETP (European Technology Platform). Such technology platforms are set up by industries with some academic input in order to bring together key industrial players and to elaborate strategies as well as projects that will be then submitted to the European Commission's Framework Programme. NESSI brings together 25 core members and around 300 partners who try to develop a strategy for software & services. They focus not only on the technology side, but also on non-research areas, whether that is standards, regulatory frameworks or the development of certain applications with good consumer take-up.

The ICT part of the 7th Framework Programme, receiving about 9 billion euros (about one quarter of the total spending of the Framework Programme) over the next 7 years, is divided into 7 challenges. One very important challenge is called "Pervasive and Trusted Network & Service Infrastructures" where proposals can be made by industry and academia from Europe – but also form around the world, with China currently being the largest third country participant in the ICT part of FP7. The first call of FP7 recently closed and a cluster of 27 projects with a funding of a total of 120 million euros is currently under negotiations. Among them, the NEXOF project will develop a global European architecture on open source

The European Commission is interested in supporting software development, due to its huge importance for the competitiveness of all industry sectors. In the context of convergence, not just the IT sector but also the telecom and the broadcasting sector use and are developing software too and need to be supported as well. On the other hand, the future of Internet resides in services which represent already 70% of GDP in modern countries, so the software for the Internet of services will be essential in the next years.

* represented Jesús Villasante, Head of Unit "Software Technologies", DG Information Society and Media, EC

The **Q&A** following the presentation referred to the importance of software in the discussions between the European Commission and China. Alison Birket stressed that open source software is one of the issues of great importance in the discussions taking place between China and the EU and some of the EU countries.

MARGOT DOR, Director Strategic Projects, ETSI, [www.etsi.org], presented with great enthusiasm and energy ETSI's point of view on open source software and interoperability in

ETSI – Open for Business

ETSI is a non-for-profit organisation with European roots but with global membership (700 companies from all around the world) that produces standards such as GSM, GPRS for mobile telephony or DVB for mobile television. ETSI takes a great interest in interoperability by creating workgroups for the validation, conformance and testing of different services from this point of view.

If in the past each service - fixed telephony, mobile telephony and television - was delivered using its own type of pipe following a "spaghetti-like" logic, today we are moving on towards a "lasagne" model with convergence present on each layer: access, transmission and the final services delivered to end-users. The World Radio Conference decided recently on WiMAX as the air interface for the IMT-2000 and this is an example that there is already convergence in the access layer. Afterwards, everything goes more or less into an IP pipe and then there is the middleware and web services layer where standardisation is necessary to tailor a series of services for banking, education, transport, etc. into what is called SOA (Service Oriented Architecture).

The need for standards is not the same in the lower layers as in the upper layers. Industry representatives sustain that in the lower layer where the development cycles are long and the costs are high there is a need for strong, robust standardization. In the upper layers the standards have shorter life-spans and must be issued very quickly and address very specific issues, so the standardization process needs to be more flexible and reactive.

The industry agenda for ETSI includes some very interesting points. The ICT infrastructure development is nowadays software related and new functionalities are put forward by software upgrade including over-the-sir. Today the industry wants first to put their products on the market and solve the interoperability issues ex-post. In addition to this, the fragmentation of the standards production market due to the new entries, changes the interoperability engineering that must reconcile many components from heterogeneous origins.

The standardization and intellectual property strategy of the ETSI members demands strong rules for the access layer and more flexible one for the middleware and upper layers.

Following this new trend, ETSI creates the Centre for Testing and Interoperability, a fast track process Industry Specification Groups addressing R&D projects and ETPs and cooperates with other organisations like the Global Certification Forum and the WiMAX Forum. ETSI should change its vision from techno centric to a market vision by creating specifications that will gather enough interest to build a profitable industrial ecosystem.

There is no open source licensing yet but this question will pop up in the future because the right to modify raises a conformance problem. ETSI uses open source because in many cases the code is the specification (codecs for GSM and UMTS, test languages, OSA/Parlay code) and this situation does not exclude intellectual property rights claims over them. This is the path ETSI would like to follow in solving interoperability problems for software and services.

The **Q&A** referred to whether ETSI's implication in the upper layer standardization is a way to open the IPR policy of its members in the future towards free licence. Margot Dor answered that ETSI has a fair, robust, non-discriminatory IP policy for the access layer, uses its knowledge into the upper layers but the issue of openness has not yet arisen.

CHRISTIAN ROHNKE, Intellectual Property Partner (Germany), WHITE & CASE LLP, [www.whitecase.com], presented with great know-how

The Future of Patent Law – Standards and Interoperability

Software patents are a very complicated legal matter mainly due to the inner nature of the software, different from other devices. In the USA, there is no question about the patentability of all kinds of applications, including computer-implemented inventions with no technical content. On the contrary, the European Patent Convention contains an express exclusion from patentability for computer programmes "as such". Still, there are thousands of software patents granted by the EPO because most of the computer programmes are not programmes "as such" but technical inventions.

Compared to copyrights in software, software patents cover more technical functions and they are not related to the source code. One famous example is the one-click patent used by Amazon.com which describes a function that may be obtained with thousands of different source codes without any risk of copyright infringement; this is why this patent was finally aborted. On the other hand, at the beginning, the Patent Offices worldwide lacked experience in the software field, especially in determining the state of the art which means that today many granted patents are being re-examined and may be subject to cancellation.

Most companies won't launch a new software product if they cannot market it in the USA, which requires a patent, so the competition to obtain them is very aggressive. Even more, in the context of interoperability, new products using functionalities or features of the operating systems that are patented may become patent infringing, so certain IPR should be licensed or lost completely. In Europe, the Open Source movement managed to defeat an EC directive that would have made software patenting much easier and excludes any products that need third party licences.

The real issue is the patent on technical standards in software and telecommunications. Some of these standards are mandatory and established by public authorities but many of them are factual and come from the leading position of a product on the market and need of the consumers to use it. Official standards require from the owner a statement of intention to

licence on RAND (Reasonable and Non-Discriminatory) terms, while factual standards may lead to an abuse of market power.

Patents are firmly anchored in the legal and economical systems of industrialized countries and even constitutionally protected property in some of them. In other words, patents will not be abolished but they may become more restrictive. Some of the possible changes are: the requirement of novelty and inventive step for the technical component, compulsory licence may become more common especially for standards with dominant positions on the world market and where the public interest is at stake (research, education, etc). IBM proposes a new form of patent – the European Interoperability Patent – which will not grant injunctive relief to the patentee, only a right to royalty payments and in return there will be no translation requirements and it will be easier to prosecute.

The outlooks are that the patentees face public pressure and the outcome is likely to be a limitation of patent rights and the mechanisms presented above may be used to limit market power where standards are developing and where the interoperability is at stake.

THOMAS ANDERSSON, Chairman of the GTC International Council and President of the Jönköping University, Sweden, gave a visionary outlook on

Innovation and Trust in the Digital World

The Global Trust Center (GTC) is an independent organisation based in Sweden, with a vast international network that supports the development of operational mechanisms and practical tools to allow the establishment of trust in the digital world and to enable seamless transition both ways between non-digital and digital space.

During the last decades, the world has been in the midst of a rapid evolution from data to information, to knowledge, and is on the way to a ubiquitous society that needs interoperability to fulfil the potential of the ecosystems and the coopetition whilst still grappling with the challenges of the earlier stages. For governments and policy circles in general, R&D is the mean to achieve this ubiquitous society and for this reason GERD represent more and more of the GDP. Despite this great intensity of R&D, today there is a weak connection between innovation and what end-users really need.

The funding of new ideas implies public and private money and despite the strong commitment of both sides, that still leaves a gap to be filled out, possibly with subsidies. For the GTC it is not about a lack of money but about a lack of ability between the key actors to have an interface, to trust each other and to work together bringing each, their specific competences.

In order to capture the full potential of the ubiquitous society, of ICT and innovation, in terms of policy the piecemeal vision should be replaced by a systemic one. The ICT are everywhere but technology shouldn't be used for technology's sake. That is why a new interface is needed between business, academia and government centred on the human being, whose needs and rights must be expressed, recognized and enforced in the digital world, as in the non-digital.

The digital world is database generated, has few mechanisms to trace, account, audit or validate data and a biased legal environment. The user should be able to transit seamlessly from the real world to the digital one but at this stage, the digital world is fragmented; it lacks

internationally accepted standards on authentication and privacy, interoperability is still weak and only piecemeal efforts are being made to address security. Identity theft is increasingly costly and dangerous because the terms on which the user interacts with its counterpart cannot be set today.

The point is to translate the trust experienced in the real world, which is a subjective, personal, instantaneous feeling, into the digital world. To make this possible, the GTC wants to form an independent and unique platform for all stakeholders to place the user at the centre of all interactions, reaffirming the fundamental values of legality, integrity, accountability, security and privacy. So GTC has issued a Global Policy that specifies the functionalities that will allow a seamless transition, both ways, between the real and the digital world, respectful of all jurisdictions, technology and vendor neutral. As the governments and the companies need to trace the data, it should be done in a space reserved for the individual human being and on his terms.

GIANNI CAMISA, Chief Executive Officer, AlmavivA Group, Italy, delivered a great presentation on

The Real Challenge: Convergence Towards a Business Model 2.0

AlmavivA is a system integrator and outsourcer of Business Management Services who believes that open source and open standards will foster business innovation and produce a shift to a business model with the user at the core. The success of open standards will foster cooperation and integration and their pervasiveness will make companies move their resources from the traditional space of software development to the user's needs producing a major change: the business model 2.0. The shift will be from an ICT vision to an ICS one. A relevant example is the Italian Public Connectivity System which uses open standards to link all local administrations and central government and provide a single point of entrance to the user with access to all the services.

Open source pervasiveness will induce important changes such as a focus on services and business needs, an emphasis on SOA, an increasing role of the prosumer (the user which is both producer and consumer) and the emergence of the wikinomics as the social effect of Internet 2.0. The use of OS will free resources that may be used for more relevant things that will foster innovation. Even more, it will force the shift from software "factories", proprietary platforms and traditional relationships between customers and suppliers to a situation where the software is a facility, the difference between client and supplier is erased, business management software will have a central role because competition will be focused on service model.

Document management, interoperability, identity management, CRM services are just a few examples that open source solutions really work. Technology will become a pure commodity. Therefore, the business model 2.0 means that the system integrators will be the "innovation engine" together with their clients, developing high value offerings based on end to end services, constantly addressing customer's life time value and working on brand recognition.

The **Q&A** referred to whether Almaviva is involved with standardization. Gianni Camisa answered that they are active on several areas of standardization on a local level, but the main goal is meeting clients' needs. Almaviva moves towards the business model 2.0 so prefers solutions including open standards and open source, except for the cases where the client requires a specific solution already existing.

EIKAZU NIWANO, Senior Research Engineer, NTT Corporation, Japan, presented an expert's point of view on

Diversity-oriented Secure Chip Management towards Network Convergence

Today we encounter many different kinds of networks, such as fixed, mobile, internet, public, private, specialized, etc., and a variety of terminals (STB, smart phone, PDA, etc) delivering a wide range of services. Convergence is underway and one of the major challenges refers to security and credentials and secure chips represent a solution. Such chips are already used on a large scale: smart cards for authentication, SIM cards for mobile communications. Even more, to secure data management, the European Standardization Organization for NGN adopted ISIM for IMS services.

Networks consist of service providers, networks, terminals and the secure chip. Network convergence must start by defining a common model of secure chip for authentication, trust and policy. Standardization is needed for policies, authentication protocols as well as interfaces between providers and terminals, terminals and smart chips or providers and smart cards. Currently, there is standardization for data management applications (such as ISO, Global Platform, 3GPP and TPM is still to come), credential management and secure channels (ETSI TISPAN for ISIM, ETSI SCP for EAP, but there is still work to be done for the interface between terminal and card which remains vendor specific). Open source becomes more and more important in the middleware between terminals and chips and efforts for standardization are made at national levels (Finland – FINID, Belgium: BELPIC - the Belgian electronic personal identity card) or international (ISO 24727).

There are standards for each network but to achieve convergence there are still some issues to be addressed: standardization of interfaces beyond the differences of diverse networks, the diversity management of credential container for dynamic and easy usage of secure chip on the above environments, the standardization of data management applications and authentication, complete separation between network, terminal and chip.

BRUNO CARRON, Head of Erudine Centre of Competences, EADS, France, [www.eads.com], presented a very innovative use of interoperability in

EADS and Erudine Behaviour Engine – A Standard Way to Manage the Business Rules within the EADS Defence Market

EADS Defence and Communications Systems developed the Erudine Behaviour Engine to meet customer's expectations in the field of business rules on the defence market. It consists of a revolutionary way to capture the behaviour of systems and automate the work of IT developers thus reducing large elements of software development. Furthermore, Erudine is very appropriate for solving complex and risky problems as in the military defence area because the computer can be taught the business rules, thus helping with decision making.

When developing a system, the starting point is always the client's requirement. If the problem is simple enough, a single developer may build the entire system, but for more complex projects, the task is divided between business analysts, designers and developers

who have to communicate and work together which is risky and time consuming. All these interfaces may be avoided with the Behaviour Engine because the computer learns the business rules at different steps of reasoning. As they can be easily updated, lesser effort will be needed between two releases of the system.

The creation of a system starts with the capture of business rules from relevant examples brought in by the customer. Then the systems is developed and tested on basic cases to ensure its consistency. Its compliance to the business policies is also checked. Next, the applications are developed and end-users get to teach the computer what it needs to do, thus ensuring that the final product answers exactly the customer's demand and facilitating any later updates (changes in business rules or regulations).

Erudine assures interoperability at business level and at technology level. At business level, the tacit knowledge is captured and becomes reusable by other experts; iterative capture allows a project to be adapted to other users; implementation, required documents and reference cases are available. At technological level, interoperability is achieved due to standard requirements in the design phase, implementation phase and acceptance tests.

An example is Serket (Security Keeps Threats Away), project developed for the EU for the security of public events in large places. The enormous amount of data coming from different sources need to be correlated and analysed together and the computer perform this task, replacing experts. This project demonstrates a new architectural principle for complex event processing for which EADS has developed a Threat Assessment Module which recognizes threatening situations and behaviours and controls the decision process.

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After the presentations, the **Q&A** raised the question of the role of corporate governance in standard setting. Christian Rohnke answered that good corporate governance deals mainly with the corporation, shareholders and stakeholders. Outsiders wanting to use their technology without paying royalties may be an issue of interest depending on the corporation's policy.

The next question was about the collaborative initiatives towards aggregating different standards and technologies such as smart chips and USB tokens to achieve convergence over different networks. M. Niwano answered that some global platforms are going to discuss the use of different secure chips for different applications and efforts for convergence are already made, for example by the use of SIM cards for fixed networks like in TISPAN. Margot Dor answered this question by bringing up 3GPP, an example of collaborative initiative. Only that, moving towards convergence is more like tectonic plates shifting. In the case of mobile banking, the key issue is the ownership of the transaction which is more a business question than a technical one. Thus, standardization and convergence depend on what the industry wants because organisations like ETSI do only what the members are asking them to do.

The last question referred to whether in the upper layer there are too many or not enough standardization organisations to settle the standardization conflicts between players (i.e., Microsoft and Sun). Ms. Dor answered from ETSI's point of view there are too many standard organisations but industry is founding and funding many new standard organisations for very legitimate reasons and it is only up to them to appreciate whether there are enough of them.

The **chair** and **moderator** of this opening session, **MIRIAM SAPIRO, President of Summit Strategies International,** USA, welcomed the participants and panellists by stressing that Venice, a city of dialogue and diversity, is a fitting venue for the Global Forum. Venice is set at the crossroads of the Romaine and the Byzantine empires and today its at the intersection of eastern and western cultures. Each year, the Global Forum brings together a rich diversity of practices and perspectives on how to tackle the challenges of the future. This year's topic is "integration and innovation", because people integrate, they innovate, and then they integrate again and continue to innovate in a continuous and increasingly rapid cycle.

The chair and moderator introduced the key note panellists and explained that each speaker will offer a unique perspective on how well each of them is up to the policy and the regulatory challenge of migrating from traditional single application regimes to multi-layered applications and to a diversity of services in a world of increasing challenges due to greater convergence.

ROBERT MORIN, Secretary General of the Canadian Radio-television and Telecommunications Commission – CRTC, Canada, delivered a most inspiring and interesting talk on

Empowering a Connected Society in a Digital World

In the last number of years Canada has seen several waves of industry consolidation forced upon by competition and the need to create synergies, economies of scale, and access to larger markets. In light of this changing landscape in the Canadian broadcasting industry, the Commission has held a public hearing last September to review its approach to ownership consolidation and issues related to the diversity of voices in Canada. A policy-decision will be made in the near future. This proceeding is paving the way for a holistic, and simplified approach in dealing with ownership consolidation in Canada.

In light of the increased competitive environment in the telecommunications market in Canada, the CRTC conducted a review and a public process leading to a roadmap for forbearance in local telephone markets to foster increased reliance on competitive forces. The commission commenced the forbearance process and will be closely monitoring the effect of this decision on meeting consumer interests (quality of service and affordability). In the broadcasting arena, the CRTC needs to assess the evolving environment facing the conventional broadcasting system and evaluate new regulatory measures to respond to Canadian needs and industry reality environment and develop smarter and lighter regulation with more flexibility for market forces. The CRTC has commissioned an independent re-examination of all Canadian broadcasting rules and regulations to help determine the best approaches possible, and where necessary develop smarter regulations allowing for an effective balance between current market realities and social/cultural policies. This report was published recently and the CRTC is currently evaluating all of its recommendations.

The new media broadcasting is being redefined on a frequent basis, and the cycle of change is now measured in months rather than years. The transition is already taking place to digital and high definition TV. Television today is being shaped continuously in the online environment. Broadcasting on-line is changing program viewing from a passive medium for

audiences to an interactive channel brought about by its convergence with other media, enabling audiences access and interaction with a wider array of information from their couches, or on the go. An emerging class of new media broadcasting is now shaping up online that distinguishes itself from the rest by offering analogous-to-TV experiences based on high quality professional content (with legal program rights). As a result of this rapidly evolving environment, a New Media Project was recently established by the CRTC with the mandate to closely examine new media broadcasting.

The evolution of the Internet has seen several explicit and rapid changes, some forced upon by technology and others by consumer and market forces. This transition on the Internet from content (search and access) to people (social and collaborative) is seeing similar applications in the new media broadcasting world. The early model of one-to-many broadcasting offered by conventional TV (linear TV), is now seeing a transition towards a one-to-one relationship (VoD), enabling an era of choice and personalization, but remains primarily a relationship of people to the content (i.e., when, where, and what people access). A more significant change is now taking shape which is the one between media producers and various communities online, that is the one-to-many cultures (brand cultures, fan cultures, political cultures, etc.) relationship. These communities are best described as participative knowledge networks where learning is augmented through social interaction (web 2.0), dialogue with experts (media producers) and each other (consumers).

This participative environment referred to as Web 2.0 is enabling a divers range of societal benefits, including the introduction of interactive and social learning in classrooms and professional business settings, enabling self expression and dialogue between communities about their culture and heritage, improving the exchange of research data in health and educational environment for fast access to information and leveraging of the collective knowledge of the community. All contributing to a change from an individual experience on the internet to collective cultural experiences, where the public is acting as communities and leveraging their collective intelligence.

Participative spaces are making their appearances in several of the new media broadcasting offerings such as Joost, Bablegum, and others, and allowing the public to rate shows, endorse advertised products, and participate in creating story lines. What makes this interesting for the media and entertainment industry is that this enhanced cultural participation deepens consumers' emotional engagement in media properties, expanding their awareness of both content and brand.

The following **Q&A** addressed the question about the Canadian perspective of transforming the digital gap into the digital dividend in terms of reaching into the far corners of Canada. Robert Morin explained that this has to be seen in as the continuation of a programme that was established some years ago in schools in order to make sure that everybody had the opportunity to use computers in schools and to grow with it. Currently two studies on the impact of the programme are realised. The results will be available next year.

DEBORAH TAYLOR TATE, Commissioner at the Federal Communications Commission – FCC, USA, eloquently described the challenges of

Convergence and Connectivity: Bringing Broadband to the People

Connecting to the Internet at broadband speed means connecting to the world. The Internet can, with the click of a mouse, take our children on an educational adventure – to the Louvre or the Library of Congress, on an exploration of the Great Barrier Reef or the Great Wall of China. It can help promote civic participation, and access to healthcare for families. The market to provide broadband service is changing every day, due to endless innovations in communications technology by different types of providers. The U.S. has opted for a light regulatory touch for broadband service provided over cable systems, telephone lines, power lines, and wireless platforms, which helps ensure a level playing field – or equanimity of regulation – among competing providers, no matter the technology or business model.

Using wireless transmissions, satellite service providers offer broadband services and, increasingly, so do terrestrial wireless service providers. In the U.S., there were about 12 million wireless broadband connections last year, counting satellite and mobile devices.

There is another type of convergence today, and that is a convergence of interests – public, private, global, and local – dedicated to providing greater access to broadband communications. This convergence is leading to new thinking. In those places where there is no broadband service, this new thinking moves beyond government simply writing a check to a non-profit group to promote service or issuing requirements that service providers expand into particular areas. Rather, one of the most innovative and effective solutions in the United States has been a public private partnership known as Connected Nation. This non-profit group works with governments, communities, businesses, and service providers to identify supply and demand conditions and tailor programs that work. Connected Nation develops maps showing areas in which broadband services are available and where they are not, outlines ways businesses are using broadband services, identifies barriers to consumer adoption, and helps develop plans for broadband expansion. In the State of Kentucky, a state in which 43% of the population lives in rural areas and that is approximately the size of South Korea, Connected Nation's project has had such success that it expects 100% broadband coverage of the state by the end of this year.

More and more leaders are beginning to recognize the potential dangers of the Internet to children. Just as the Internet can take our children to the Louvre or the Library of Congress, so can it take them to the back alleys of abuse and sexual exploitation. In fact, one in seven youth between the ages of 10 and 17 has been sexually solicited online. Parents need to be just as aware of the dangers in their online world as they are in their offline one. Industry also must get involved, and many companies have made important efforts, including starting education and outreach campaigns to teach parents about the tools that are available to protect their kids online. This is not about censorship. It is about illegal activities – child solicitation and worse – that are criminal. Law enforcement officials have addressed financial fraud and identity theft and, increasingly, are applying this expertise to child protection.

Finally, there is the very real problem of piracy. While amazing technologies have not only enhanced the ability to distribute and share more music and video that even before, it has also allowed pirating and counterfeiting of great art and other works. In the U.S., piracy and counterfeiting cost the economy between USD 200 and USD 250 billion annually across all industries – from movies and music to software, auto parts, and pharmaceuticals.

Technology speaks a language of peace. This language is understood across cultures and respected for its tremendous ability to connect people in new ways – from eCommerce, eGovernment and emergency alerts, to access to educational and healthcare opportunities and the "virtual" jobs of the future. But ensuring that the advances in technology continue – and that they serve all of use, especially the children – requires a global dialogue in this shared language.

The question of the **Q&A** part of the presentation was whether there are sufficient investment and incentives in the U.S. to deal with the potential dangers. Deborah Taylor Tate stressed that it is patents who are the first line of defence and who have to educate their children. Another option would be to provide more education and media and technology literacy to the children through the universal service fund or funds provided to schools.

ANTONIO AMENDOLA[*]**, Italian Communications Regulatory Authority – AGCOM & European Regulatory Group – ERG**, Italy, provided most interesting insights into both the work of a national and a European regulator:

New Scenarios, New Rights, New Duties, New Regulations?

There is a shift from the role of the regulator into a deregulator. However, deregulation of a market implies a huge amount of work. The trend goes for a new and collaborative approach of regulation, which is regulation 2.0.

The European Regulators Group was set up by Commission Decision in 2002 and is composed of National Regulatory Authorities from 34 European Countries (27 EU Member States, 4 EFTA Members with observer status; 3 EU candidate countries with observer status. The European Commission attends all ERG meetings and can participate in the activities of ERG expert groups.

The ERG is probably the first example of collaborative regulation in Europe. The objectives of the ERG are to advise and assist the European Commission in developing the Internal Market, and to ensure the consistent application of the European regulatory framework. Furthermore, the ERG enables NRAs to share their experiences of implementing the framework and of responding to market and technological developments. ERG activities are based on a Work Programme prepared for each calendar year.

The ERG seeks to ensure maximum transparency and consultation with stakeholders. For instance, the ERG conducts consultations on the proposed annual Work Programme and on all draft decisions as well as public hearings on major topics. All decisions and outcomes of consultations are open to the public. The ERG annually issues a report of activities, which is submitted to the European Commission and published.

ERG 2007 Work Programme focuses on the three priority areas: Regulation harmonization and innovation. As to regulation, ERG is at the forefront of the evolution of the regulatory framework on electronic communication, but is also involved in recommendations and the implementation of the international roaming regulation. Boosting regulatory harmonisation among ERG members and effectively contribute to the development of the internal market is another priority of the ERG. In the context of innovation, the ERG is particularly involved in NGN and the ways of how to foster investment while at the same time maintaining a strong and mature market.

The regulators are faced to new rights, freedoms and constraints. Technical issues apart, convergence is especially about users and the exercise of individual rights is enhanced by new 2.0-like technologies that bounce and clash into each other with increasing impacts. Regulating the new markets and fostering innovation is a multi variable equation. The main challenge for regulators throughout Europe is to find the right balance between technical regulation and how to let people fully exploit their fundamental rights.

* represented Roberto Viola, Secretary General of AGCOM & Chairman of European Regulatory Group, Italy

YANNIS LARIOS, Advisor to the Special Secretary for Digital Planning, Ministry of Economy and Finance, Greece, persuasively shared the Greek vision of a

Digital Strategy – Paving the Greek Digital Landscape

In 2004, broadband penetration in Greece was at 0.1%-0.2% of the population, lagging very much behind the EU-25 average. However, the country moved to a new reality in a couple of years: With a compound annual growth rate of 215%, Greece has been the fastest growing country worldwide in terms of broadband growth rate in 2006 – a trend that continues in 2007.

Important measures to foster broadband deployment in Greece have been the transposion of the EC Telecoms Directives in January 2006, which liberalised the market and led to increased competition, and the efforts undertaken by the Greek Government within a "Broadband Action Plan to 2008", initiating a series of projects focussing on people and businesses – not just eGovernment.

In the last 3 years there was a tremendous change in the number of users: More than 40 digital services have been funded in 2005-2006. Tax-related digital services are estimated to have saved citizens about 7 million productive hours and public sector employees 288,000 productive hours. More than 70% of businesses used the Internet for transacting with the public sector, and 92.5% of businesses and 38% of smaller enterprises have access to the Internet. 39% of the Greek citizens (aged 15-65) are using a computer – which represents an increase of 25% compared to 2004.

To change the digital landscape in Greece, despite the efforts of the NRA, a shift in viewpoints was needed. The Greek Government launched a new digital strategy – and its main element was not the important funding of about 2 billion Euros up until 2013 – but a change in viewpoint. All projects are now seen from the viewpoint of the individuals, the citizens, and the businesses. No projects are designed only for technology sake. This change of focus has allowed to move away from typical eGovernment projects, which are often pure back-office projects with no perceived benefit for the citizens. With this new digital strategy, the Greek Government changed the viewpoint towards productivity improvement and an increased quality of life – and even the targets that have been set were not technological ones.

Greece is moving fast towards broadband convergence with the EU. By 2009, Greece will reach the average level of broadband penetration of the European Union. Even the European Commission endorsed the project by referring to the Greek Digital Strategy as the currently most significant broadband project undertaken by a Member State.

However, it is not possible to move forward just by providing funds from a central government. Initiatives for local levels, the citizens and the communities are crucial. Thus, the government is trying to mobilize the communities and started even training mayors and small municipalities in order to make them understand the Internet.

At the end of the presentation, Yannis Larios invited the Global Forum to Greece. Athens would be glad to host the Global Forum 2008.

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The first question of the concluding **Q&A** section of the session referred to two important comments made by the panellists in the context of regulation: going out to the end users and to look at the market place, rather than the organization. Regulators are often very much constraint because they are organized in simplicity around the government, or around the technology, or about defining one industry versus another. The question was whether the biggest constraint to the regulatory environment in this new market is the fact that people are not necessarily focussing on the end user and, but still focussing on the technology and the industry structures.

Yannis Larios, representing the governmental perspective, clarified that Greece is working in parallel. The government has changed the viewpoint to focus on citizens and is realizing projects with concrete benefits for them. However, Greece is also providing funding and giving incentives up to 50% for broadband investments in remote areas. Moreover, the Greek Government works in close co-operation with the regulatory authority in order to calibrate all parameters related to technology and aspects related to the market. In short, the government has the viewpoint of the citizen and the business, and the regulator is tackling all the details related to technologies, the market, and the market players.

Antonio Mendolo, representing the regulators' perspective, added that regulators are not build in simplicity around only one aspect of the market, but rather in complexity around the market. Regulating a new market is a multi-variable equitation, where all variables count – even if the user is probably the most important variable.

The second question addressed to Yannis Larios was about who decided to implement this digital strategy in Greece: Was it a political or administrate decision and is it possible to transpose this strategy to other European countries? In his answer, Yannis Larios stressed that Greece had a problem with broadband for two reasons: First, there was no market, because the market was not deregulated. Second, there were rural areas where people did not want to have broadband and therefore, the market would not develop there. The Greek Government cut this vicious cycle and made serious efforts by using European structural funds and working very closely with the DG Competition in order to find a formula to provide incentives up to 50% for investments in all regions of Greece, with the exception of Athens and Thessaloniki. This mix of transparent financial incentives proved to work very well.

Regulation & Governance

ANDREW LIPMAN, Partner and Head of Telecom Group Bingham McCutchen, USA and **moderator** of session 3 made a wonderful introduction to the regulatory panel underlining the new role of regulators in today's world:

If 10 years ago some people thought that the world would have become self-regulated, they were wrong, and the role of regulators is more and more complex because the telecommunications environment has more subtleties: providers are freed from market entry pricing and tariff regulation but there is more regulation on new services, child protection, privacy, anti-pirating, law enforcement and national security. Paradoxically, even if the world is moving towards a deregulatory environment, regulation is dealing with much more complicated issues such as promoting investment, assuring a fair and equal playing field for all actors, sustaining policies of national interest, subjects that the speakers will address in the following presentations.

The session's **chair**, **INNOCENZO GENNA, President of the European Competitive Telecommunications Association (ECTA)**, presented with great know-how the status of the European regulation in

Regulation and Convergence

ECTA represents around 150 members which are new entrants but also national and pan European operators. In Europe, the first regulatory framework became effective in 1998 when the telecom market has been liberalized and it has been drastically revised in 2003 when 18 markets have been defined and national regulators have been given the power to asses the competition and need for regulation on each of them.

The system is under revision once again and the main changes regard the functioning of the framework. Commissioner Reding wishes to create a European Agency superseding the European Regulator Group, to extend the Commission's veto on national regulation thus centralizing the decision making and to give national regulators the power to separate the networks of dominant operators. A strong opposition, especially from Commissioner Kroes from DG Competition has lead to a compromise: deregulating the market by strongly reducing the number of regulated markets from 18 to around 7 and proposing a package review that may become law at the end of 2009. This package will not dramatically change the current framework; but just adapt it to the new convergent environment taking into account the outcome of the market analysis. The 3 main pillars are: more effective regulation, completing the single market by erasing the obsolete differences between national regulations and connecting with citizens.

The overall state of competition on the 18 markets shows that 14 of them are generally not competitive for numerous reasons. After the 13th of November when the recommendation will become effective and the number of markets will be reduced, important changes will be seen in the national regulations. A strong debate is concerning the European mobile market where great discrepancies may be observed between countries due to the different level of

competition and thus regulation. Compared to the USA, the European origination and termination costs for mobile networks remain very high which explains the poorer usage of this service.

The proposed package would like to strengthen the European telecommunication market and enhance investments and growth but important issues are still to be debated: how to regulate NGN; whether or not to regulate mobile access (MVNO); which policy for mobile TV? IPTV: need for specific access regulation?; need for a Euroregulator to address pan European issues and ensure harmonization?

The Q&A referred to the number one policy of ECTA in the context of network convergence. M. Genna answered that ECTA wants to be technology neutral, so independently from network unbundling or technological upgrade, the competitiveness should be the most important issue to take into account when reassessing politics and regulations in telecommunications.

JEAN-FRANÇOIS SOUPIZET, Head of the International Relations Unit at the DG Information Society & Media of the European Commission, made a captivating presentation by presenting his personal point of view on the results of a public consultation following the World Summit on the Information Society (WSIS) on

International Cooperation

The goal of the international public consultation that has taken place between June and September 2007 was to identify the emerging issues in the dialogue between governments regarding the information society. The reasons for such a public consultation are the global dimension of the ICT sector, its importance for the European economy and the need for coherent policies. The 60 answers came from governments, national regulators, telecom operators, associations and others from Europe and America. The fields of interest were the objectives of the international cooperation, regulation, market access, R&D and global issues.

Among the objectives of international cooperation in the field of ICT there are: the need for regulation in the sense of common rules and legal certainty, the collaboration for research, for IPR and standards, the liberalization of the markets in the industrialized countries and the fight against poverty in developing countries. Among the regulatory issues, the priority should be given to the transparency towards customers, removal of market barriers, harmonization of regulatory frameworks, prevention against anti-competitive practices and free and equitable trade. Although the answers came mainly from the EU, the EC would like to invite countries like Brazil, Russia, India, China, and South Africa along with the traditional partners like the USA and other industrialized countries to talk about subjects like market access and regulation, global development of ICT, incentives for private investments, radio spectrum management, etc.

On the scientific cooperation, the results of the consultation showed that the areas of interest are internet technical challenges, communication technologies, the content and the security issues. The quality of partners and the impact on the market should be the only criteria when cooperating for research and respecting the contractual agreements should bring benefits for both sides: shared knowledge, risk reduction and an easier access to market. Interconnectivity and interoperability are the key issue when talking about the e-infrastructures because they will allow the deployment of global science projects at reduced

costs due to the use of high speed connections, appropriate software, simulations and data depositories.

The results also showed that the global issues that the information society should address are related to the environment and sustainable growth, risk reduction and crisis management, e-Inclusion and health, interdisciplinary collaboration, security, IPv6 and digital divide. Regarding internet governance, everybody agrees on the freedom of expression and a better dialogue and collaboration, but divergences still exist on network neutrality.

With this study, the international cooperation has been approached from a geographical point of view and a thematic one but maybe they are not the most appropriated. The citizen should be more important, the technology suitable for a specific challenge should be more important than a thematic vision because ICT may play an important role in addressing global problems. When it comes to defining its interests, the EU lacks coherence, but it is also very opened to partnerships with the rest of the world.

The Q&A raised the problem of the areas where significant developments have taken place lately in terms of communications and global policies. M. Soupizet answered that a huge effort is being done to offer better connectivity to Africa as an outcome of the WSIS meeting. ITU and other actors are taking this very seriously and EU will include this point on the agenda of the EU-Africa summit that are to take place in Lisbon in the next days.

THERESA SWINEHART, Vice President Global and Strategic Partnerships, ICANN gave a distinguished presentation on

Regulation and Governance

ICANN deals with the technical aspects of Internet and maintaining a single Internet over all that is interoperable. The Internet has come a long way since its beginnings in 1969 and it serves today 1 billion people but there is still much to be done. The greater the demand for Internet-based services, the larger and more complex the Internet ecosystem becomes. Internet has 3 operating layers. The first layer is the infrastructure which is fundamentally important for enabling data transfer over the Internet. The second one is represented by the Internet protocols and standards which have nothing to do with the content, they just allow global connectivity and this is ICANN's responsibility. The final layer made of content and applications is a realm facing many challenges related to regulatory issues in a convergent environment. A very important aspect is that no regulation can apply to all 3 layers.

The ICANN mission is to coordinate the global Internet's system of unique identifiers, consisting of the allocation and assignment of domain names, IPv4 and IPv6, protocol port and parameter numbers, as well as the DNS root name server systems. ICANN deals also with the policy development related to these technical functions. The members are coming from different areas, from governments to end-users and global participation is encouraged by fellowship programs with the developing countries. Ongoing work includes the implementation of internationalized domain names to facilitate improved multilingualism – issue that is being tested but the policies related to it will prove quite challenging; new TLDs, and policies surrounding these to streamline approach; creating awareness about the transition from IPv4 to IPv6.

It is difficult to define what the Internet will be like in 10 years but a few things can be predicted: electricity shortness will limit the access, mobile devices will be more and more

used and developing countries will probably leap directly to them, almost no industry will be offline, Internet will increase its role in geo-location and geo-indexed systems, monitoring different activities and even home appliances. The challenge from ICANN's perspective is how to ensure a single global Internet without threatening the billions of economic activity and millions of jobs depending on this single interoperable system.

Today, Internet is a powerful and pervasive technology that evolved due to cooperation and collaboration and is still evolving towards convergence and innovation with all the regulatory challenges that it brings along. In the future, maintaining a single interoperable Internet is the main goal and ICANN has a coordination role and responsibilities in this regard, but any regulation and governance must involve the stakeholders themselves, solving specific problems and building upon the already available experience.

The Q&A raised the issue of multilingual countries in the context of internationalization of domain names. Mrs. Swinehart replied that there are 2 different approaches in such cases: one concerning the policies connected to this and the other one regarding the mechanisms of implementation of such domain names. The challenges in such cases are related to identifying one language to put in place first in non-ASCII character sets and then deal with the longer term policy discussion on how to implement the other languages. Tests are being carried out for the technical aspects, but establishing a policy will be a longer process.

KATRIEN LEFEVER, Legal Researcher ICRI, Leuven University, Belgium made a captivating presentation on

AVMS Directive – Future Proof?

Since the TVWF Directive adopted in 1989 by the European Parliament, the market for television services has changed dramatically. Competition between linear services on different platforms has increased as well as the competition with the non-linear services. Further more, suppliers of non-linear services are subject to less strict rules and they touch more and more the public. For this reason, the European Commission decided to create a more modern and flexible framework described by the AVMS Directive.

This directive has a two-tiered approach: a basic one appliable to all audiovisual services i.e. protection of minors and an extended tier only for linear services (i.e., quantitative rules for advertising). This reason for this differentiated treatment is based on the idea that linear services have a larger impact on the public and a different level of control and choice of users. The user of non-linear services chooses when to watch the content of his choice, while the user of a linear service (traditional TV broadcasts) imposes this content to the people around him. With more and more young people using non-linear services to get informed, maybe their impact on society should be reconsidered. Fom this point of view the AVMS directive is not future proof.

An audiovisual media service as defined by the articles 49 and 50 of the Treaty does not cover electronic versions of newspapers which may include videos, so there is an uneven playing field between providers for online newspapers and online broadcasters. Beside the content providers, in the communication value chain there are also content distributors and network operators. The content distributors are aggregators that bundle broadcasters in a package, transmitted by the network operators to the user that subscribed for it. Another criticism to the AVMS directive is that it defines no rules for content distributors which are not responsible for the content they transmit. Considering their role, the directive should recognize their existence and create specific obligations and a liability regime.

The following Q&A raised the problem of minors' protection and the solutions found in Europe. Katrien Lefever answered that Member States must take appropriate measures to ensure that linear services do not include programmes which might seriously impair the physical, mental or moral development of minors. In the case of non-linear services, Member States must take appropriate measures to ensure that on-demand audiovisual media services which might seriously impair the physical, mental or moral development of minors are only made available in such a way that ensures that minors will not normally hear or see such on-demand audiovisual media services.

As commentator of the session, **BERNARD BENHAMOU, Senior Lecturer al the Political Sciences Institute in Paris and at the University Paris I Pantheon-Sorbonne**, France, made a visionary speech about the changes in the usage of Internet and its regulation in the near future.

Internet governance has been shaped by the current organisations, like ICANN, but major changes are coming. Among the 1 billion users today, 95% use computers to access Internet so one major change that can be foreseen concerns the usage of mobile devices on a larger scale. This would be a first step towards the Internet of things. The second one is represented by RFID chips that would soon be connected to the Internet.

The RFID chips will replace the traditional bar codes, with the major difference that product information won't be coded in the chip but it will be stored on the Internet. The system that would allow the connection between this information and the product is a subset of the current DNS systems, called ONS – Object Naming Service. If today Internet is mainly about information, RFID chips will allow the connection with all the surrounding objects and persons (i.e. identity cards could be RFID tagged). This situation will give a tremendous power to the entity managing the ONS system.

Passing on to the Internet of Things will create tectonic shifts because governance will be no longer an experts' discussion but a major privacy and sovereignty issue with a highly political aspect. Therefore a revolutionary kind of regulation is needed and this subject is of high priority on the agendas.

The Q&A following the speech expressed the concern with the reaction speed of the institutions that set Internet governance to these major technical changes. Bernard Benhamou answered that for the past few years, discussions between technical experts have taken place but now, they have been extended to important organisations like OECD, OSCE, EU, ITU, UN, ICANN that consider Internet regulation very seriously.

DANIELE AUFFRAY, Deputy Mayor of Paris in charge of New Technologies and Research, France, made a brilliant presentation on the infrastructure governance of

Paris, The Digital City

In Paris, the "City of Lights", the light has become digital due to the Parvi Program launched in 2001 for the deployment of very high-speed networks and wireless technology on the provision of Internet access to all. According to the French Telecom regulations a city can operate wired and wireless networks only if no offer is available which is not the case of Paris. Thus, the City Hall's mission is to encourage operators to deploy such networks. To

simplify things, Paris has a dense network of well maintained sewer and water distribution that could be used to install optic fibre with lower costs and efforts. The City has even lowered the fees by 25% in order to reach the target of having 80% of the buildings connected to high-speed networks by 2009.

Furthermore, the city created a "smart building" label and a supervisory body for the development of high-speed broadband and services and looks to incite operators to share their networks with a test that is currently under way. 400 hot spots providing free WiFi access, representing a 5M € market, have been created in collaboration with an alternative operator: SFR. To encourage mobility, specially designed benches and chairs with WiFi access and solar power supply have been deployed. The City Hall of Paris supports the Silicon Sentier project which is an industry's experiment providing free WiFi access to professionals, inhabitants and tourist of a certain neighborhood and thus stimulating mobility and innovation. By renting city lamps, city lights and roofs of municipal buildings for Wimax and Personal Mobile Television, the city of Paris is doing its best to be a Digital City.

The Q&A referred to the results of the digitalization of Paris on attracting businesses and encouraging them to stay and expand. Danielle Auffray answered that the Parvi Program has mainly a social purpose and the main problem for businesses in Paris is not infrastructure but the high rents.

DANIEL AGHION, Executive Director and Co-Founder of WIRELESS INTERNET INSTITUTE - W2I, USA, [http://w2i.com], made a very interesting presentation of the

The European Commission Local Government Broadband Wireless Conundrum

Wireless Internet Institute has the mission to accelerate the adoption of broadband wireless for economic and social development. In the age of trade globalization and telecom deregulation, local governments take an active role in fostering telecom competition and innovation on heir local markets. Hence, the importance of national regulators and of the European Commission within Europe is growing when it comes to addressing the intersection of the local governments and the telecom industry.

The local governments' projects are evaluated because public access services may compete with private sector offerings. Some of the European projects have even been challenged in court and city officials are wondering whether to engage further more. In the vision of the European Commission, investments should be mainly a private sector concern and local governments should involve only when market failures or cohesion problems occur.

Such a position could have some negative effects: a slowdown of such local government broadband wireless projects, stifling innovation driven by a pervasive information society, stifling competitiveness of the cities in front of the increasingly demanding global knowledge based purposed workforce and accentuating the digital gap at a time when policy makers and regulators are discussing how to leverage the spectrum to Gigabits/second.

In order to overcome such impediments, ways should be found to loosen up the EC rules, local governments should experiment more with multi purpose networks and draw lessons that may be used to create a more flexible framework and last but not the least innovative public/private partnerships like the one in Paris should be put in place.

The Collaborative Knowledge Society in a Digital World

The **chair** and **moderator** of the session, **WILLIAM SLOAN COATS, Partner, WHITE & CASE LLP**, USA, [www.whitecase.com], provided a fascinating insight in the world of Massively Multiplayer Online Role Playing Games.

MMORPGs – Present and Future Trends

By the end of 2006, there were 30 million subscriptions in total to all MMORPGs. Prominent games are World of Warcraft, Lineage, Star Wars Galaxies, and Second Life. The global online game market generated USD 3.8 billion in 2006 and revenues continue to increase (predicted global revenues of USD 11.5 billion by 2011). In China and Korea MMORPGs are particularly popular. In 2006, MMORPG revenues hit USD 662 million in China, while casual game revenues reach USD 153 million People are playing these games so obsessively that young man died from dehydration and exhaustion.

With regard to different business models in China and the U.S., in the U.S. a monthly subscription fee is the customary revenue model. For instance, World of Warcraft charges USD 15 per month. China essentially uses a free-to-play model. Operators charge users according to virtual items or enhanced abilities, not by time. This model was adopted by industry leader Shanda Interactive in November 2005. Shanda has 20 million active users. The average player spends 2-3 hours online per day. 90% of the users are adults. Active players spend an average of USD 8 per month.

Due to concerns about the addictive nature of World of Warcraft, in April 2007, a new Chinese law limits the amount of time minors can spend playing online games. Online games must include software that prompts players under 18 once they have played for more than 3 hours. After 5 hours, the game limits the abilities of characters. However, it is up to the player to say if he/she is under 18 and there is no way of checking if the person is telling the truth.

Lineage, released by the South Korean computer game developer Ncsoft, has been the game that has been killing the most people. It has millions of subscribers and it tends to be young man between 14 and 25 that play these game. LucasArts released Star Wars Galaxies in June 2003. Unleash the Force will be available on the Wii home video system from Nintendo in the Spring of 2008.

Linden Lab's Second Life is the most bizarre of all these worlds as they make money by selling virtual real estate that only exists on a computer server. Fashion is big business in Second Life, along with entertainment and land development. Land is the biggest-ticket item in Second Life, with Linden Lab selling islands for USD 1,675, plus a USD 295-a-month maintenance charge.

Of course this produces litigation: E.g., in April 2006, Marc Bragg acquired a parcel of land for USD 300 in Second Life. Linden Lab, the operators of Second Life, advised that the land was improperly purchased, took the land away from Bragg, and froze his Second Life account. Bragg sued Linden for unlawfully confiscating his property. Another example of litigation concerns the practice of "gold farming". In May 2007, class action suit filed in the Southern District of Florida against IGE's practice of "gold farming", which means generating

virtual assets in World of Warcraft by using cheap labor in developing countries and then selling the assets on eBay and other industry websites.

JAY E. GILLETTE, Professor, Center for Information and Communication Sciences at Ball State University, USA, outlined some very interesting and relevant points from his own research on

Creative Collaboration for the Information Renaissance:
Weblogs Build Distributed Community

In order to understand the current information renaissance, the team of the Center for Information and Communication Sciences isolated some of the distinguishing characteristics of the European Renaissance, which are: book publishing technology, idealism, scientific methods, naturalism and secularism, fragmentation and nationalism, exploration and discovery, humanism, individualism, and the perspective of a homo faber ('man the maker').

Keywords describing the corresponding distinguishing characteristics of the current information renaissance are: ICT, Knowledge Society, information economy, globalism, universal versus tribal, exploration, discovery and travel, search for synthesis, collaboration, community, and the perspective of a homo sapiens ('human the knower').

The team was then doing research in a distributed collaborative community on how to get people to build communities that work together, distributed in time and space. First research has been done in a proprietary Intranet collaboration platform designed for that purpose. The results of this research were as follows: This platform was very good for privacy and security. It was designed for hierarchical work groups, but it does not seem to build community, and may even impede creativity. The corporate model works as designed, but proprietary Intranet platforms designed for commercial purposes for corporations have a 'tyranny of architecture' problem.

Thus, the team tried another aspect and built a public Internet megablog platform. The findings were that this public Internet does indeed build community. It brings out individual and group creativity, encourages collaboration, but not necessarily project management. However, there are problems, too: It is too public and may cause the paradox of 'writer's inhibition' or 'indiscrete exhibitionism'. This megablog model corresponds to a 'meeting in the town square' and not 'artisans in a studio'.

The architecture of the experimental community megablog (www.cicsworld.org) created by the team is very different from almost every existing commercial offering. Individual weblogs posts on peoples' own webblogs become input to the community megablog. The last post shows up at the top of the megablog and the weblog name goes top of the blogroll. The "game" is to get your own post to the top – and thus, to keep your weblog top. An advantage of this particular community megablog is its 'daily newspaper' effect: People can click on it once and can read the latest posts from all the blogs for the day. If they want more information, they can click on the individual webblogs.

Collaborative Intranets, with the traditional 'command and control' organizational work, have their place and they do help for project management. However, to build distributed collaborative community it is recommended to use Internet community megablogs. Creative ICT should be used to advance today's information renaissance through collaboration and community.

In this new information renaissance, for the first time, the species homo sapiens evolves and comes into its own – as 'human the knower' – we become our true selves at last.

ROBERT BELL, Executive Director of the Intelligent Community Forum (ICF), USA, gave an illuminating speech on

Broadband and Community Collaboration.
Does the Web Strengthen or Weaken Community Involvement?

ICF is a non-profit NGO with the purpose to help communities struggling with the issues of economic development in the globalised broadband economy to get there faster and better.

With local broadband, individuals, schools, governments, institutions and small businesses around the planet have the same level of global access and global competition that big multinational businesses have been facing for the last decade. Today, business is mobile, capital is mobile, and jobs increasingly become mobile – but local communities are not mobile. Local communities everywhere have the same goal: They want to be places where people can raise their children and where those children can, should they which it, stay and raise families of their own. Yet, this becomes increasingly difficult. The ICF helps communities to adapt to that change and to show them by sharing the best practices of successful communities how to get ahead a little bit faster.

These days, a digital world is overlaying a physical world, and this is changing how people socialise, communicate and collaborate. There is a potential for social isolation and exclusion in this new digital world. Corresponding to the Stanford Institute for Quantitative Study of Society, frequent Internet users spend 70 minutes less daily interacting with their family, 25 minute less sleeping and 30 minutes less watching television. Corresponding to UK National Statistics 2000, 16% of Britons 55 years and older use the Internet – compared with the national average of 45%, and 20% of unskilled workers use the Internet – compared with 66% of professional workers. On the other side, there is a potential for broader range of supportive relationships. Corresponding to a Pew Internet & American Life study, 60 million American adults (29%) say that the Internet has played an important or crucial role in helping them deal with at least one major life decision in the past 2 years.

Where digital meets physical, will the web strengthen or weaken community involvement? The challenges are probably clearer than the opportunities. The challenges are that online communities are based on interests, and not on location. Moreover, there is an increased 'reality filtering' through selective access to content. And, the web is leading to a greater concentration of knowledge and power in higher income groups. Opportunities on the other hand are there: 41% of Internet users go online for local merchants; some 35% of users go online for news about local community; 30% go online for information about local government; and 33% of people who use the Internet to connect locally send email to their local organization several times a week.

The ICF runs an annual awards programme, which is a research gathering device but also a means to celebrate communities that do interesting things. Four examples of these communities are: Issy-les-Moulineaux in France, is a very advanced community with 89% of the population using the Internet, compared with the French average of 56% in 2006. They have a very engaged online environment for their community, comprising an interactive city council, a citizen panel and a participative budget-making platform. Moreover, the city even

has created cyber-kindergartens and videoconferencing with children at summer camps. The district Gangnam-gu of Seoul, South Korea, has a government web portal which has 350,000 registered users (out of a population of 547,000). 47% of these users have completed surveys or registered to receive email alerts to issues. Since 1998, 1,500 surveys on budgets, regulations, land use, etc. have been conducted.

East Manchester is an economically depressed district of a vibrant UK city. Its Eastserve community web portal project, launched 2001, evolved into a programme also providing subsidized PCs and connectivity, local ICT centres in the district, and training in schools. As a result, PC ownership increased from 19% to 52% in 2005, when 55% of residents identified Eastserve as beneficial for improved communication with family and community. In Cleveland, Ohio, USA, OneCommunity nonprofit built an ultra-broadband network serving government and institutions and enabling local content. Moreover, the city developed HD videoconferencing connecting schools and clinics, as well as Museum of Art programmes in public libraries.

GIANLUIGI ALBANO[*], **Head of Research, CONSIP S.P.A.**, Italy, [www.consip.it], provided a remarkable insight in the experience of a public procurement agency:

The eMarket Place as an Innovative Electronic Procurement Tool for Public Administration

The EU Council of Ministers stated in its 2000-2010 Strategy to build a Europe based on excellence. The 5 main points of this so-called Lisbon Strategy were: 1) Transform Europe into the "most competitive and dynamic knowledge-based economy in the world, capable of achieving a sustainable economic growth with new and better jobs and greater social cohesion". 2) Prepare the ground for the creation of a digital economy based on knowledge, within the framework of the EU e-Europe Plan and the initiatives of the Information Society. 3) Define a European space for research and innovation in order to make the initiatives of Member States as effective and performing as possible. 4) Create an environment conducive to the start-up and development of innovative enterprises, especially SMEs. 5) Adapt European schooling and training systems to the requirements of knowledge through the offer of learning and professional training opportunities that are adequate to specific requirements, promoting at the same time the development of new skills, especially in information technologies.

Public procurement represents one of the areas with the greatest impact on the achievement of these goals. The development of efficient best practices in the area of procurement services and value-added projects (such as consultancy, technological and project management services) plays a major role in modern organizations. In fact, it guarantees not only the rationalization of public expenditure – by cutting and optimising low added-value activities that free resources to be used elsewhere – but also guarantees the overall modernisation of public administration through the use and support of new technologies.

Another issue is the fallout in terms of public procurement through the simplification and automation of the relationship between suppliers and public administrations. Today, the management of public procurement is strongly influenced by ICT. ICT represent an important tool to rationalize and improve the relationship between suppliers and public authorities, creating a virtuous circle that will allow to free resources to be used in activities of higher value-added and of greater public interest.

eProcurement became a tool for the simplification of public administration provisioning, making purchases simpler, faster, more transparent and convenient. However, 'eProcurement and simplification' does not refer only to the purchasing phase (preparing a tender, going through the auction and signing the contract with the supplier), but to the whole value chain that is connected to the provisioning process, which includes – at the beginning – also the public demand analysis, the standardization of purchase requirements and the analysis of the supply market offer, and – at the end the process – the whole logistics of provisioning, payments and monitoring of supplies. These are all areas in which enormous advantages can be obtained by the use of information technologies and the redesigning of processes based on modern and innovative tools.

With reference to the supplier market, particular attention is placed to SMEs that represent – not only in the Italian economic system, but in the entire EU – a strategic resource in order to guarantee a good level of employment, the development of research activities (in terms of intellectual capital), and a pivot of the entire social system growth.

Public administrations are going through a time of great change, leaning towards efficiency, modernisation and supplying citizens and enterprises with ever better services. The path to follow is the one that has been traced. Public procurement is acquiring ever more importance within the EU. The development of initiatives that highlight the contribution of new technologies entails a significant process simplification and, at the same time, allows for a new and more efficient tool through which the national entitled bodies may monitor public expenditure. Nevertheless, in this effort, purchasing organizations have shown to share many problems with regard to the adoption of new technologies, the innovation introduced in the supply markets and the handling of very complex change management processes. For this reason, co-operation, co-ordination and networking between purchasing organizations are not only useful, but indeed necessary!

* represented Danilo Broggi, Chief Executive Officer, Consip S.p.A., Italy

ALESSANDRO SCIOLARI, Scientific Director of Assoknowledge Confindustria SIT, Italy, outlined with great clarity a new approach to product innovation proposed by a European group, called

European Concept

The European Commission has initiated a number of Technological Platforms on specific issues. "Manufuture" is the name of the TP for manufacturing processes; "European Concept" is the group in charge of product innovation within this platform.

The old approach of product innovation concentrated on changing and modifying existing product features by using creativity. The main focus was on competitors; market analysis was mainly based on the analysis of collective behaviours and observation.

The new approach of product development focuses on user needs – not only explicit needs, but also non-explicit needs (i.e., needs that are not reflected by user behaviour) and indirectly connected needs. Another important aspect is to use new technologies and innovative services in order to identify new modalities to satisfy user expectations. Moreover, market analysis today is based on individual behaviour observation – which does not mean analysing what a specific person does, but analysing all the information and data available about the behaviour of this person (e.g., intelligent data analysis, data mining etc.).

The European Concept group proposes to start with the products that are available in Europe. The first step should be to disassemble the products in three major 'slices': tangible goods, innovative technological services (i.e., services related to the product), and intangible value added features (i.e., all features related to the brand). Then, the next step would be to add value.

In this context, the direct participation of the users is a very helpful tool to understand what are the 'pieces' of value that have to be added. The recommendation given by each individual user can be considered. Direct user participation is also a very useful means for collecting information. The process of disassembling is not an easy process, but a process that requires the capability of using all available information in order to understand what is missing in each of the three slices. The only way to understand which part of the product requires an added value is by knowing exactly the weakest slice of the product.

The European Concept group proposes a short term strategy that concentrates on today's products but that looks into new markets – not necessarily high-end markets, but low-end markets. In the past, Europe has always concentrated on high-end market segments. This new approach allows to focus other important market segments, particularly the low-end segments. However, the idea is not to address the entire value proposition to this new segments, but only parts of the value proposition.

The group proposes to concentrate on the product slices 'innovative technological services' and 'intangible value added features' and to add these slices to the slice 'tangible goods', which, in most cases, is produced in emerging countries. The idea of the European Concept is to sell together with the tangible slice innovative technological services and innovative integrated services that add value to these specific tangible goods. Europe should consider products as an integration of three important slices. Europe is really competitive in some of these slices and should focus on those.

FIORELLO CORTIANA, Senator and Member of the Italian Advisor Committee of Internet Governance and the IGF, Italy, shared some thought-provoking reflections on

Knowledge Sharing

The Internet is not just a new tool that follows the telegraph, the telephone, the radio, or the TV. It represents a completely new system of communication. The interactivity of the Internet makes its difference.

The powerfulness of computation in an interactive Net has generated a new and original system of communication that we could define as a cognitive collective enterprise. The beginning of the knowledge era.

There is an endless sharing and a non material era. In this kind of knowledge economy, the more people exchange the digital products the more they increase it. It is also a new model to generate value.

Moreover, the knowledge worker is also the owner of the cognitive instrument of production. This cognitive collective enterprise versus an old normative, old law, old procedure calls for the representation and the negotiation of new rights and needs.

The Internet is the biggest wide public space in the human history, without borders. However, we have to face at the same time a digital divide and a cultural divide. There is a need for a new paradigm, an epistemology of the complexity, in order to understand this new kind of global system.

Internet it is not naturally free. National laws, international public and private agreements, and technological standards are defining the nature of the Internet. There is also a need for new global citizenship rights, for an Internet Bill of Rights or a Constitution for the Net.

During the upcoming IGF in Rio, a workshop on this issue will be organized by the Dynamic Coalition of the Internet Bill of Rights. The Dynamic Coalition of the Internet Bill of Rights is an informal open group of organizations, companies, governments and individuals that feel the need to work together for the better definition of the rights and duties of the individual users of the Internet.

CARLO AUGUSTO SARTORI, Director of the Department of General Surgery, Castelfranco Veneto, Italy, delivered a captivating presentation on

eLearning and Streaming: Surgery Online

The first laparoscopic operation took place in 1987 in Lyon for the removal of gall-bladder stones. Laparoscopic surgery means to see and operate inside the abdomen without opening the abdominal wall. Seeing inside the abdomen requires, first of all, a camera. Additionally, a source of light, optics and one or more monitors are needed.

The camera in the operating room has been the first revolution, as it allows to carry out minimally invasive surgery. The second revolution has been that eLearning and streaming became possible due to the use of the camera. Live surgery can now be followed by a large number of surgeons, who can learn techniques during the operation itself with the commentary of the operating surgeon.

The storing of the videos of the operations and video streaming helps to spread knowledge about laparoscopic techniques: Surgeons can connect directly to the website in order to watch the operations performed as many times as necessary to learn the operation properly.

The presentation was followed by a live demonstration of eLearning and streaming concerning surgery online: Once connected to the website, the surgeon can chose the step of the operation he/she is interested in; the technical principles of the operation are written in the top right of the screen. The surgeon then sees the operating room and the operation itself.

In traditional surgery, only two surgeons can see the operation. Due to the camera used for laparoscopic surgery, many surgeons from around the world can follow and learn the operation. The surgeon can stop the video whenever he/she wants and can repeat steps of the operation as often as necessary.

Convergent & Mobile Technologies Society Challenges

The **chair** of the session, **KRISTIN PARSLEY ATKINS, Wireless Reach Europe, QUALCOMM INC.**, USA, [www.qualcomm.com], made a beautiful presentation on the endless uses of wireless to improve people's lives in

Wireless Reach – Empowering Communities Worldwide

Qualcomm is a company developing wireless communication products based on advanced technologies such as CDMA, with more than 11000 employees in 51 offices all around the world. Qualcomm took its corporate social responsibility very seriously and developed Wireless Reach in order to bring the benefits of wireless technology into public services worldwide.

The digital divide is up to 84.3% of the world's population which does not have access to the Internet and 67% don't have access to mobile technology. It is important to restrain this gap because a 1% increase in mobile penetration is correlated with an increase in GDP per capita of USD 322 and a 1% increase of Internet penetration will bring up GDP per capita by USD 551.

Mobile technologies are used more and more all over the world due to the affordability and high quality of data and voice services. Wireless Reach has put in place in a very short time about 20 programs in 20 countries in the fields of healthcare, education, entrepreneurship, public safety and environment.

A program with spectacular results took place in Guatemala, a country where education in rural areas has suffered tremendously after the civil war. The government created the "Schools of the Future" project as a way to enhance economic and social development. A partnership between the national and local governments, corporations and NGOs helped connecting 20 schools with 3G high-speed Internet connection. The local communities got very involved, teachers committed to travel to other cities for additional training and a sustainability program has been put in place for the spring of 2008 when the funding will be over. The K-Nect project gave away 250 smart phones to 9th grade students from North Carolina having math problems, phones that helped them to master their math skills and access tutors outside school.

Another initiative is a contest: Wireless Reach BREW Application Funding Program, organized for community-enhancing applications. The winning application helps farmers access market reports, pricing, pesticide information and weather reports and thus make smarter business decisions. The first runner up developed an application to assist in processing and analysing the poultry sales and distribution process to track and combat against avian flu.

The Fisher Friend is a project for public safety, dedicated to fishermen in India, providing and access in their local language to information on market rates and weather report, aiming to keep them safe and make their business thrive. In the field of healthcare, wireless Internet

connectivity helped connect 2 villages on an island in the south of Thailand to the mainland hospital.

In conclusion, for corporations like Qualcomm to get engaged in such programs, there are some criteria to be met by the program: to have strong support from the local partners, to fit into the government's ICT goals, to be self-sustainable and to support the customer which is typically the local operator.

The following Q&A referred to the biggest challenge faced by this kind of programs deployed all over the world. Mrs. Atkins answered that sustainability is a huge problem that needs to be sorted out before the beginning of the program, because funding only lasts for one or two years and mainly finances the infrastructure such as computers, classrooms and Internet connection. Solutions like charging a small fee for after-school use of the computer labs help the project to keep on going but sustainability will become an even bigger challenge as the program will grow.

DAVID LAROSE*, Director of the IT Department, Drancy City Hall, France, gave a presentation on how convergence and mobile technologies improved the quality of life in the

City of Drancy

Drancy is a town on the outskirts of Paris with 65,000 inhabitants, 1300 city workers and a 100 million euros budget managed by the young and brilliant team of the mayor Jean-Christophe Lagarde.

Drancy was the first in France to put new technologies at the service of the city and its citizens by deploying VoIP in 2002. The City Hall uses unified messaging to treat emails and letters from the citizens faster and more efficiently. Hence, they managed to reduce the answer delay from 1 month to 2 weeks and hope to bring it down to 7 days. Videoconferencing, although still the professionals' exclusive gadget in France, is used in Drancy to connect different offices of the local government and prevent citizens from going to the main building of the City Hall in order to obtain information or talk to the right persons. Needless to say that using such new technologies saves time and money both for the citizen and for the community and its leaders.

Furthermore, Drancy's project for 2008 - 2009 is a Visio Call Center through 3G and Internet that would help especially working people to contact the City Hall, make their demands and solve their problems without having to move around. Internet and intranet are a way to save time and resources and share information. They are even more put at use today, the age of Web 2.0 when the role of local governments changes from sending information to mainly receiving it from the citizens expressing their needs.

Convergence for the cities is another issue on Drancy's agenda. Virtualization is used to connect to other cities and aggregate the infrastructure and the IT because it is more scalable and secure, power-saving and good for the environment. Connecting the entire city to fiber network will help deploying many applications: GPS in the town hall cars, CCTV on the road for the police cars (Drancy already has 200 cameras installed), free phone calls for city workers and citizens using a WiFi connection. Such applications will bring a more efficient public services and important savings for the municipality and the people.

* represented Jean-Christophe Lagarde, Mayor of Drancy and Member of French Parliament, City of Drancy, France

The Q&A referred to the challenges encountered in the deployment of fiber networks and WiFi access. M. Larose explained that one problem is the money necessary to dig up the street for the fiber network and FTTH and state regulation is another challenge because in France, a city may operate such networks only when no offer is available.

SIMONE TASSO, Hospital Medical Director, AZIENDA ULSS 8 ASOLO & **LUCA FAGAN, Engineer AZIENDA ULSS 8 ASOLO**, Italy, [www.ulssasolo.ven.it], presented an innovative and beneficial project

Individual Clinical Portability of the ULSS 8 Asolo Medical Network

The Individual Clinical Portability created an informational system for the patients' clinical history accessible to patients, doctors and public health managers. It is a web application in 4 languages, accessible through the ULSS Asolo portal and connected to a more complex medical information system. It is not invasive on local applications and has a very low cost because it is placed in the upper layer of the information system.

The main components are the documents repository and the documents registry. Clinical applications register documents in the repository through a wrapper. The registry contains all the index of all published documents. The access gateway allows the user to consult the stored documents following certain criteria. Considering the nature of the medical information, an architecture based on large monolithic databases is non adequate for such an application. The document register is a set of archives coming from different sources within the hospital (i.e. laboratory, radiology, cardiology) including digital documents. A knowledge management system classifies documents on their own semantic and seeks for keywords, concepts and interest categories providing the final result as a clinical folder.

In practice, by accessing the homepage of ULSS Asolo and with the help of a password, the patient may enter his personal homepage where search is possible on the criteria of date, description, international code, branch of medicine or type of event. For a certain period of time a list of events and their short description appears and the patient may choose one event to find out more details. International codes for diseases and treatments are used so that the information will be useful all around the world and documents are available on pdf format. Ambulatory descriptive reports are also available. By producing reports on sequences of data, the system helps the practitioner save an important amount of time. Even more, by using the Individual Clinical Portability of ULSS Asolo, patients may request consultations with doctors all over the world and temporary delegations allow other doctors to watch the procedure.

Following the presentation, the Q&A referred to the challenges of such an ambitious program and how they have been surpassed. M. Tasso answered that beside the challenge of bringing together different fields of expertise, there were also the clinician's perspective and the patient's. This application may also provide valuable information for a public health doctor statistics, comparisons and cross-checks are possible, for example, to evaluate the efficiency of a drug.

OTTO GIES, Vice President, Corporate Business Development, EADS, France, [www.eads.com], made a captivating presentation on the useful applications of convergence for

Mobility and Location Based Services

EADS is not only the parent company of Airbus, Eurocopter or EADS Astrium, but also a leader in innovation management and for this reason, convergence is of major interest.

In today's world there is an increasing number of "mobile people" and it is estimated that in 15 years, 50% of the world's population will live in 40 mega cities creating congestion problems. On the other hand, people will need the same technologies in their professional and personal lives and as they will give up carrying around information on hardware, they will need up-to-date content online available on their mobile devices. Several technologies are available to supply this need for efficiency and speed: wireless, broadband, real-time video streaming, geolocation and data mining.

When addressing mobility, the first issue is to get the position from GPS, then make a virtual representation of the world and only afterwards useful location based services can be provided to the end user. As correct positioning is crucial, satellites are used by GPS and soon Galileo for outdoors and pseudolites, GSM, WiFi, etc. for indoors. The real world modeling is a 3D vectorised map constantly updated by aerial imagery, cartographic data bases and geocoded information. This information is communicated through a standardized interface to the fixed or mobile devices of the user and many applications have been developed in accordance with the needs they respond to.

The Intelligent Route Planning and Navigation is an example of how convergence increases the quality of the service. Users may update online the existing maps. The police, traffic jam sensors, induction loops, floating car models, net floating car data provide information on the traffic fluidity and help improve TMC. Such applications allow also track and tracing and geo-fencing of a buddy list.

Another important application is the Flight Navigation System Demonstrator device that allows pilots to "see" outside in all weather conditions by providing accurate positioning information of the aircraft and a true representation of the real world surrounding it. It provides a priceless assistance to the pilot, helps prevent accidents and by using them on the aprons, it enhances security on airports too.

Fleet management could be improved with such applications. GPS and telecom means provide update for the map database servers and application servers provide relevant information to the terminals. Such technologies may be used also for container security that could be equipped with a black box that informs on its health status. Home custody is an important step to the socialization of offenders and mobile and location based services could help police work on this matter. Even for agriculture, precious data on the status of the crops and meteorological data can be provided.

The Q&A raised the question of the middlemen between EADS and the end user. M. Gies answered that EADS which is the technology provider collaborates with content providers such as local authorities, electricity providers and also with the service providers that sign the contract with the final consumer.

MICHÈLE THONNET, e-Health Department, Ministry of Health, France, made a very interesting presentation on the ICT, health policy in France and

How Does France Cope With eHealth

The French health system has to deal with an aging population, a global expenditure per capita increasing faster than GDP and 1.7 million jobs in the healthcare sector. The system is very complicated, bringing together a multitude of actors: health insurance, professionals and hospitals with a large autonomy, which does not ease government's coordination. Although very well quoted by the WHO, important social and geographical inequalities persist in the French health system. ICT can help address these issues as well as the raising costs and other inefficiencies.

National and local governments want to rationalize the system for a healthier population and obtain a better quality of care and control costs. To achieve this goal, since 1996, 3 projects have been deployed: the SESAM Vitale provided a secure infrastructure that simplified the refunding of health expenses and was very innovative for that time; the electronic health patient record was a corner-stone in the management of doctor-patient relationship; and last but not least was the public health issue and how to manage the consequences of the availability of the information to the public.

These 3 projects had 4 main objectives. Te first one was to facilitate the continuity of the health care by putting together medical and personal information and through telemedicine programs. The second objective is access to knowledge such as up-to-date information and evidence based medicine information. The third one is to manage to pilot the system by better knowing the reasons for recourse and evaluate the expenditure and the fourth one was to simplify the administrative aspects and the quicker refund for the patients.

Following this strategy, more than 55 million smart cards have been handed out to the citizens and the important investments in infrastructure serve to the more general goal of knowing where the patient is and what his needs are. Under these circumstances, an important issue was to earn the confidence of the population in this new device. To solve this problem, two major laws have been adopted. In 2002 a law stated that citizens and patients own their own data and the professionals may not access or use it without consent. A second law in 2004 set strict security policy and mechanisms and a mandatory labellisation of the storage places.

To access the information stored in the system, professionals need a Health Professional Card and the agreement of the patient. But the most interesting part is the application provided by this system which is the Personal Electronic Health Record. This does not replace the medical records but is an effective way to manage the continuity of health care with all the guarantees of privacy.

The role of the national and local government is to support the development of the consensus, to encourage experiments, to build up the legislative framework and to develop incentives, if necessary. For the progress of the system, some issues still need to be debated: the level of confidentiality, the identification of the patient and his control over the access to data, the responsibilities of the parties as well as technical options. Deployment to regional and local levels has its challenges because of the discrepancies between them that may interfere with the interoperability of the entire system. On the other hand, the focus should not be on the fast hanging technology but on the transversal aspect of the personal health record. One last important aspect is the mobility of the patient that needs to be

sustained and so the system must be compliant with others at European and international level. Interoperability at this level imposes the use of international standards, the anticipation of global changes and the avoidance of proprietary products.

The Q&A referred to the proprietary products and international standards in the health system. Michèle Thonnet answered that proprietary products concern mainly technologies and numerous directives are being issued in this respect by different authorities. For health there are no directives. So, in this field there is a voluntary collaboration with other countries worldwide not to harmonize the systems but to be able to interoperate. International standards are the most common way to produce this interoperability. At European level a very new Competitiveness and Innovation Framework Program will support the collaboration between governments and health authorities based on the existing legislation, existing projects and international standards.

CHRIS VEIN, Executive Director of the Department of Telecommunications and Information Services, Senior Technology Advisor for the City and County of San Francisco, USA, gave an impressive presentation on how ICT can engage with the environmental cause in

Connecting Cities for Innovation - Green ICT

All the ICT applications developed to improve people's lives need machines which represent, according to Gartner, 2% of the global carbon dioxide emissions, at the same level as aviation. The main polluters are PCs, monitors and servers. From the environmental point of view this represents a major problem and the city and county of San Francisco have decided to do something about it. Their Green ICT initiative is far from achieving its goals, but a framework has been put in place and efforts are being made.

In 2005, San Francisco hosted a meeting of worldwide mayors to discuss environmental issues and makes efforts since 1995 to cut the greenhouse gas emission by 20%. Among other things, measurements are being made to determine the power consumed and the emissions of each IT device.

San Francisco's "Green" ICT wants to achieve: an effective governance of technology, financial stewardship, innovative and reliable operations and organizational health. Beside the political aspects, the financial tactics include the same one as in other cities (i.e. 311 projects, virtualization) and they will have a larger impact on how government is provided to the citizens. Public's reaction to these projects surpassed all expectations and more access had to be provided. The innovative and sustainable operations are focused on purchases, use and disposal. Thus, the departments are encouraged to use all-in-1 printers and the local networks for this service. More and more e-services are offered online and communities online are created to prevent resources from being used. For ICT disposal program includes virtual warehouses as a way to share resources.

One of the largest challenges is "green" ICT is changing the behavior of the city workers and citizens in order to achieve a healthy environment and a culture of innovation. Concretely, for its green initiative, San Francisco will concentrate on green data centers, server consolidation, standardization, optimization and virtualization.

San Francisco being an environmental leader, the Q&A following the presentation referred to the efforts made to replicate this example of commitment in other cities of the world. Chris Vein answered that San Francisco, Seoul and Amsterdam are working with the Clinton Global Initiative on the energy conservation program. Partnerships with MIT and several companies will bring up projects that will be implemented and be a showcase of what and how could be done but most importantly of what may go wrong and what can be learnt from it.

DAVID WOOD, Councillor, Newcastle upon Tyne, UK, made a remarkable presentation on the use of ICT for transport in

The National Concessionary Bus Travel Scheme, Smartcards, ITSO in the North East of England

Currently in England all the bus operators are privately owned companies. Each travel concessionary authority issues its own pass with a unique format and valid only for local travel. In April 2008, a new national travel scheme will be introduced for people over 60 and the disabled enabling them to travel free on buses throughout England. All eligible people will receive a standardized national smartcard, a format developed by the Department for Transport and the transport authorities.

This scheme aims to simplify the use both for the customers and the travel operators. For this reason, implementing this scheme at a national level presents a major challenge: creating interoperability between regions and different operators. An alternative solution might have been the use of bank cards, but individual companies with individual cards would have driven customers to distraction and designing their own scheme would have been too costly for the bus operators. Hence, the UK Government sponsored an open specification for smartcards called ITSO – Integrated Transport Smartcard Organisation available to any equipment supplier, operator or local authority.

The benefits of the smartcard system are numerous. They will reduce fraud, rogue cards can be turned off, and customers get faster boarding. It has the potential to make life easier for the customer especially if combined with other services such as library access. Operators will upgrade their equipments by installing electronic ticket machines, partly funded by the central government. For the people benefiting of this system, local authorities must reimburse bus operators for the journeys originating in their area. So, a major benefit of the smartcards is that they will facilitate the calculation of these costs for the central and local government and produce savings in administration charges. 11 million people are concerned about this system and the next step would be including children and students in the scheme. This full smart ticketing scheme will allow local authorities to know who travels where and thus change bus routes according to people's needs.

A full acceptance of the ITSO is needed and due to the importance of the data provided by such a system, the technology uplift is encouraged by the government. Even more, this new scheme may be a catalyst for further changes by expanding it to other uses: light rail, metro, libraries and social amenities.

The Q&A following the presentation raised the question of how other users will be convinced to adopt the smartcard. David Wood answered that the public has already been persuaded to use these cards and they are now at the stage of implementing it. So, local authorities will have to get on board and make the best use of it.

LASSE BERNTZEN, Vestfold University College, Faculty of Social Science, Tønsberg, Norway, made a very interesting presentation of the

Digital Planning Dialogue

The Digital Planning Dialogue is a state-of-the-art e-government application financed by the Norwegian Research Council and bringing together 12 municipalities, the Vestfold University College and the Norwegian Mapping and Cadastre Authority. The goal of the project is to use ICT to improve the zoning plans, a very complex process that includes the interchange of huge amount of documents between all stakeholders. By avoiding the print of all these documents, the project may be considered a green initiative.

Technically, the Geographic Information System (GIS) and the Case handling and filing system have been integrated. The GIS is used as interface with the consumer and it inquires the filing system when needed because the later stores all data, locations, comments, etc. The user interface provides a very interesting timeline explaining the current stage of the zoning plan. All information on the timeline is imported by the GIS from the filing system and presented to the user. The program gives access to all the documents related to the zoning plan and comments may be sent to the different stakeholders.

The Digital Planning Dialogue makes the planning process more transparent, facilitates the participation of the stakeholders and improves administrative efficiency. It is also a perfect example of an e-government application with an e-democracy dimension.

21st Century Global Integration

The **chair** of the session, **PETER BRUCK, General Manager of Austrian Research Centers GmbH**, Austria, welcomed the attendees. As chairman of the board of directors of the World Summit Award, he stressed the importance of promoting cultural diversity in the context of global integration.

The World Summit Award aims at bridging the digital divide and closing the content gap in a global Information Society by focusing on quality contents and facilitating at the same time linguistic and cultural diversity. The content gap and the digital divide are both aspects of the development of a global Information Society. The network of the 168 countries participating in the World Summit Award leads towards co-operation for developing new media for a better world in terms of educating people in the different aspects of using ICT for creative contents.

The session's **moderator**, **HUGO KERSCHOT, Managing Partner of INDIGOV**, Belgium, welcomed the participants and introduced the panellists. He emphasized that this session is dedicated to the future of innovation and the race to integrate innovation on our society, and then conducted the session with great incentive.

SASCHA HASELMAYER, Director & Co-Founder of Interlace-Invent / Living Labs Europe, Spain, presented an outstanding joint initiative spanning 17 European city regions:

Living Labs Europe

Living labs are urban laboratories for new mobile and ICT applications with a particular focus on using the need for economic competitiveness and economic promotion as a basic driver for mobile solution development.

There is a basic paradigm shift taking place in moving from a traditional telecom industry driven value chain model towards a value network driven model of developing services and new technologies. Apart from the technological and infrastructural challenges, this represents a particular challenge for the management capacity to manage cross-sectoral networks and new forms of public-private partnerships to deliver this solutions. The most dynamic actors amongst often very entrepreneurial companies are not national governments, but local governments that face directly global challenges of competitiveness and that need to provide better services to their citizens, often with limited resources.

Living Labs Europe is a network of 17 European cities, where the importance of place, the local identity and the urban environment are used as a particular driver for new services. The network is an open platform for collaboration, allowing to benchmark achievements and possibilities among this community. But most importantly, and this has emerged as a critical success factor, Living Labs Europe is trying to overcome the problem of local orientation and procurement. The intention is to make the 17 cities a collaborator and to create among the 17 million end-users in those cities new target groups for new services. Living Labs Europe connects 500 public and private stakeholders and mobilises them towards a new concept of urban innovation.

Living Labs Europe has developed a 'mobile readiness index', published in 2006, benchmarking 21 European city regions in their capacity to innovate in mobile services. The index does not only take into account indicators such as broadband accessibility or infrastructures, but also mobile fluency and the user interest, as well as the innovative climate which goes beyond the technology patenting and also looks at the capacity of introducing killer applications. Another important factor is the managing capacity – the ability to benchmark performance, to manage complex public-private partnerships, and the ability to come up with cross-sectoral strategies for mobile industries and services.

The most competitive city region in Europe was Tallinn, Estonia, due to the particular balance between technological competence, a very active user demand, the willingness of the public leaders to engage in new forms of public-private partnerships, and a strong user focus. The third most competitive city was Vaestervik, Sweden – a city with 37,000 inhabitants which lost about 1,000 jobs only 3 years ago. The Mayor of Vaestervik realised that he has to radically rethink his municipality's role in the global context and started to restructure the entire operation of the municipality to a more decentralised choice driven model, which is now been adopted by the City of Stockholm and is serving also as a model for the Swedish Government.

The Aho group reported that the Lisbon Agenda is well anchored in the verbal communication in Europe, but very little 'doing' is taking place. However, those cities that 'do' are achieving results and become very competitive. There are some critical barriers: The local orientation of procurement destroys the market for services and the transactions between regions. The lack of organizational capacity to set-up and manage new forms of public-private partnerships generally breaks down at the local level where procurement is localised. And, finally, there is a financing issue because there is no killer application on the market that can serve as the piloting solution that others might model to.

PAOLO ZOCCHI, Senior Adviser of the Minister of Regions and Local Authorities, Italy, provided a brilliant presentation of how local good practices can become the base for a model on the national level.

eGovernment 2.0

Italy is currently implementing its federal reform. In 2001, the Italian constitution had been changed towards a more federal system, with more decentralisation and more influence for the regions. Corresponding to the constitution, every citizen has the right to have a basic service in terms of ICTs and eGovernment. For example, broadband has been established as a kind of universal service – not as a universal service from a legal point of view, but a policy has been implemented, in order to provide every citizen with a basic level of broadband access.

In such a young and not yet complete federal system, the risk is that regions, counties and municipalities do want they want and that the good practices implemented on the local levels remain isolated. During the past years, many local good practices and experiences have been implemented – but not within a common framework. Therefore, the intention is to make these local experiences part of a bigger framework

The goal is to transform the 'candidate observation' of best practice in a method based on active involvement and widespread models. Thus, the central government can assure a basic level of service for all the citizens, starting from the local experience and transforming

them into countrywide models. Often, best practices represent a strength of a territory with borders, and in many cases this practice will not become a widespread model. The goal is to transform the best practice culture into a representative model culture. This means, no more general purpose dissemination, no more redistribution of money, no more unilateral policies – but focus on specific innovative areas, targeted investment and co-operation among the different levels of government.

The programme put in place to reach this goal is called Elisa. A budget of EUR 135 million for three years is made available for co-financing local and regional authorities. The call is open to focused ICT projects, addressing selected aspects of the following areas of innovation: logistics and local public transportation, measuring the quality of services, integrated digital management of local public services (especially cadastre and fiscal services), integration, and empowerment of labour information systems. Funding is provided for these priority areas in order to transform all the good practices on the local levels in a model that can be used on a national level.

CHIA-SHENG CHANG, Commissioner, Department of Information Technology, Taipei City Government, Taiwan, provided a fascinating presentation of

Taipei's Experience

In 1999, Taipei City launched its strategic plan to become an intelligent community. With this goal in mind, the Cybercity Plan was initiated. This plan was successfully realized and, with a population coverage rate of 90 percent, Taipei became the number one wireless city in the world. Besides this mobile network, the city also established a broadband network and Taipei is today one of the top three cities concerning broadband deployment.

Under worldwide assessment, Taipei won three awards in 2006: In June 2006, Taipei City won the Intelligent Community Awards 2006 given by the Intelligent Community Forum. Also in June 2006, JiWire, the public WiFi company, announced that Taipei City has the world's largest public WiFi network. Finally, in December 2006, the Wireless Internet Institute, selected Taipei as the winner of the eGovernment Applications of W2i Wireless Communities Best Practices Awards.

Once the broadband infrastructure was established, integration and innovation issues become the city's next major concern. Taipei increased its service level by providing better services and content to its citizens. A new strategic plan, called UI-Taipei 2010 (Ubiquitous Intelligent Taipei in 2010), has been initiated. The plan focused on the following three areas: eGovernment, with the objective to enhance government efficiency to offer high quality municipal services; eCommunities, to encourage residents participation for the development of a more vital city and friendlier communities; and eLiving, with the objective to improve lifestyle and environment to make the city more competitive.

The 6 goals of UI Taipei 2010 are to provide more efficient and convenient services, to increase public safety, to enable versatile eLearning, to built an interactive community, and to boost industry growth.

The City of Taipei provides one-stop service via different channels: A 1999 citizen call centre, similar to the 311 call centre service in the U.S., drastically increased citizens' satisfaction. Furthermore, Taipei is currently establishing a single service counter at district offices

allowing to obtain any information at any service counter. Taipei also offers a household messenger service and an integrated portal website.

The intelligent health care home services project provides health care services to senior citizens: If senior citizens need help, they can push a button on a small device. Once the call centre receives the request, it sends a volunteer to handle the demand if necessary.

STEVEN B. ADLER, Program Director, IBM Data Governance Solutions, IBM CORPORATION, USA, [www.ibm.com], challenged the audience with though-provoking reflections about

Competition, Innovation and Governance

Today, people are working at the office, at home, on the road, and on vacations. Why they are working so much? Why the nature of work itself is changing so much to a point at which it is no longer really necessary to go into an office and to work with colleagues in a social environment? The reason is that we are in the midst of the most globally competitive environment that companies have ever seen. People are always competing and that is putting huge stress on employees and business partners. And this is changing the very nature of work, because people are under constant competition today. It is changing monopolistic enterprises, governments, and it is having a profound effect on business.

In this environment in which people are constantly competing, innovation is a real premium – but where does it come from? Does it come from the national leaders, the executives, managers or directors? It comes form the customers and from the employees. And this requires a new way of thinking and working that companies are slowly adapting to: Listing to their customers and capturing little kernels of ideas and transforming them into products and revenue.

Canonical is a small company based in the UK. They produce the Linux desktop distribution Ubunto. They did not create Ubunto, rather they create an environment called launchpad (launchpad.net). Launchpad is an interactive global community of end users and customers who are innovating by creating this operating system. In this space, there is a group of consumers who are acting as producers, end users who are acting as creators. In traditional software, there are people who create software and people who consume it. But in the open source environment, there are both in one community.

We did not really reach global integration yet, but we are certainly seeing global competition. The example of a recent board meeting for a university was given: Some of the board members were senior executives at banks and when discussing how to help this new university build up its student body and about curriculum, someone proposed to have a personal risk management. Very quickly the discussion got down to risk management and the recent loan scandal in the U.S. where some organizations have lost a significant amount of money. During the discussions a great frustration of the banks became obvious. They were subject to huge institutional losses because of decisions made of their shore. While people are competing with each other, the economies are not connecting on a policy level.

Globalisation is changing work as we know it, there is huge competitive pressure on organizations, people are forced to innovate and there are new sources of innovation that are challenging every company to look at their customers, business partners, and employees in a different way. However, there are still some fundamental governance challenges ahead.

BROR SALMELIN, Adviser to the Director ICT addressing Societal Challenges, DG Information Society & Media of the European Commission, gave a very distinguished presentation on

Service Science and Innovation

In the context of the Knowledge Society, Europe spoke a lot about the Lisboan Agenda – which was important, because at that moment of time, the EC was really stressing the importance of knowledge as a wealth generator. But the Knowledge Society is not driven by technology innovation; innovation is multidisciplinary – driven by system and societal and technical innovation. There is the need to focus on value creation rather than on cost cutting. Cost cutting comes from the traditional industrial paradigms.

Looking at innovation as such, there are proven innovation dynamics, such as in Silicon Valley where connectivity is extremely important. The connectivity between the people and the organizations is key to foster the very needed societal innovation. There is a need to move from a closed innovation concept to something which is capitalising on these spill over effects and highlights the role of individuals and organizations as parts of the networks. Another important issue are the creative commons – a societal capital people can build more value on. Those enterprises, organizations or institutions who can capitalise on creative commons will be the winners of the future.

Why services and open innovation and networking? Software and related services play a key role in the Information Society and the economy in general: Services account for around 70% of the economic activity in the EU, and this figure is increasing with high value and knowledge intense services. On the other hand, the service innovation success rate is rather low. There is a need for a much stronger user centric view on service innovation by moving towards open innovation. Open innovation as a process increases the social and intellectual capital of a community as part of the services development. For that, the adequate network environment, such as living labs or other pan-European networks, is required.

eServices are best suited for open innovation environments in real world settings. The need for high dynamics and multidisciplinarity is much higher for eServices than for traditional services. When putting all the elements together, the living lab expertise and the open innovation expertise, the methodology and the technologies, and especially the people – the citizens as the driver for innovation, than we get something that can be put together in a melting pot and where we can get ideas from. Policy can create the framework and the conditions for innovation, but it can not decide where innovation happens.

Living Labs and networks should be realized at least on a pan-European level and preferably on a global level. There is plenty of material coming from technical and media convergence, but there are very few people speaking about user centric service convergence.

We need the courage to do the societal experience to jump into a multidisciplinary experimental environment with the '4 p', public private and people partnership, where openness in the innovation environment is a critical issue and where user centricity is the key.

The first commentator of the session, **EDITH CRESSON, Former Prime Minister, President Fondation Ecole de la Deuxième Chance**, France, commented the presentation of Paolo Zocchi, who illustrated how local governments in Italy can provide their experience and good practices to the Italian national government. Edith Cresson explained that the situation in France is quite different: France has a very centralized administration and it is extremely difficult for the regions, which have some very interesting experiences, to have them taken into account by the French central government.

It is important that the national governments get inspired by what is done on the local level. However, this might be difficult and the example of France is not unique. Despite a recent growth in decentralisation in France, it is difficult to make good practices carried out by local governments a source of inspiration for the national government – due to the traditionally centralised administration, but also because the political party affiliation is not always the same at the national government and the local ones, which increases the difficulty of getting an agreement. There has been some progress, but it will take some time until the Italian example can be realized in France.

The second commentator, **PIERRE LAFFITTE, Senator & President of the Foundation Sophia Antipolis**, France, highlighted that small groups are becoming more and more important in the field of ICT and innovation: “Small is beautiful”. This is true for the public sector, where local governments have a more important role in the context of innovative practices than regional or national governments. But, it is also true for the private sector: It is not the big companies as a whole but small teams and start-ups and individuals which have a prominent role in the development of ICT. And it is also true in the context of financing: It is not the big money and huge funds and not even the venture capital, but the ‘business angels’ providing money from the very beginning that have the most important role. The dynamics of the 21st century are coming from small groups and individuals. It is important to put in place a political strategy in order to try to foster the participation of individuals in the innovation process.

The **chair and moderator** of this plenary session, **PHIL NOBLE, President and Founder of PoliticsOnline,** USA, welcomed the audience and opened the second day of the Global Forum with an outstanding presentation on

Civic Sector ICT: 2.0 Integration & Innovation

The overview of how the Internet and new technologies are being used in the U.S. presidential primary focussed on four new trends and three predictions:

The first trend is that there is a new metrics of success in politics. It used to be that the measures where how much money have been raised, a candidate's standing in the polls, endorsements from other politicians and the reaction of the press. However, with the raise of online politics, there is a whole new set of measures that get added to theses and that are just as important: E.g., how much traffic the candidate gets to his/her website; how many people volunteer online for the candidate's campaign; how many people sign up for the candidate's emails; how many friends the candidate has in MySpace; how often the candidate's name is searched in Google; or how often the person is listed on blogs. All of these are new measures of political success.

The second trend is that the online world is moving from simply providing information to being a place of action. As an example, the website of Hillary Clinton proposes eight things that people can do to support her campaign. It is based on actions that people can do online at any time and wherever they want to – for instance, raising money from friends online, planning events or starting discussion groups. There is lots of online activities that where never a part of the campaign but that are now an integral part of moving from information to action.

The third trend is the raise of personal media or "voter generated content". During the 2000 presidential election, there was a cartoon presented by JibJab, which has made fun of both John Kerry and George Bush. This video clip was seen by more people in the two month before the election than went to the Kerry and Bush sides combined, times three. The cartoon was created by two brothers in their basement for USD1,500.

Moreover, the two most widely viewed messages of the current campaign so far were not created by the campaigners: The first one is a video called "Obama Girl", the second one is an anti-Hillary Clinton "Big Brother" ad. These widely viewed messages of the campaigns are not coming from the politicians but from the voters about the politicians!

The forth trend is that the activity of the campaigns is moving to commercial and non-news sites. Some people call this the "2.0 elections" with sites like YouTube, Facebook, Flickr, Wikipedia etc having more traffic about the elections than the election sites of the candidates in the parties.

Considering these trends, a first prediction could be that, in some way, millions of people outside of the U.S. will find a way to participate in the elections. Obviously, they cannot vote

but there is various ways that they can participate online by giving money, petitions, writing letter, contacting people etc. This has never been possible before – but now it is!

The second prediction concerns the idea of having people communicate across languages, and across cultures around political issues. Such an experiment has been realised together with the BBC within the "global conversion project". The project is done in 32 languages with 75 media partners in 180 countries.

In this context, a prediction could be that Barack Obama will win. Part of the reason why he could win is the way he has used the Internet – very much in the same way that John F. Kennedy defined the television age of politics. To some extend, Obama redefines politics in the media age.

However, the third prediction should be that nothing is predictable and that the changes will be much bigger and much faster than foreseen and that the impact will be much longer lasting.

As the first speaker of the session, **TODD S. RAMSEY, General Manager for Global Government and Education, IBM CORPORATION**, USA, [www.ibm.com], provided a brilliant keynote address on

Continuing the eGovernment Journey – Why Governments Need to Innovate and Transform?

There are a series of mega-trends that are outside the control of any government whether it be local or national. Such global issues, having profound impact on the ability to be successful in terms of economic development, job creation etc., are:

Changing demographics, such as a declining population or young people moving to the cities, are putting a lot of pressure on governments. Economic globalisation is an opportunity, not necessarily a threat, and governments have to learn how to take advantage of it. While a large part of the population likes doing things online, there is also an older population that wants to do things face to face. People have very different views of how they need to be served and governments need to deal with these constituent expectations. Natural resources is another big issue and the climate change has moved to the top of the agenda. It requires a lot of investment and lots of change in order to be able to address this global challenge. Moreover, governments are facing ideological conflicts, which is not just war, but how to deal with immigrants. And even within regions there is a lot of issues that need to be dealt with.

These are all issues that governments are going to have to deal with as they go forward. And when projecting that down into government context, the first challenge governments are confronted with is the budget crisis with its fiscal constraints and responsibilities. But there are further community challenges, such as safety and security challenges, the challenge to maintain social services commitments and to improve the global competitiveness.

Governments are not going to be able in the near future to continue do things very slow and conservatively like they did traditionally. In order to remain competitive in a world economy, they have to take much broader action than in the past. The situation resembles to a "perfect storm", in a sense that people are aware of all these issues, but particularly politically they do

not feel like they need to take action today. But if they wait until that storm is there, it is almost too late to react to it.

The "government innovation journey" framework shall help governments to identify their current position and to plan a path forward. The innovation journey around the Internet is described as waves and experience has shown that most governments need to go through each of these waves. They can go through them a lot faster if their know where they are going and where they need to get through – but there seems to be a need to go through it.

The first wave ("online government") is an experimental wave with governments providing information, search functionalities, and e-mail online. Wave two ("interactive government") is organising the work of governments a little bit more by using intelligent infrastructure to enable online transactions and the creation of portals. However, the significance of wave one and wave two is that they do not change the way the government operates – governments just create a new way of accessing the public.

There is a big change from wave two to wave three ("integrated government") because now governments go from the government's service being the centre to the citizen being the centre. Wave three is customer-centric and characterized by enterprise integration and transformation, the provision of valued service to customers, shared services, multi-channel access and exchange. Wave four ("extended government") is extending this beyond government. A lot of non-government agencies are now being brought into the process in order to leverage the network and to enhance the value for all stakeholders. Wave four is about optimising the value chain much like corporations have done. In wave five ("collaborative government") governments are able to prepare for and respond to unexpected situations and to spontaneously tune service delivery to specific groups or needs. In order to be successful in the future, governments are going to need to be flexible and adaptable with processes responding to a wide range of individual needs and situations.

Most governments are currently stuck in wave two, trying to get to wave three. A good way to evaluate the position of governments regarding their eGovernment journey is to look at the utilisation of the services online: if it is 10% to 20%, it means they are in wave 2; in wave three, it is generally 40% to 50% and governments are beginning to do integration; and if governments really get integrated, they can move it up to 70% or 80%.

Three dimensions of change are required: the technological dimension, the process dimensions and the culture change dimension. Governments generally have the technology but just employing new technology without changing the process is not going to change the output or the way that service is delivered. Likewise, governments that try to change a process without integrating additional or new information in a different sort of way are not likely to get a different outcome in terms of the service they provide.

In order to be successful governments need to think about technology and process coming together and focussed on a particular problem. For governments that get into wave three, four and five it is critically important to think about culture change – and this is the biggest single failure that governments have when they try to transform and the reason why some others are successful.

To conclude, critical success factors for innovation in communities are: a proactive and committed senior leadership; customer-centric, outcome-based objectives; effective governance models (intra, inter- and extra-organizational); a focused, deliberate use of innovation, integration and collaboration; and a dynamic and integrated infrastructure.

ADRIANO ALESSANDRINI, Mayor of Segrate, Italy, and **Regional Vice-Chair of the Global Cities Dialogue**, delivered an excellent presentation of a very distinguished initiative

Mayors of the World for a Global Cities Dialogue
on the Information Society

The GCD – Global Cities Dialogue, is an open association for all cities willing to cooperate to realize an Information Society for All, in which every citizen can profit of the benefits brought by the new information and communication technologies in terms of social inclusion and democratic participation.

The fight against the digital divide is the key term here, as it indicates the main objective of the network: to promote access to new technologies by everybody and to reduce the gap between people who have access to the tools and services of the Information Society and those who are excluded from the opportunities offered by the Information Society.

The Global Cities Dialogue was initiated on 23 November 1999 in Helsinki, Finland, by eleven cities, which signed the Helsinki Declaration "Mayors of the World for a Global Cities Dialogue on the Information Society". The Helsinki Declaration is a kind of basic document, embodying the philosophy of the GCD-network and indicating its objectives. But first of all, it is a political document, expressing the will of the member cities to cooperate for the development of a fair, democratic and socially inclusive Information Society.

The Global Cities Dialogue is a non-profit-making association which is not aiming at generating profits and whose activities have an international dimension.
All activities and joint initiatives promoted within the network are financed completely by the member cities or by the participating cities themselves. Therefore, it is easy to understand that the political will – the political involvement of each city – is essential for the network's life. At the working level, each city has to nominate a "sherpa", that is an operative responsible, working close to the Mayor and supporting the participation of the Mayor in official events, e.g., in the General Assembly Meeting taking place once a year. This person is very important, as he/she is the interface between the member cities and the GCD-secretariat.

European cities are well represented within GCD, but the network is expanding, especially in Latin America and Africa. Today, the Global Cities Dialogue has 194 members, thereof 102 in the European Union, 29 in Latin America, 21 in Europe, 18 in Africa, 15 in Asia and Oceania, and 9 in North America.

The City of Segrate joined the GCD in 2004. The city became member of the GCD Steering Committee in 2005, and was elected GCD Vice President for Europe in 2006. Segrate joined GCD because the city strongly shares the network's goals and strategies, such as the focus on the Information Society as a driver to improve the quality of life of the citizens as well as the will to share experiences, everywhere in the world.

The aim is to fight against the digital divide on both the local and the international level. The City of Segrate is running several projects to face both sides of the problem: the access to broadband connection and the capability to use it.

With great insight and understanding, **MEL PROUDFOOT, Senior Director EMEA Public Sector, ORACLE CORPORATION**, UK, [www.oracle.com], reflected the question of

How Converging Technologies Transform Government

The EU eGovernment website focuses on the 5 priority issues: social inclusion; efficiency and effectiveness (especially by the exchange of good practice); high impact services; eParticipation; and some of the key enablers (e.g., the eID). The concept of citizen centricity has some implications which are truly profound: Security, multi-platform as a way to referring to multiple channels, citizens' choice being a key aspect of citizen centricity, integration and many more.

When looking at the core of transformation of government, there is the move to focus on the delivery of benefit. That benefit is usually realised by looking at an end-to-end process and measuring before, after and continuously. The implication is that it is an information driven process. It is not just a question of measuring before and after but continuously during the overall process, because as governments achieve transformations the nature of the consumption of services changes as well. The measurement has to be build into the process because it is not a one of task but a continuous task.

Generally speaking, if looking at the effectiveness issue and at how much public money get spent on "focussed around the benefit delivery" and not on the underlying technology, it gets to be about the use of a common interoperable infrastructure.

One of the key capabilities for the public sector is the importance of formal evaluation, i.e., information security evaluation of software is critical. It is not just a question of delivering the functionality but ensuring that that functionality delivers "what it is says on the tin", as defined by an independent government approved evaluation. Another key capability is the ability to put specific public sector functionality in a standard product, whether it is the accounting rules for one country or the specific functionality for the police courts or prisons. Other key capabilities are mobile technologies, scaleability and high availability, spatial technologies, sensor technologies, identity management, case management and master data.

"Identity management" and "master data" are absolute enablers to achieve the objective of citizens' choice via multi-channel service access and the ability of multiple government organizations to integrate. Identity assurance is key in a multi-channel environment and allows citizen to decide over which channel they want to consume a specific service. In this context, the important channel is not always the same and certainly not standard: there is not one single channel but a mix of channels. Citizens' choice is also service related: the channel selected for a particular service to a large extend depends on the level of identity assurance that can be achieved on the remote channel.

Master data are crucial to have a consistent view of the constituent of the service consumer. This does not require a centralised approach for having a single centralised view but leads to the need to integrate various different government systems. However, this is not a question only for the technologists but also a question of what the legal base and the personal data protection allows in that country.

Another issue is "fit for government use": Given what was said about a common infrastructure and the need to integrate capabilities, the issue for the public sector is open standards. The public sector does not want to be restricted to a single vendor. Security evaluations are critical and as a matter of fact, vendors have to comply with the government

process. It is not just having the technology – it is having it fit for government use. It is allowing the government to implement its policy, not the vendor's architecture – and the flexibility to include solutions from multiple vendors in a way that is going to allow governments to achieve its transformation.

ZOLTÁN SOMODI, Secretary of State for IT, Ministry of Communications and Information Technology, Romania, gave an excellent and very rich overview on the most recent

ICT Achievements in Romania

With an estimated market value of EUR 4,800 million the Romanian ICT market remains small in comparison to its neighbouring countries. The figures for the ICT markets of Hungary or the Czech Republic are twice as high, with a much lower population. However, the ICT market is the fastest growing sector in the Romanian economy and features a high growth potential.

As regards the Romanian electronic communications market, the fixed telephony penetration rate stagnates between 20-25%. The rate of penetration for mobile communication is growing very fast and will reach 100% at the end of this year. Internet access is growing fast but penetration is still low (21-25%) – nevertheless, there is a constant growth in broadband connection to the Internet. Cable penetration was high at the end of the nineties but is now stagnating at about 20%. Mobile telephony penetration is growing very fast. In 2005 there were only 2 operators, in 2006 a third operator started its services. As a result, the annual penetration rate increased by 31%.

With a growth rate of 90,4% between June 2006 and June 2007, broadband Internet connection is the leading segment of market growth. The penetration rate of 10.5% is still very low compared to other European states but it is expected to reach 50% in 2011. However, there exist wide disparities between urban and rural areas in terms of access to new communication services and the Romanian government has launched a number of pilots and projects to provide access in rural areas. Such projects include the deployment of broadband over Powerlines, which is considered as a viable and cheap solution to supply access in rural areas, but also wireless broadband access technologies. The "leave your mark on the net" campaign is dedicated to increase public awareness and the provision of free hotspots in public areas.

The largest project, both in terms of budget and impact, is the "Knowledge Based Economy Project". This project is financed by the World Bank together with the Romanian government with a total of USD 69.4 million It is coordinated by the Rumanian Ministry of Communications and Information Technologies in cooperation with the Ministry of Education, the Ministry of Administration and Interior Affairs, the Ministry of Culture, and the National Agency for SMEs.

The project is dedicated to rural areas and aims at setting up broadband infrastructure in 250 Rumanian villages. In each village four 4 strategic places will be connected (public administrations, schools, public library, public access points). The project is based on a three-layer approach, with the first being infrastructure and consisting in the providing broadband Internet, local networks, PCs and some peripherals. The second layer is training: The project will provide basic IT training for teachers, employees of public administrations, entrepreneurs and the general public, as well as special training seminars for agricultural workers. The third layer concerns the services provided in these rural areas: eGovernment,

eBusiness, eLearning and grants. Currently the project addresses 18% of total rural population, but the intention is to use the European Structural Funds to replicate the project in other areas of the country.

LUIGI PERISSICH*, Director General, Confindustria Servizi Innovativi e Tecnologici, Italy, outlined very interesting thoughts about

The Impact of Convergence, Innovation and Knowledge on Economic Development

In the last two decades, all advanced countries have transformed from a manufacturing economy into a service economy. In the U.S., services generate nearly 80% of the internal income. In Europe, two thirds of the GDP is generated by services. The competitiveness of a productive system resides in the gap between the speed required by the economy to transform and the time needed by the enterprises to adapt their business models.

Liberalization, innovation and internationalisation are key factors of a competitive strategy for growth. Liberalization and the diffusion of innovative services are closely connected: the European Commission evaluates 1.8% of the GDP and 2.5 million jobs as the effect of liberalization in the service industry.

Investments in technologies, human capital and organization are crucial for a knowledge based society to succeed. The integration of services in the manufacturing sector (and the virtual aggregation of SMEs to create more competitive business models) is fundamental for a successful transition from old to new manufacturing and to preserve jobs in the EU. Internationalisation and strategic positioning on international markets is the only way to remain competitive and collect the benefits of globalisation. The challenge, particularly for Italy, but also for the EU as a whole, is to enable SMEs to successfully compete in this new environment.

New technologies and innovative services are fundamental for public administrations to reduce costs and to improve the quality of their services. They have to change their way of working in order to become more accessible to the citizens and to provide better services. By becoming more efficient, they will at the same time help companies to become more competitive due to reduced public charges.

Knowledge is a fundamental component of innovative processes and the ability of companies and countries to attract the best is becoming vital in the today's market place. In this context, it is important to mention that there is a need for new rules to regulate the labour market within this new economy. It has to be much more dynamic and flexible and cannot be regulated with the schemes developed for manufacturing. An important step in this context is the current debate on "flex-security" promoted by the European Commission.

Public policies are important to foster innovation through public spending in R&D, innovation and training and the EU-Members States need to embrace and promote innovation with more conviction and more resources in order to reach the targets set by the Lisbon agenda.

Platform integration, the diffusion of portable music and video, digital TV and TV over the Internet are basic elements of a convergence that will enlarge the market for digital contents and services. Such convergence will require adequate information and communication

governance. During the recent years, the eContent market has experienced an enormous growth, although its growth potential is far from being fully exploited. Up to now the network infrastructure has been the topic governing the debates, while contents have been treated as a sort of commodity. Nowadays, however, content is becoming the engine of change that largely influences the speed and effectiveness of the innovation process.

The world is facing very interesting and challenging times where the technological discontinuity is creating enormous opportunities for those who understand and adapt to changes very quickly, and where the winners of today may loose their leadership tomorrow and create opportunities for the newcomers. This is true for companies but also for countries and regions and the success of India and China in recent years best illustrates this new trend.

* represented Alberto Tripi, President, Confindustria Servizi Innovativi e Tecnologici, Italy

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The first question of the **Q&A** section referred to the missing technological background of most politicians and the resulting difficulty for ICT vendors and eGovernment solution providers to explain their technology to politicians. In his answer, Todd Ramsey suggested to start the process with defining the outcome to achieve, in the sense of a political statement of what policy is trying to deliver to the citizens. In the next step, technology can figure out a way to help to solve the problem. It is not important for the politicians to understand the technology but to understand that the technology can help them if they can define where they want to go.

Mel Proudfood added the importance for politicians to really understand the needs of their constituents in order to be able to describe the objectives. There is a huge step change between the constituents of the past and the constituents of the future and an important question is “how to determine excellence in government services”. In the past, people have used commercial measurements, e.g., those similar to the ones used to measure bank services (availability 24 hours a day, 7 days a week, at anytime and from any place). But in the future it won’t be banks that set the standards for government services – it will be iTunes, MySpace, etc. Finally, government access is all about the availability of technology.

Zoltán Somodi stressed that in Romania, mobile technology is currently the one with the highest penetration rate. Although it is still predominantly used for voice services, the number of data and broadband Internet services will increase in the near future. To convince politicians, he also stressed the necessity to translate technology issues in specific benefits from the citizens point of view: e.g., what happens when implementing a specific technology, what will change after its implementation, or will its implementation lead to financial savings?

As Adriano Alessandrini pointed out, a minister of transport should not necessarily be a driver and politicians do not have to be technological experts. However, they need to understand that technology can help them doing their work and learning from each other and the exchange of experience is of great importance in this context.

The next question addressed the fact that most of the new technologies like Facebook or MySpace are disrupting traditional political structures and processes and how to explain the effects of these technologies to traditional politicians. Phil Noble stressed that the hardest thing to change is culture. However, the culture is changing very fast with the generational

change of people who are born with the expectation of MySpace, Facebook and YouTube.

There will be a new type of political leader, who understands the technology and uses it as naturally as older politicians have used television. This will happen in different speeds in different countries but it will happen very fast.

The following question referred to situations where politicians might set expectations at a level that either their staff or the industry may not be able to deliver. Todd Ramsey confirmed that this happens quite often. One big problem is that politicians make broad statements but they are not willing to be involved in the implementation. A leader who is going to successfully transform public services has to be actively and proactively involved in that process over the time. More and more politicians are understanding this and there are examples of very successful change driven by politicians in a number of countries around the world.

Mel Proudfood added that it is relevant to understand the context – first of all, in terms of measurement and benchmarking. In many cases these days, the way that transformations are being targeted are not on the basis of little information but massive information. The pre-transformation benchmark is getting more and more sophisticated. E.g., in one country there are over 280 discrete measurements on a local authority – ranging from whether they have a strategic plan for ads to how many seconds does it take them to answer the phone. The policy is not being formed in a vacuum – it is being formed in the light of whatever increasing detailed benchmarks. And in order to answer the important question “did we achieve the benefit”, measurement is pervasive during the whole process. Another important aspect is high level political support, which is critical for transformation. A politician does not have to understand all the technical details or even all of the details of the benchmarking or improvement measurement – but he has to be the manager of the broad direction.

Media & Content Issues in the New Convergent Environment

The **moderator** of the session, **GIORGIO PRISTER, Senior Strategy Consultant for Items International**, Italy, welcomed the audience and introduced the panellists. He opened the session with some inspiring words about media and content issues in the new convergent environment:

The overarching theme of the following presentations can be described as "get any content you want – anywhere, at any place and any time". The session is about convergence of media content, broadcasters, telecommunication providers and technology providers. It will address questions like how telecom companies are becoming value-added multimedia service providers; how broadcasters are implementing multi-platform Web 2.0 services; how digital TV is going to be deployed in Italy and the U.S.; and how technology supports convergence, illustrated by the examples of mobile phones and high definition TV.

Is convergence real or futuristic? A couple of month ago, in Paris the first "European Festival of the Four Screens" took place. It was one festival dedicated cinema, television, the Internet and mobile phones. The message is that convergence is becoming real and that there is business for everyone: for the content provider, for the technology provider, as well as for the broadcaster.

As **chair** of this session, **KATHRYN C. BROWN, Senior Vice President for Public Policy Development & International Government Relations, VERIZON COMMUNICATIONS**, USA, [www.verizon.com], presented with great competence, commitment and clarity Verizon's views on the

Issues & Opportunities in this New Converged World

The world has changed. Technology, fair competition, forward-looking policies, and most important, consumer demand have all changed the ICT industry, and transformed the way people live, learn and play. The blending together of the communications, computer and entertainment industries has spawned a highly competitive, consumer focused world, where customers are in charge.

In this converged world, companies like Verizon are no longer mere telephone companies – but communications/entertainment/Internet providers. That means that not only can these companies too provide content and offer value-added services to the consumer, but they are competing against other networks – such as cable or wireless – that seek to offer voice or data. This also raises content-related issues, e.g., advertising, screening, child safety, that they really did not have to deal with when simply delivering communications from one location to another. This also means that it is important to ensure that the policy frameworks synch up with this rapidly growing converged world.

Consumers in America and around the world are benefiting from the competition and innovation made possible by new technologies. They have strong interest in converged services, they have a wide range of communications options available, and they have been eager to embrace them. Today, a typical family uses some or all of a growing array of digital

devices: HDTVs, laptops, game-players, mobile phones, BlackBerries. By 2012, it is predicted that there will be 50 million “smart” devices in use in the U.S. that will have wireless capabilities built right in. Different business models exist among industry players, yet all will end up in the same place, e.g., triple- and quadruple-play in the U.S. That is why it is important for industry leaders to take a leadership role in ensuring that the policymakers get the framework right.

Technological convergence means the merging of formerly distinct delivery technologies through which content reaches the consumer: radio, conventional broadcasting, satellite, cable, fibre optics, wireless, Internet. Content convergence means the presentation of information on different platforms and in different ways. Consumers are able to use any platform they choose. Examples of convergence are cell phones that provide videos, games and voice; computers that provide voice, text and videos. Together technologic and content convergence have led to the creation of a new ICT industry: telephone companies are providing Internet services, content providers are merging with Internet providers. All of this is changing business models amongst companies that were in silos before. This new ICT industry requires new policy approaches that recognize the changed functions of broadcasting and telecommunications in a digital era.

Verizon has spent the last decade creating a powerful delivery system to deliver the benefits of converged communications, information and entertainment services to our customers: FiOS is a large scale project targeting at linking more than 18 million homes by 2010 with FTTH. FiOS provides TV, Internet access and telephone service. The FiOS technology provides reliable, at-home health monitoring, video-conferencing and real-time, multi-player gaming, full-motion video. FiOS TV provides quality and choice in programming, makes broadband available to consumers, and enables accessibility. Due to the high consumer demand, Verizon intends to spend nearly USD 23 billion between 2004 and 2010 to build out this network.

Key challenge is to have a public policy framework that fosters innovation and multiple business models, all driven by consumers. At a time like this, the government’s role is necessarily limited, lest its intervention have unintended consequences. Objectives of public policy may include: Facilitating market entry and create room for competing business models; refraining from outdated regulatory models; avoiding inappropriate imposition of legacy circuit-switched and/or media regulations on Internet-based services; facilitating cross-border and multiple-market services; recognizing the value of commercial arrangements and industry self-regulation to address consumer issues.

U.S. policymakers have taken a number of important steps along these lines. Recent examples include: Minimizing market entry barriers: The FCC supported to speed up the video franchising process to stimulate more competition in the converged video services marketplace. A flexible regulatory environment: In the highly competitive broadband market, the FCC has recognized the need for a regulatory environment that encourages investment in broadband services and fiber facilities without overly burdensome regulations.

FABIO IAIONE, Country Manager Italy for QUALCOMM Europe, [www.qualcomm.com], delivered a very interesting talk by sharing his valuable insights and experiences in dealing with convergence from the mobile industry's perspective:

Enabling Convergence

The wireless industry faces different paths of convergence, such as convergence with consumer electronics or with networks and services, but the common issue of all those paths is the take up of the 3G services. With more than 484 million 3G subscribers, the wireless network represents the main enabler of the new wireless data services. In Europe, where UMTS and HSDPA is the mainstream, 24 of the 27 EU Member Sates have already launched wireless broadband networks based on HSDPA capabilities delivering up to 3.6 Mbit/s. Next year, a speed-throughput up to 7.2 Mbit/s will be made available all across Europe.

Convergence is about convergence of networks, devices and ubiquitous services – but what does convergence mean for the end user? It basically means satisfying certain needs, such as providing a seamless experience on different networks and technologies, access to multiple function on one single device (e.g., voice services, Internet, mobile, gaming, streaming content), access to a personal service profile, anywhere, anytime and for different technology platforms as well as access to different services and application and to different networks and platforms ensuring interoperability and integration.

The market is moving beyond traditional voice services. New technologies are impacting and reconfiguring even traditional voice services. An example is the launch of the Skype phone last week in Europe. This is enabling very new business models with more opportunities for carrier revenue growth. The period of flat rate offerings is ending. However, a significant growth of bandwidth is key to ensure such evolution. It is already possible to deliver up to 20 Mbit/s; 4G will make available more than 50 Mbit/s. There is a strong technology roadmap that will drive innovation to the wireless.

Another area of convergence that just started to be exploited is the convergence with the broadcasting world. There are different broadcasting technologies on the market: DVB-H, MediaFLO, DMB, and ISDBT. Mobile TV remains a very important opportunity in terms of revenues and in terms of subscribers for the entire value chain.

Qualcomm strongly believes in mobile broadcasting and, together with its U.S. partners, has launched the mobile TV service based on MediaFLO technology. MediaFLO technology allows twice the capacity in terms of TV channels available compared to any other mobile broadcasting technology and delivers an improved user experience (e.g., faster channel switching, higher interactivity).

Innovation more and more comes from the mobile environment and from the evolution of the mobile technologies. Mobile devices allow to target the mass market. Every year, about 1 billion mobile devices are sold worldwide – compared to 18 million Laptops. This also explains why Internet players like Skype or Google have identified as critical to extend their reach to the mobile world.

The excellent talk of **JANE E. MAGO, Senior Vice President & General Counsel, NATIONAL ASSOCIATION OF BROADCASTERS – NAB**, USA, [www.nab.org], focused on a very practical problem the U.S. is currently dealing with:

Getting U.S. Consumers Ready For February 17, 2009

The U.S. government set February 17, 2009, as the date that all full power TV stations must cease analogue broadcasting. DTV brings many benefits for the consumer: crystal-clear TV pictures, better sound quality, more services and channels. Moreover, turning off analogue television also means to be able to free up spectrum that can be taken for other uses, including interoperable public safety services or broadband services.

But such transition from analogue to digital broadcasting also brings the challenge of ensuring that consumers are fully prepared for the switch. It represents a particular challenge the U.S., since the U.S. is making the switch on a nationwide and simultaneous basis. The DTV transition affects every American household that receives over-the-air services – that is roughly 69 million TV sets that could potentially lose service on February 17.

In order to make sure that no one will loose access to broadcast television when the transition occurs because they do not know about it, NAB is going to utilize the full power and scope of broadcast television to educate the citizens. Each company, station and market will view the effort with from the TV consumers point of view. It is important to particularly focus on those who are most affected by the transition. They come from diverse underserved segments of the population: senior citizens, minority and rural populations, and the economically disadvantaged.

It is vital that no American is left unprepared when the switch occurs. Thus, NAB has prepared a DTV transition campaign. A lot of research and surveys have been realized in order to find out as much as possible about the American over-the-air television viewers and to develop effective messages to encourage them to take the necessary steps to be ready for the transition. Furthermore, NAB helped to organize a DTV transition coalition, which now has more than 180 businesses, trade associations and member organizations. These organizations will help to transmit the message to their constituents.

The NAB is also actively engaged in media outreach in order to keep the news of the transition on people's minds. As a matter of course, there is also a role for government: The government has established the transition day and is involved in the education. It has also established a programme of subsidizing converter boxes so that the analogue televisions will be available to every household. That way, those televisions will be able to reach the digital signal even when the analogue transmission ceases.

The goal is to generate as much consumer awareness and understanding of the DTV transition as possible. Speakers are going all across the country and talk to local chambers of commerce, church and community groups and the plan is to call for more than 8.000 speaking engagements from now until the transition day. Moreover, two television shaped trucks are crossing the entire county and spreading the DTV messages. It is a public and private effort. The government and industry are working together to make sure that the transmission goes smoothly.

Convergence is something important and the next generation is talking about different ways of getting information. But it is also important not to dismiss the value of local broadcasting and some of the traditional ways that people do get information. Thus, great efforts are made in the U.S. to ensure that citizens continue to have access to that medium.

ANDREA AMBROGETTI, Director of Institutional Relationship at Mediaset & President of Consortium Sardinia Digital, Italy, provided a remarkable insight in Italy's

Transition from Analogue to Digital TV: A Revolution for All

Television is the most diffused media in today's society, but it is also the last one entering the digital world. This year, for the very first time in Europe, the diffusion of digital television is equal to the one of analogue television. This is the result of an impressive increase in DTT take-up in the biggest European countries. Every year, DTT increased by 20-30% and in the UK, France and in Italy, DTT has become the main digital platform. This year, DTT will exceed the diffusion of analogue TV and within the next 3 years, DTT will become the most important digital platform in Europe. In five years, with the end of analogue TV, DTT will be the new universal platform.

With a penetration rate of 20% and nearly 6 million terrestrial digital receivers, there is a very good adoption of DTT in Italy. Due to a recent law, which requires a DTT tuner in every TV device, Italy will soon reach the penetration rate of the UK. However, Italy's way to Digital TV is characterised by as many strong points as weak points:

An important strength in the transition towards DTV in Italy, is the strong impulse coming from successive regional switch-offs: In March 2008, the region of Sardinia will be first region to finish the analogue switch-off. The next regions to undergo analogue switch-off will be regions of Valle d'Aosta in October 2008, and the region of Piedmont in March 2009. These regional analogue switch-off affects about 3 million Italians in the next 18 months.

Another strong point is the large diffusion of "intelligent" DTT receivers. Nearly 90% of the digital receivers are MHP enabled – an issue that represents a great difference between Italy and other European countries. It is therefore possible not only to diffuse more channels in top quality, but also new services, representing new opportunities for both broadcasters and citizens.

The Italian "pay-per-view model" represents another strength in this phase of digital transition: Though the digital terrestrial decoder and rechargeable pre-paid cards, people pay only what they want to see – without the need to subscribe. With 2 million users in only 1,5 years, this approach has been a large success.

One weakness in Italy's digital transition is an institutional situation with few certainties: The final switch-off date has been postponed from 2006 to 2008, and now to 2012. This continuous postponement of the switch-off date creates insecurities in the market – for operators, investors and users.

The offer of free DTT channels represents a further weak point: It is still not strong enough and gathers in average only 3% of audience – despite a 20% of DTT penetration. This is far from being enough. Consequently, there is also only few advertising investment. A main challenge for broadcasters is the multiplication of channels. Italy already passed from about 10 national analogue channels to 30 digital channels. Broadcasters will have to take the

occasion offered by new technologies to create new services; e.g., new interactive services enabled by DTT.

DTT changes television for the users: It is not only about more channels with top quality but in particular a different use of TV. As an example, the EPG (Electronic Programme Guide) will probably replace the traditional remote control. It represents a different way to chose the channels but also to access a series of very new and interactive services.

MATTEO MAGGIORE, Head of EU and International Policy, BBC, Belgium, give a brilliant sense of the thinking of a broadcaster in facing the convergent media world:

The BBC and Convergence. Broadcasting to Empowered Users

Convergence affects a transfer of power away from those who have it today and used to have it even more in the past – service providers, regulators – to users and audiences. Many broadcasters for a long time treated the emergence of new media as a complement to TV and radio programming. As this did not work, broadcasters then started treating the networked media like a proper medium in its own right and started developing content and services "native" to each new medium. This was working better but, today the trend is moving somewhere where "new" networked media and "old" broadcast media are exercising very strong reciprocal, transformative influence. New forms of content are emerging and the distinction between tool and content or service is blurred: Google is both content provider and tools provider; Wikipedia is both technology and resource. The distinction between service provider and user is also blurred, since consumers are producing content.

TV remains by far the main leisure time occupation, together with radio (over 3 hours a day). But whilst this data remains constant overall, it is changing rapidly in relation to the young people. 16-24 year olds lead the general trend toward less TV viewing. They watch substantially less television than older people and their viewing is declining at a faster rate, down by over one and a half hours, to 18 hours and 18 minutes per week, over the past four years. More than 70% of 16 to 24 year olds have used social networking websites. 37% of 18 – 24 year olds have contributed material online. One in five of 18-24 year olds have their own weblog or webpage.

However, this does not mean that broadcast type content is less attractive. Over the past few years, television viewing declined, but online access became the choice way of following traditional content like news for a soaring number of users – 4 times as many between 2001 and 2005 in the case of general election in the UK. The role of user generated content grows with use of the Internet, transforming the traditional one-way relationship between broadcaster and audience into very fast two way traffic.

The appetite for rich content grows even on new media. What people do with the new media is often access rich content – they access content that is often broadcast content. Obviously, this does not mean that the digital networked media are simply the continuation of broadcasting by other means. People use the Internet, mobile or fixed, for a number of things that have nothing to do with media content. But the interchange influences the development of both TV, radio and publishing on one side, and of the networked universe on the other. This is what matters for a strategic approach to mapping the future of broadcasting. At the same time, the fastest growing digital platform in the UK is Digital Terrestrial, which has just overtaken satellite.

We are at the beginning of a new wave heralding a non-linear, more participatory world: The first wave of the digital revolution has brought an explosion in choice – multi-channel TV, interactivity, proliferation of new platforms. This has seen relatively modest change in user behaviour. This is now changing – the shift from Web1.0 to Web 2.0 coincides with a quantum leap in terms of behaviour.

Broadcasters must continue to channel as much as possible of their funding into producing content of the highest quality. However, "delivering" services and getting the content to the audience is becoming an increasingly complex notion and that complexity leads to the BBC's new key strategic priorities, which are: Find, Play, and Share:

"Find": A non-linear world means choice and control sits with the audience. It is important to ensure the audience can easily find the content, and then that it can access it, i.e., getting search-functions and metadata strategies right. "Play": Enabling audiences to view BBC programmes on-demand delivers high public value. Increasingly people want to engage with and explore content at their own pace and convenience, not just at time of broadcast. "Share" is about the blurring of boundaries between provider and user of media services. Users participate in drama development, in news making, in interactive programmes and also in creative functions. It is important to meet this demand whilst retaining credit for doing so and developing new ways for the audience to engage with the BBC and each other.

This not only means making the content available on different platforms, but also in different formats, on-demand and with different partners. Examples of how BBC transferred these demands into innovative solutions are the recent deal with YouTube, the BBC Radio Player – enabling people to choose content by channel or by genre or by keyword, and the BBC iPlayer – a web-based service designed to allow licence fee payers more choice in how they watch our programmes.

GIOVANNI RIDOLFI, Technological Strategies Multimedia Engineering Manager at RAI, Italy, elucidated with great perspicacity and clarity

Towards HDTV and Beyond ...

TV is a long-standing continuously improving technology. It started in Berlin during the Olympic Games with a 180-line electronic system, then evolved with BBC in 1937 towards a 450 line system, in 1949 the NTSC standard (525 lines) has been developed in the U.S., in 1963 PAL (625 lines) has been introduced in Europe, and today HDTV transmissions use up to around 1,000 lines. HDTV doubles the spatial resolution; uses a wide format of 16/9 that allows a more cinematographic view; provides rich audio with multi-channel Dolby Surround experience and a much clearer and stable image. But, HDTV requires high bandwidth and new equipments.

More than 20 years ago, RAI pioneered HDTV production with "Arlecchino" (1983) and "Giulia and Giulia" (1986). Since than, RAI continued tests and demonstrations using HDTV system, in order to become in 2006, during the Turin Olympic Winter Games, the first broadcaster worldwide to transmit HDTV and Mobile TV combined on one single digital terrestrial channel.

The benefits of HDTV are – from the broadcaster's point if view – the possibility to offer a brand new viewing experience to its audience; from the producer's point of view to produce more valuable programmes and to enlarge the market; from the consumer's point of view, an

increased viewing pleasure; and from the manufacturer's point of view the opportunities coming along with an innovating technology and new equipments. In 2007, the number of digital and HDTV-ready TV sets sold in Italy exceeds the number of sold analogue TV sets.

HDTV requires changes in the production facilities. RAI's strategy is to realize a scheduled replacement of the equipment in studio facilities in order to migrate from SD to HD. New standards in compression (MPEG4-AVC) and the new standard for coding (DVB-T2) transmission will soon allow HDTV services on DTT. RAI's Research Center has developed core elements of DVB-S2 and DVB-T2 standards. Moreover, RAI announced the project to launch a High Definition channel in 2009

People change their computers or mobile phones very fast, but they are not used to change their TV sets very often – in average every 10 years, which is a very long time when talking about technology. Standards are fixed but technology evolves and even in the expected lifetime of a TV set it is possible that significant changes in coding and compression may occur. In order to anticipate future developments in terms of future proofing, the consumer side needs connectivity to future external decoders (e.g., HDMI); flexible and upgradeable conditional access systems; and extensible software capabilities, such as over-the-air upgrading or common interface cards. The broadcaster side needs backward compatibility of existing standards; no legacy of running receivers; and spectrum compatibility.

In spring 2006, the Japanese broadcaster NHK presented in Las Vegas the future standards for HDTV, which is Ultra HDTV, displaying 16 times the number of pixels than standard HD.

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The concluding **Q&A** part of the session addressed the question of when WebTV is expected to exceed the market share of traditional TV. As Kathryn Brown replied, the FiOS TV platform currently looks much more like traditional cable television but at the same time has IPTV capabilities. While this medium changes and the whole notion of WebTV and IPTV is becoming alive, it is all about which wires are going to the home.

Andrea Ambrogetti stressed that in Europe, TV broadcasting is first of all over-the-air transmission and most people receive TV only over-the-air. DTT probably represents the right way to substitute the universal TV platform. IPTV and WebTV do not play a very important role yet; this will be the challenge of the next years.

Jane Mago emphasized that U.S. broadcasters are embracing the notion of many platforms for the delivery of content. They want to be available through the various different forms of content delivery, but other forms of delivery, including over-the-air, will be continued. WebTV will be part of the ways people get content. The user wants to be able to be the chooser. The user want to be able to be the one who decides how he/she is going to receive the content.

Matteo Maggiore added that WebTV will probably never make over-to-air broadcasting redundant. Consumers are adopting a patchwork approach to get content and the today's consumer takes for granted that access to content will be possible on all platforms and at all times. However, each platform has its specificities, and there is a clear indication that especially young people are very versatile and capable of taking the best out of each platform for its own specific potential. But all platforms will continue to play a role.

Kathy Brown brought up the example of the very popular TV series “Desperate Housewives” that is now offered online in the U.S. and is released in both platforms at the same time. Not only people enjoy seeing it in HD-quality in their living rooms but also on their PC and more and more on their mobile Laptop. Certain of these programmes are now being formatted differently to address a new audience of people watching TV on their mobile phone.

Fabio Iaione added that in the end the customer will choose services and not technologies. It is important to enable the service provider to make available the right network and the right platform to deliver a specific service. Some peer-to-peer contents will continue to be delivered through high speed networks; in other cases it will be more convenient for the service provider to use broadcasting networks. It is up to the technology provider and the service provider to chose the right network. It is also important to make sure, especially in the context of the current discussions on DVB-H versus other broadcasting technologies, that there is a market flexibility in understanding the right technology without mandating any specific technology or any specific standard for a specific service.

The next question referred to the danger of censorship through monopolistic telecom structures impeding access to content and to the Internet. The example of Mexico was given, where the monopolistic control by two telecom operators keeps the citizens away from high speed Internet access by charging twice or three times the tariffs of the rest of the world. In her answer, Kathy Brown referred to the importance of having multiple platforms and multiple distribution channels. Given the number of cable providers and the amount of content and the diversity of thoughts distributed in the U.S., it is hard to think that there is any bottleneck on resources and distribution channels. There are hundreds of channels from different content providers – including the traditional channels but also all kinds channels addressing specific communities.

Matteo Maggiore agreed that a multiplicity of networks for the same platform enables a thriving environment leading to innovation with multiple choice. However, broadcasters in the UK do not own any kind of distribution network. The ability of the users to reach the content depends on the broadcasters’ ability to negotiate access.

Another question referred to the efforts broadcasters spend on working on the different formats of content. Jane Mago confirmed that broadcasters in the U.S. are trying to figure out ways of changing the nature of their products. The basic product is the one coming over the air, but it might be necessary to adapt to each different format and different ideas, e.g., to have a short version of a show for the mobile TV system.

The closing remark of the Q&A section came from a content creator developing very costly high-end 3D content. The person’s comment addressed the difficulty of bringing high-end educational content to economically disadvantaged people. He suggested to use the same model for educational content that is used for entertainment content and to subsidize the content by advertisements.

At the end of this last plenary session, **MARIO PO’, Executive Director at the Healthcare Institution Azienda ULSS n 8 di Asolo**, and winner of the WSA Award 2007, Italy, [www.ulssasolo.ven.it], thanked all the participants for coming to Venice for the Global Forum 2007. A special thank you was given to Items International and the staff from Asolo. The Global Forum was a lively and successful conference and the very special nature of the City of Venice provided the suitable framework for such an event, from a scientific, a creative and a technological point of view. Mario Po’ expressed his hope that the Global Forum will return to Venice sometime.

How Converging Technologies Transform Government

The **chair** of the session, **ANDY SMITH, Senior Director for Public Services at Oracle EMEA, ORACLE CORPORATION**, UK, [www.oracle.com], opened the session with very striking and interesting reflections on the choices and challenges that the public sector is facing:

Current and Future State of eGovernment

There are two major potentially competing demands coming from the citizens: Citizens are demanding and expecting ever increasing improvements in the standards and the quality of public services. They are looking at what is being delivered by the public sector and they are contrasting that – not always favourably – to what is offered by the private sector. At the same time that these citizens are demanding ever better public services, they are not showing any great desire to pay for those services. Actually, citizens want things both ways: they want better services, but they do not want to pay for them through higher taxes. Meeting these potentially competing demands gives a huge challenge to the public sector .

While the real pressure is on cutting or not raising taxes, the easy choice for public sector organizations is looking on ways cutting front-line service provision, i.e., cutting services. But this is not what citizens want: they expect public services to improve. Thus, public sector organizations need to look increasingly for ways of improving those services whilst driving out the costs of the way these services are delivered. They have to make sure that the tax payers' money is spent on the services themselves and not on the administration of these services.

Citizen centric services is an important issue in the context of better services as it puts the citizen at the centre of the services being delivered. Services should be designed and delivered to meet their needs and not designed and delivered in a way that just suits the organization that is doing the delivering. Citizens are also looking at the private sector for examples. When it comes to online services in particular, they expect a comparable experience in dealing with government (e.g., 24 x 7 availability, multi-channel service delivery, rationalisation of websites, reducing avoidable or duplicated contacts).

Joined-up government has been at the centre of discussions for many years, but citizens are still in the frustrating position where they find themselves dealing with multiple government organizations and often having to provide the same information many times over – particularly when they undergo changes in their live, such as marriage or the birth of a child.

What government organizations are striving to do, is to find out ways that they can free up the tax payers' money in order to spend this money on services and not on their administration. When looking on the best way of doing this, there seem to be two or three main areas to drive out costs: One of those is around procurement. Public sector organizations, whether they are local governments or central government department, are large organizations that spend huge amounts of money with the private sector. If looking at

the size of these budgets, making small percentage savings can free up a lot of money that can be better used on better services or on keeping taxes down.

When driving out cost from public procurement, two different angles have to be considered: One is using the enormous purchasing power that governments have to buy products and services at a better price. The other one is simplifying and improving internal processes in order to achieve efficiency gains within the public government organisation. However, process improvement goes beyond procurement. Choosing industry standard processes, which are a sort of benchmark against the best that organizations can provide, can be a key way of helping organizations drive out costs. Shared services is another issue the public sector is increasingly looking to as a way to drive out process costs; but also flexible working and the possibility of remote working in order to decrease public sector cost for assets and buildings.

The session's **moderator**, **ALAN R. SHARK, Executive Director of the Public Technology Institute – PTI**, USA, further set the stage by providing a visionary and captivating presentation on current and future trends:

From Informative to Participatory eGovernment

PTI is a national, member-supported non-profit institute. As the only technology organization created by and for cities and counties, PTI works with a core network of leading local government officials. Through partnerships with industry, federal agencies and other governmental organizations, PTI shares the results of its activities and the expertise of its members with the broader audience of the more than 30,000 U.S. cities and counties.

The "person of the year" of the January edition of the Time magazine for the first time was represented by a mirror image showing the word "you" and a subtitle saying that the public really are the beneficiaries of the new information age.

Governments can help eGovernment by increasing efficiency and letting people better interact with their government at all levels. There are three models: 1) The first one is the passive/ informative model. Many local governments today are still dealing with this one-dimensional mode which is providing information (e.g., phone numbers, maps, who is elected, calendar of events, job postings, statistics or tourist information). Then, governments move into 2) the transactional model, where citizens can get licences (e.g., marriage), and transact things that require payment or the filling out of forms. Governments finally move more into 3) the participatory model, which is digital democracy with specific features such as eVoting.

The City of Corpus Christi, Texas, is an example for the successful establishment of eGovernment. Corpus Christi is a relatively small city, but here small is good, as sometimes some of the greatest innovation can happen in small communities due to the level of scale and the ease of leadership compared to much larger, more political jurisdictions. The city has wireless aerial video surveillance, a bomb robot video surveillance and automated meter reading with WiFi backhaul, automated vehicle location, building inspectors equipped with WiFi, and many more. The city also has a small business portal which is trying to help key business in the towns and communities by making it easy to shop online and then picking it up at the local store.

Things are changing very fast: One of the innovations that is really changing everything up to now is the iPhone, as an amazing device with one of the fastest hook-ups to WiFi. If this is where we are today – what do we have to do to make this even better? Because this is what the citizens are looking at and this is how they want to communicate, especially the younger generation. In the beginnings, people were afraid of video surveillance. Today, video surveillance has become very popular and people want it as a means for crime prevention. Another big interesting technological breakthrough might be the recently announced Google Phone. How will that affect all the other offerings in the competitive market place?

With Web 2.0., government planers are facing a whole new phenomenon that is pushing the limit in terms of the best way to reach people: There is Second Life and there are cities that are literally building sites on this platform. Government agencies and colleges are setting up islands in Second Life. But there is also YouTube or Wikepedia.

All these new ways that people communicate have enormous implications on how people learn and think and how governments have to reach them. Digital democracy is more than just access. It is accessibility and how to reach citizens.

PAOLO BALDELLI, President of POSTELINK, Italy, [www.poste.it], delivered a great talk about a fascinating project that uses DTT for service transactions:

Digital Terrestrial Television (DTT).
The "Fondazione Ugo Bordoni" Project

The requirements of the project were to have a high level of interaction enabled by a return channel towards the user; user authentication via smart card, which guarantees the credentials of the user to whom the service is being delivered; and online services payment functionality. The projects had to respect a very strict timeframe of 6 months (thereof 3 months for the technological development and 3 months for testing).

The project consortium was composed of Postelink, responsible for the development, provisioning and handling of the data related to the services provided; Telespazio, responsible for the development and management of the return channel between the user's set top box and the Poste Italiane back-end; and RAI, responsible for the broadcasting of the solution.

One of the services developed within the project was the "T-bollettino". "Bollettino" is the most common payment system for utilities services in Italy (electricity, water, gas, …). Until now, the "bollettino" could be paid in postal offices, via the Poste Italiane website, and at the bank. The "T-Bollettino" is the adaptation of the online web transaction to the DTT channel. The project developed an "ad-hoc" user interface which is compliant with the television format. Business and back-end logics are the same for both the DTT and the Internet service. The application is delivered to the user by a micro-browser. The MHP component has been reduced to a strict minimum.

DTT users can pay the "T-Bollettino" by credit card, through their Bancoposta account or via a Postepay prepaid card. The payment system is the same for the Internet and the DTT channel. The user interface has been adapted to match the TV format.

The user is identified by a four step authentication process using a smart card: 1) The user enters his/her personal PIN code. 2) The system then logs in to the Poste Italiane server due

to an ID code registered on the smart card. 3) The server sends a “challenge” to the set top box. 4) The “challenge” is decoded by the smart card. The smart card is a digital signature card commercialised by Postecom, a company of the Poste Italiane Group.

Another application that was developed within the project is “T-Certitel”. Thanks to specific agreements between Poste Italiane and Italian municipalities, citizens can already apply for a birth or residence certificate via the Poste Italiane Call Center. The project developed an equivalent service enabling citizens to request the same certificates from home via the DTT interface.

The project focused on the possibilities to deliver public and private services through a new channel, that is DTT. However, due to the uncertainty regarding the final switch-off date in the transition from analogue to digital TV, the project is temporarily suspended.

NICOLA CONTARDI*, Responsible for Software Development, Lombardia Informatica, Italy, gave a very clear and concise overview on an especially ambitious regional project:

The CRS/SISS Lombardia Project – Regional Service Card. Health & Social Care Information System

The CRS (Regional Service Card) – SISS (Health & Social Care Information System) is one of the most important Italian eGovernment projects in the field of Healthcare. The core of the project is to create a “healthcare extranet”, that links operators, social services, organizations and citizens, tracking all the events which occur in a patient’s treatment (from prescription to administration) and providing value added services. The project is based on smart card technology, granting access to the network to both citizens and operators by their personal smart card. Two different types of smart card have been issued: An operator smart card for healthcare professionals and a citizen smart card for each citizen.

SISS is a regional healthcare information network that puts the citizen is the centre. All data are gathered, organized and reported on the basis of the citizen’s clinical treatment within the regional healthcare network. The main goals of the region of Lombardy, as initiator of the project, were: To improve services for citizens and to reduce the “distance” between the citizen and healthcare services providers by simplifying procedures and shortening waiting time; to improve governance of managing costs by enhancing planning and controlling instruments; to improve the quality of the prescription, diagnosis and care (appropriateness) processes by citizens’ clinical data sharing, through EHR, among qualified healthcare professionals; and to improve internal processes efficiency of the healthcare services providers that are connected to the network.

The following concerns the EHR application of the project: When a clinical document is created, it is digitally signed and stored in a local repository of the healthcare unit. Once the document is created, a link to the document is published in a central repository. This link is tagged with a series of relevant administrative and clinical data, which are used to retrieve the link and then the document. When a user wants to access the document, he/she accesses the central repository and the system is able to redirect the user to the document.

The project involves 9, 200,000 citizens and 150,000 operators, 8,000 general practitioners and paediatricians, 2,500 pharmacies, 15 local healthcare assistance organizations, 34 public healthcare services suppliers, and over 2,500 private healthcare services suppliers.

The project provides citizen identification functionality, electronic prescriptions management, an Electronic Health Record application, clinical information exchange among healthcare professionals, support to the electronic patient dossier of the general practitioner, booking services, accounting information flow management, as well as electronic signature, mailing system, and encryption functionality.

The project is based on a number of project principles: Evolution and integration – not replacement – of existing applications, is one of them. Further principles are the strict enforcement of personal data protection, process reengineering to improve efficiency, and a large deployment of digital signature and electronic documents (dematerialization).

In October this year, about 9 million citizen smart cards had been issued. More than 79% of the general practitioners and paediatricians are using the network and all local healthcare units and public hospitals of the region have integrated their applications in the network. The next step will be to propose the solution to private companies and other Italian regions.

* represented Fulvio Barbarito, Senior Project Manager, Lombardia Informatica, Italy

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The first question of the following **Q&A** part was addressed to Nicola Contardi and referred to the project's "magic ingredient" for success: How was it possible to break through the barriers and silos of self-interest of all these different groups involved in the project? Nicola Contardi emphasized that the CRS/SISS Lombardia project is a long-term project requiring enormous efforts both in terms of investment and manpower. The project started in 2002 and will end in 2009. It is currently entering the second project phase, which is spreading the results all over the Lombardy region. Moreover, the project relies on technologies that are available to everyone (e.g., web services, smart cards). The project results are very encouraging: There a many users and they all show a good degree of satisfaction with the project.

Then, the question came up whether there has been any financial support from the European Commission. Nicola Contardi stressed that the project is entirely financed by the Region of Lombardy together with a consortium of private companies. At the beginning, a sound business plan has been established. Corresponding to this plan, the business partners will achieve a positive ROI at the end of the project.

A further question addressed the issue of citizen's reluctance. As Nicola Contardi explained, practitioners reluctance was much higher than citizens' reluctance, due to the fact that the project required some "mental" rethinking of traditional processes. For instance, problems have been encountered when introducing the digital signature in hospitals. The physicians were not aware of what this means and when they understood that once they have to sign a document electronically, their normal signature is no longer required, they stopped cooperating. Much convincing was necessary to make them accept digital signatures.

Paolo Baldelli was asked when the "Fondazione Ugo Bordoni" project will be launched and how citizens are accepting this new service. Paolo Baldelli informed that this solely depends on when DTT will be implemented all over Italy. The solution is ready and operable, but will not be deployed before Italy decides about its change from analogue to digital TV.

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ALAN JONES, Chief Executive, Somerset County Council, UK, delivered a captivating talk on:

It's About Leadership...

In the UK, there are about 400 local authorities and they all say, they put their customers first. But, most of them do not mean it, because if they did put their customers first, they should be saying "Let's get the organization ready for this; let's turn the organisation inside-out for them if necessary". It is about driving change from within, it is about putting customers first, service quality, reducing costs, investment, and about changing careers.

Southwest One is a joint venture between Somerset County Council, Taunton Deane Borough Council and the private sector partner IBM. It is a public and private partnership and it is a "framework contract". This is about creating a framework into which all of the organizations in the south west, 51 local authorities and the health and police services, if they wish, can enter without competition and without significant cost. If they would to do it alone, the average local authority would take 2 years and spend about 2 million Pounds Sterling. Southwest One is open to all bodies in the region. It encompasses the back office and front of house. The private sector partner brings world class technologies and world class procurement into Southwest One. At least 60% of the money that is saved on procurement is spent on driving further enterprise-wide transformation.

Of the 400 local authorities in the UK, Somerset is the only who is got this far – with the contract having been signed at the end of September. Why is this so difficult for other local authorities? What is holding them back from joining Southwest One? The reason is that the spirit of partnership is weaker than the spirit of independence. People want to make their own.

Concerning the challenges that hold people back: Firstly, the challenge is within organizations. There is an inertia towards change, there are vested interests, misinformation and disorganization, and there are organizational "terrorists". These persons may even be in the top team or at the most senior level of the local authority. It is important to get rid of these people, because otherwise they will stop the progress.

There are also challenges between organizations: There is a kind of "institutional chauvinism" or "we can do it better" attitude, but also issues about phoney competition and misplaced rivalry between organizations, e.g., the district councils fighting one another and fighting with the county councils. And there are Politics with a big "P" and politics within the organizations with a small "p".

Then, there are tensions between the public and the private sector: Competing rationalities and values, the spectre of competition to some of the people, particularly to the unions. There is a distaste for profit in the public sector, but also a kind of organized opposition from the unions.

Nothing at all happens without a dream; and nothing big will happen without a big dream. People need a vision and the leadership to drive it. It is not just about contract technology, business planning and benefits realisation. It is about leadership of people. Without leadership, all this technology and convergence is going nowhere.

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During the following **Q&A** section, Alan Jones was asked about his greatest joy and his biggest frustration in the work with Somerset County Council since 2003. As Alan Jones explained, his biggest joy has been watching the various parts of the plan come together. In the UK, local authorities are graded (using the scale: poor, weak, fair, good, excellent) and in 2003, Somerset was ranked "fair". The task was to get Somerset from fair to excellent within 3 years. This objective has been achieved. However, the tough part – and this was the biggest frustration and also the biggest joy – was persuading people that Somerset was not the best in everything it does. Actually, when people think they are good, they are comparing themselves to the wrong people. And when they start comparing themselves with the right people and realise that they can learn from that, which was what Somerset has done with the contract, that is when they open up huge opportunities.

The next comment referred to the fact that the Dutch Citizen Service Code, an instrument for government agents to improve their service to citizens, has won the European eDemocracy Award 2007. Moreover the Dutch e-Citizen Charter for the promotion of citizen centred government, has been adopted by the OECD as leading guidelines for transforming governments. In his answer, Alan Shark stressed that there is a huge shift towards what can be called "citizen 2.0" or "user centric", and that the citizens in most countries are tired about the lack of performance of their public administrations when they see better performance in other areas of their life. Now, they expect as much from their local government. They do not want to go to a place that is open just from 9 to 5, if they only can get their at 6 o'clock. That is why eGovernment is so important at the most basic level in terms of how to get transactions accomplished. It is an encouraging time and a great opportunity to get back to what the private sector has done so well and to really get into performance based management in government.

Another comment questioned whether cutting costs is really a priority when transforming governments. Cost savings can not be realized very easily and all the transformations and changes will probably lead to an increased demand of citizens for government service delivery. Alan Jones explained that this year is his fifth budget year with Somerset County Council. When looking on the way Somerset County Council was faced to cost cuttings in the first 4 budgets, it was a 15 million Pound gap in the first year, a 18 million Pound gap in the second year, a 22 million gap in the third year and a 27 million gap in the fourth year. All that money was taken out of the budget. If local governments keep on "salami slicing" their budgets, they will not be able to continue to provide their services at the same level and people, as a result, will suffer. Through the framework contract Somerset County Council is going to save costs – not in the sense of cutting services but cutting it from efficiencies and feeding that back into the system.

The next question was addressed to Ellwood Kerkeslager, Mayor of Madison, New Jersey, U.S., who was asked about his experience in this context. Ellwood Kerkeslager agreed with the leadership concept and the idea of sharing with other local municipalities. However, it is very difficult to get elected local officials to agree to work with other elected officials in other communities. Madison has taken a leadership role to help bring the municipalities together to share services and a lot of savings have already accrued. A lot of savings are technology based, but most of the money gets spent on human resources and this is the most difficult area to manage for an elected official.

On the question of how to make leadership work, Ellwood Kerkeslager explained that he partnered with many of the corporations of the northern New Jersey area (among them, for instance AT&T and Cisco) in the design of the network. Madison Borough has built its own fibre optic network as an infrastructure for the municipality; it was then used as a basis for sharing amongst the schools, the government, but also with the county. Another important issue is the education of the citizens: Cities can do the best they can with their municipality, but if they are not educating their residents on how to use the new technologies, they might finish with a good government but a poor community.

Alan Jones confirmed that this is absolutely critical, even if it is not critical around the shared services agenda mentioned. People do not care very much about how the services are delivered – what they care about is best quality/ least cost. However, in terms of what is available and how to teach people to use the services, Somerset spent a lot of time with going around the communities (276 schools, libraries, every village hall, and about 300 parish councils), showing them about broadband and teaching them how to use it. About 5 years ago, the broadband take-up in Somerset was the lowest in England. Today, it is one of the highest in England.

Furthermore, the need for social inclusivity was stressed as one important difference between public sector organizations and private sector organizations. Private sector organizations can choose their customers, public sector organizations cannot. Public sector organizations have to ensure that they are providing services in a social inclusive way, which everyone can access. Furthermore, people use private sector online services (e.g., Amazon) because they are very easy to use. The pressure on the public sector is to make people to be better educated and better aware of the services and to teach them how to use these services – but at the same time public sector organizations have to make sure that they are using technologies in a way that makes the services really user-friendly to use.

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ERIC LEGALE, Director of Issy Média, City of Issy-les-Moulineaux, France, provided an excellent insight into

The Example of Issy-les-Moulineaux

Issy-les-Moulineaux is a medium-sized city, considered one of the most advanced in France in the use of ICT. With 63,000 inhabitants and 70,000 jobs, Issy stands out because of its particularly dynamic economic base. 57% of the companies based in Issy belong to the ICT sector and include the Internet Orange Group, Cisco Systems, France Télécom R&D, HP and Microsoft Europe. With approximately 75% of inhabitants connected to the Internet from their homes, mostly by broadband connection (ADSL, cable or FTTH), Issy-les-Moulineaux has a connection rate twice that of the French national average.

Within 10 years, the city adapted by modernising its public administration and implementing, amongst others, e-public procurement, outsourcing of the IT-systems, a telephone call centre, online training for municipal civil servants, or the citizen relationship management system – a one stop shop called IRIS. Electronic services were first implemented in 1997, on the city's website. These include online orders for birth, death, and marriage certificates; orders for city publications; reservations for parking spaces for new residents; reservations from the city's multimedia library catalogue or games from the games library; using and recharging the city-issued smart cards used to pay for school meals. Issy's citizens chose to

make payments for school fees electronically in 55 % of cases. Since the implementation of e-Procurement, in 2003, the city's request for proposal process can be completed electronically.

At the same time, a large spectrum of new services has been provided to Issy's population, such as cyber kindergartens, cyber tearooms for the elderly, mobile services (in particular WiFi), a cyber company incubator, video conferencing during kids' holiday camps, or the creation of digital content in "The Cube".

Convinced of the positive impact of new technologies on the citizens' everyday life, the city introduced tools to reinforce citizen participation in local democracy. Since 1997, the Interactive City Council is broadcasted simultaneously over cable network and the Internet. Issy's Interactive City Council allows inhabitants to take part in live sessions and to ask their representatives questions.

Another application is the "Citizen Panel". The Citizen Panel, made up of 900 inhabitants, is questioned via Internet every three months on different subjects of local interest. The Citizen Panel is an important tool to promote local democracy and to support decision making based on dialogue and consultation. As part of the city's participatory budget process, 10% of investment budget expenses are subject to the District Council's opinions. Moreover, eVoting has been used in several elections in Issy-les-Moulineaux, particularly for the District Council elections in 2002 and 2005.

Issy annually organises the World eGovernment Forum to accelerate and facilitate good practices exchanges both among represented administrations and citizens as main stakeholders in the actual democracy.

The following **Q&A** of the presentation referred to the question where Issy-les-Moulineaux stands compared with its neighbouring localities. Is Issy ahead of them or competing with them? To illustrate as to what extend Issy is at the forefront of innovation, Eric Legale quoted the example of the Interactive City Council that was launched in Issy 10 years ago. The City of Paris, which is very close to Issy, started broadcasting the City Council meetings only this year, without giving the citizens the possibility to ask their representatives questions.

MADELEINE SIOSTEEN-THIEL, Senior Programme Manager, Services & IT Implementation Department of VINNOVA, Sweden, summarised with great eloquence and clarity why eGovernment is about technology, about leadership – but also about research:

eGOVERNET – The European eGovernment Research Network

The project eGovernet (European eGovernment Research Network) is a co-ordination action co-funded by the European Commission within the 6th framework programme. The project, that was launched in January 2006, focuses on eGovernment research management to help create national eGovernment research programmes while also encouraging integration of existing national eGovernment programmes. The project is now coming to its end.

eGovernment research in Europe is characterised by a lack of visibility, fragmented funding mechanisms, and a lack of co-ordination of national research policies. Furthermore, this research area is not an established area. The eGovernet project aims at increasing awareness of these facts all over Europe by organizing seminars, workshops and roundtables and publishing a series of reports and studies.

The project has established an overview of the current state of eGovernment research programmes in all European countries. This survey, that also includes a gap analysis and country information sheets, shows that there is a lot of research policy made on national, regional and local levels and that there are many valuable projects going on, but it also indicates that there are not enough funding mechanisms. eGovernment is a very complex field requiring research not only in technological areas, but also in areas like social behaviour or legal aspects. The vision of the project is to co-ordinate and stimulate research policies and work towards a long-term trans-national strategy for eGovernment research in Europe.

The consortium backing the eGovernet project represents organizations with national programming responsibilities for innovation and research in eGovernment in their home countries, which include both the old and new member states and the associated states. The countries involved are the Czech Republic, Ireland, Italy, Lithuania, Norway, Poland, Slovenia and Sweden. A Joint Research Centre brings a European perspective to the consortium.

The desired future state of eGovernment research has to include different dimensions: Users and stakeholders, a long-term vision, the organization of eGovernment research management and funding of different types of research (mixed) and technological development in order to lead to a higher quality of eGovernment implementation.

The next eGovernet workshop will take place in Vilnius, on 6 & 7 December, 2007. During this event, an “e-Ambassador Club” will be formed in order to involve real ambassadors in the process of stimulating eGovernment research.

During the following **Q&A** part of the presentation, the question raised whether eGovernet is looking for others to join the consortium. Madeleine Siosteen-Thiel stressed that everyone is invited to register in the “who is who” directory” of the eGovernet website or to join the eGovernet interest group. However, as the project will end in a couple of months, new ways of collaboration and networking have to be worked out.

Data Governance, Security & Privacy

STEVEN B. ADLER, Program Director, IBM Data Governance Solutions, IBM CORPORATION, USA, [www.ibm.com], as **moderator** and **chairman**, made a great introduction to the topic of the session, data governance as one of the major issues that the world faces today and presented with great know-how

The Six Questions Every Organization Should Ask About Data Governance

Data governance has emerged in the last 3 years and deals with data as an asset of increasing value that has to be protected. Accomplishing this is a huge challenge because enterprises, institutions and governments are still organized in a feudal industrial model with highly specialized jobs that impede a general consensus.

Data governance is a term including both a technical aspect and a political one. Data means information that is important and needs to be protected while governance is a political process where people gather, leave out their personal interest and work for the common good. People from different disciplines must collaborate to avoid mistakes that can lead to costly losses for the business.

In 2004, a group of companies realized the emergence and the impact of data governance and decided to work together to explore problems and solutions. Thus, enterprises from the same industry, normally competing with each other, formed the IBM Data Governance Council. They have elaborated a Maturity Model describing all the important elements about data governance. The model has 11 disciplines that are interrelated and should be treated together. At the core there are data quality, information life-cycle management and information security and privacy. These disciplines should be enabled through new types of organisational structures, boards directly under the board of directors having stewardship powers and policy making rights that would reduce risk and enhance value creation. Furthermore, for each of the 11 categories, the Council came up with 5 levels of maturity for each one of them and described how they related to each other.

The members apply this maturity model to their own companies to benchmark their current practices and compare to their peers. Eventually, it helps them asses the present situation and establish where they want to go and how to get there (as described in the data governance balanced scorecard). IBM is the facilitator of this Council. Its role is to look for technical solutions that it could bring to the market to solve their partners' problems and provide best practices examples to other organisations.

RICHARD LIVESLEY, Program Director, Information Governance and Quality, BMO Financial Group, Canada, made a very interesting presentation of

Information Management Governance @ BMO Financial Group

The Bank of Montreal founded in 1817, was the first bank of Canada that financed the fur trade and the railroads and printed the first Canadian money. Today, BMO is one the biggest North American banks present also in Europe and China. Data governance is of major interest to the BMO and other companies because they have to comply with the existing legislation and regulation in the field (i.e. protection of individual rights, enterprise transparency) in a shrinking timeframe. It is important to know where the data resides, to access it quickly, to be able to trust it and to use it effectively.

In 2004, as result of a business problem, BMO became aware that information becomes a strategic asset and came up with an Information Management Policy. The implementation of this policy led BMO to be considered in Canada the most trusted organization in terms of privacy and their security practices met ISO standards. Given the size and the complexity of the problem, BMO was among the first members of the Data Governance Council. The Maturity model was used primarily as a benchmarking tool. Now it is used to look at the 11 disciplines, focusing more on some of them, depending on the business goals that have to be achieved at a certain moment.
In BMO, data governance has a strong role because they have an integrated approach to risk issues with a close collaboration between privacy, information security and information management with integrated standards and training programs for all employees. The operational risk frameworks from the Basel II accord have been levered to be able to take advantage of the auditing principles in the organization, the enterprise and business unit reports and monitors on information risks on many of the categories of the model, corporate standards are embedded in the business processes, the record management meets also the information risk policy. Even so, more things are still to be done.

One of the biggest challenges is to decide what to measure, but taking advantage of what already exists in the field, monitoring and reporting on corporate standards and key risk indicators have to be improved. Another issue is that information assets have to be more visible in order to manage better the control and risk associated with them (i.e. emails to clients containing non encrypted critical information). Other goals include simplifying the way people understand and respond to information risk, reducing costs and being faster by using a single source of trusted data.

One of the lessons learned in the last 4 years of data governance is that it is much easier to comply with imposed regulations than to adopt the information management practices and principles. Another lesson is that the maturity model is uneven because some areas can be more reactive than others and not all information has the same value and risk profile. Finally, even if at the beginning data governance seemed to be to big of a problem, but it is just a hard one and information can be governed and there is a variety of ways to be successful at it.

JACQUES BUS, Head of Unit, DG Information Society and Media of the European Commission gave a very distinguished talk on

Data Governance, Security & Privacy

The European Commission is an important actor in the field of using ICT for security and privacy matters with around 55 million euros of funding each year. Beside governing data, other issues are important for the overall society, such as data collection. Especially when collecting personal information, rapid and stealth changes may be seen. Surveillance, CCTV, ID cards, biometrics, DNA are just a few of the means to collect sensitive data that needs to be protected. But not only public administration collects data. When chatting on the Internet, using interactive TV or mobile phones people are also transmitting information about themselves. All the interactive services from Amazon to the fidelity cards are means of tracking data and profiling.

Once collected, the data is handled, stored, analysed with ICT means and it is impossible for persons or organisation to control its use through personal actions. Ultimately, this may put a break on future developments of the information society because of the infringements of personal freedom and creativity. To overcome these dangers, the technological progress may provide new means of controlling data usage. The European Commission funds several projects in this area but also adopts regulations on privacy and data protection. Ongoing industry initiatives complete governmental efforts.

Two big programs funded by the FP6 are PRIME - the Privacy and Identity Management for Europe for developing privacy-enhancing solutions and FIDIS - The Future of Identity in the Information Society for the fragmentation of the research in electronic identities such as biometric pasports and RFIDs. The 7th Framework Program, FP7, specifies the new directions of R&D in the European Union. In the field of sustainable privacy and identity management, it aims to bring privacy to the future web, to use SOA for secure services, to enable privacy – respecting data access in cases of emergency, to make biometric identities user-controlled and cancellable. On the policy side, the EU has many directives, strategies, debates and communications concerning private data management.

Among the industry initiatives there is the “Identity Metasystem”. The essence is that an identity meta-layer has to be found and developed applications must be independent from identity management. Proving to be a field of interest, the meta-layer is being thought of and developed by an increasing number of industries (i.e. Identity Selectors).

Following this presentation, M. Adler made a comment on how personal information is fractured among different institutions and it is very difficult for private individuals to assert any control over their identity. To overcome this, IBM started the Higgins Project for an open source code that allows people to create identity replicas on their computers and use them under their real names or pseudonyms.

PAUL WELTI, Program Manager for European Programs at SAGEM SECURITY, SAFRAN GROUP, France, [www.sagem-securite.com], made a captivating presentation on

Data Governance, Biometrics Application for National Identity and Fraud Prevention

Biometrics is used in large scale automated systems since the 80's and Sagem manages several projects all over the world. It was firstly used for police systems but since the 90's, civil applications developed and they represent half of the market today.

Among the uses of biometrics in civil systems there is ID fraud prevention, a subject that costs about US$ 50 billion /year in the USA and £1.7 billion / year in UK. A second need for identification is related to reducing costs and increasing efficiency within the administrative services like the identity card deliverance and the social security cards in France. The third important need for identification lays in the increasing flow in transportation, especially in airports where a fluent traffic can be achieved with automated devices for ID verification (i.e. the automated gates).

Regarding the deployment of biometrics today, an increase of data storing and processing capacities can be seen because there are more and more identities registered in different systems and more requests to the system. For example, the FBI AFIS system has more than 200 million persons registered and more than 100,000 inquires are formulated each year. The BMS is the European Biometric Matching System which stores information on almost 100 million visa applicants for the Schengen area and every member state is connected to this system for verification requests. The Mexican election systems is a multimodal biometric system with fingerprint and face recognition for all voting population that allows looking for duplicate votes and identity verification during elections.

Around 500 million people benefit of large scale biometric systems and their number will increase in the future, but this raises a data governance issue because personal data means sensitive information. Accumulating biometric information and using it in interoperable systems is a sensitive subject because this information is linked to the body. But the more critical element is the link between the biometric data and the identity of the person.

The future development of biometric technologies depends on three challenges of data governance: the user acceptance for domestic and/or governmental use, the legal acceptance which is quite restricted today in many countries and the technological aspects of having convenient biometric systems acceptable for the people. Among the paths to follow, from the technological point of view there is the need to develop new models and architectures for more efficiency, privacy, trust, protection and transparency. Privacy-enhancing technologies and combined cryptography and biometrics are the new approaches to a compromise between security matters and privacy ones. In terms of regulation, a certification scheme is needed for the product and the processes employed because biometrics can be "good" or "evil" depending on the way it is used.

EDWARD KECK, Vice President, Security Strategy & Governance, Key Bank, USA presented with great insight

Key Bank and the IBM Data Governance Maturity Model

Key Bank is a 90 billion dollar financial institution with 20,000 employees in its American offices and its international leasing and investment businesses department. It is one of the charter members of the IBM Data Governance Council where they found significant value in peer interaction and took part in the development of the Maturity Model. Key Bank has mainly used the model to benchmark against other organizations but also to benchmark their business partners. It has given them an idea of the status of the company an the path they have to take to reach their targets and also served them as framework for additional internal measurements.

Data governance is a formal function that cannot be held within a part of the corporation but has to cover multiple departments that must collaborate over several core disciplines. It has become an issue due to regulatory requirements such as SOX or Basel II. Today there are new drivers to data governance: the demand for efficiency, quality and sustainability (i.e. easier compliance with changing regulations).

When implementing governance one must first leverage the existing initiatives instead of inventing new ones and extend their application to other areas. As opportunities to do governance are very frequent, people may do it without even knowing, because the word is associated with the idea of important budget and more overhead. The model presented cultural challenges and also a difficulty to translate technology in business language. Within Key Bank, the future priorities are to expand stewardship, to focus on critical data, to leverage quality initiatives for business impact and to continue the cultural shift at organizational and personal level because businesses own the information and it is theirs to say how they want it handled by the technology, namely, people must understand their responsibilities and objectives.

After implementing a data governance program, Key Bank has learnt many lessons useful to newcomers. The first one is to involve as many people within the company from the earlier stages, to make them feel part of the project and ask for their opinions. Specifically in large companies, the executive upper layers understand the need to implement data governance projects, the lower layers understand it too because they see the gain in efficiency. On the other hand, the middle layer must be convinced because generally they are the ones submitting budgets and for this, starting at a small scale and showing wins is a good approach. Governance must be treated as an enabler to security and privacy. It is also important to measure achievements and present these concrete results and the project itself from a business prospective.

The advice that Key Bank may give in the field of data governance include to let go of the program as soon as it is implemented because people will carry it on progressively, to adapt the maturity model to the organization's needs because all 11 categories cannot be just as important. The technical department should seek business initiatives to engage. Data governance must begin in the area where something already existing can be leveraged because there is no right or wrong place to start. A governance council where all competences of the company are represented can provide multiple prospective and issue measurable policies.

CENGIS BARLAS, Head of Data Governance, Discover Financial Services, USA, made a remarkable presentation on

Data Governance Maturity Model Use at Discover Financial Services

Discover Financial Services is the largest credit card company in the USA with around 55 million card holders, 15,000 employees in multiple operations centers. The data governance program started in September 2006. Afterwards, they joined the Data Governance Council and formulated a strategy after evaluating the existing situation and defining the target to be achieved. This strategy was driven by business needs like: a better control of critical data i.e. all credit card information, establishing the real quality of the information, lowering costs of implementing new solutions and improving speed to market. Another very important reason was internal audit and compliance with regulations for financial services (SOX, FDIC, PCI).

A government acts in a unique way according to the people's culture, history and needs. It goes the same for data governance within companies. Finding a place to start was the hardest part and here is where the Maturity Model developed by the Council came in handy because it provided a complete tool for assessing the current state and for creating a baseline of maturity and progress measurement.

From the Maturity Model, Discover Financial Services used only the categories significant for their company: organizational awareness, compliance, data stewardship, metadata, and data architecture and quality. They elaborated a plan of the implementation process in all the layers: technology, business, governance body and executive management with clearly defined responsibilities for each department. In order to integrate this new dimension into the current practice, policies and standards for data governance had to be issued, data stewardship acquired. Changes started from the existing processes in which have been integrated governance practices.

As other organizations, Discover Financial Services faced many challenges in doing data governance. Like in any project, respecting a budget is important so conflicts may appear. Theory must borrow a business language and measurable targets in order to be understood by the persons meant to apply it. Finding a point to start from is crucial, as well as getting the support of the management. A cultural shift in the organization is possible only by constant education of the employees.

Based on their experience, Discover Financial Services recommend to newcomers: to constantly communicate and educate employees, to show real results, to relate to business needs, to start small and be patient, to define a general strategy as well as everyone's role and responsibilities.

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Before the concluding **Q&A** section, Steven Adler wanted to emphasize the importance of the work of all 55 members of the Data Governance Council, a standout initiative of practitioners to solve complex problems by working together and bringing real value to the market. The information on the first credit card issued in 1981 and on credit cards today is stored into computers due to the same 80-character field. This field is still being used because it would be too costly to change the existing infrastructure. On the 11 trillion dollars of global commerce performed through credit cards there is a 2% data quality error rate. These errors in transmission between systems are not corrected because the correction is more expensive than the mistake.

The first question from the audience referred to the way users can regain control over their personal data after disclosing it to a bank, a government service provider, or an online retailer. Jacques Bus answered that disconnecting identity data is of major interest both for industry and for governments. Actually many sets of identities are created because each system asks for more or less data. To solve user control over this information, the system must allow negotiation (e.g., when using telebanking, the client must identify to the bank, but the bank does not have to identify to her client). This kind of symmetrical system should be developed in case there will be an independent meta-level identity systems. Cengis Barlas added that the real solution is a uniform policy around the world that properly governs information and the use of it. All the innovative technologies will only help gather more data, transfer it from place to place and make thing even more difficult.

The second question referred to the CIOs' and CPOs' opinion on political matters like the "Fair Information Practice Principles" issued in the USA by the FTC and what else should be done in terms of international co-operation on data governance. Steven Adler answered that guidelines and codes like the quoted example lack the collaboration with a real practitioner. The information flow is from the principle to the practice and this should be corrected. M. Keck added that privacy means security. CIOs and CPOs are a good place to start and they may understand the nature of the issues, but until business management understands them and their role in it, the project cannot work. There is no privacy as long as somebody in this world can tie an identity to any other piece of information – so the effort should be concentrated on separating them. Cengis Barlas stressed that in terms of protection and identity management laws are needed, and not guidelines because information has become a basic need.

The third question referred to the security of the credit card information. Steven Adler answered that data coming from a credit card is handled by many people who work in the system and there are no guarantees against fraud. Jacques Bus stressed that for this reason it is important to separate data from identity information. The offenders may have acquired data and they may use it but they must not tie it to the person it belongs to. Systems must create trustworthiness by transposing real world trust to the virtual world. Steven Adler added that today people are very data dependent and the real threat comes from companies and governments that have the time and money to analyze the increasing amount of data.

CONFERNCE DOCUMENTATION

All conference documentation, including programme, presentations and slides, speakers' profiles, participant's testimonials, and related information on the Global Forum 2007 are made available for download on the website of ITEMS International www.items-int.com.

HAVE A QUESTION OR COMMENT?

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

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Your feedback is important to us and we would be pleased to receive your comments on this year's Global Forum as well as suggestions for the upcoming Global Forum 2008.

The team of ITEMS International will be pleased to answer any question and to provide you with more information about the Global Forum 2008.

Please make sure to check our website regularly for updates.

ADSL	Asymmetric Digital Subscriber Line
ASCII	American Standard Code for Information Interchange
AVMS	Audiovisual Media Services
BPON	Broadband Passive Optical Network
CAPEX	Capital Expenditure
CATV	Cable TV
CDMA	Code Division Multiple Access
CIO	Chief Information Officer
CPO	Chief Privacy Officer
CRM	Customer Relationship Management
DG	Directorate General
DMB	Digital Multimedia Broadcasting
DSL	Digital Subscriber Line
DTT	Digital Terrestrial Television
DTV	Digital Television
DVB-H	Digital Video Broadcast – Handheld
DVB-S2	Digital Video Broadcasting – Satellite 2
DVB-T2	Digital Video Broadcasting – Terrestrial 2
EC	European Commission
EFTA	European Free Trade Association
EHR	Electronic Health Records
eID	electronic Identity
EMEA	Europe, Middle East and Africa
EPG	Electronic Program Guide
ERG	European Regulatory Group
ETP	European Technology Platform
EU	European Union
FCC	Federal Communications Commission
FP7	7th Framework Programme of the EC
FSAN	Full Service Access Network
FTC	Federal Trade Commission
FTTB	Fibre To The Building
FTTH	Fibre To The Home
FTTN	Fibre To The Node
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GERD	Gross Domestic Expenditure on R&D
GHz	Gigahertz
GIS	Geographic Information System
GPON	Gigabit Passive Optical Network
GSM	Global System for Mobile communications
HD	High Definition
HDTV	High Definition Television

ICANN	Internet Corporation for Assigned Names and Numbers
ICT	Information and Communication Technologies
ICS	Information Communication Services
ID	Identity/ Identification
IGF	Internet Governance Forum
IMS	IP Multimedia Subsystem
IP	Internet Protocol
IPR	Intellectual Property Rights
IPTV	Internet Protocol Television
IPv6	Internet Protocol version 6
ISDBT	Integrated Services Digital Broadcasting – Terrestrial
ISIM	IMS Subscriber Identity Module
ISO	International Standards Organization
IT	Information Technologies
ITU	International Telecommunication Union
HDMI	High Definition Multimedia Interface
HSDPA	High Speed Downlink Packet Access
Mbit/s	Megabits per second
MediaFLO	Media Forward Link Only
MHP	Multimedia Home Platform
MII	Ministry of Information Industry (China)
MMORPG	Massively Multiplayer Online Role-Playing Games
MPEG4-AVC	Motion Picture Expert Group 4 – Advanced Video Coding
NESSI	Networked European Software & Services Initiative
NGN	Next Generation Network
NGO	Non Governmental Organization
NRA	National Regulation Authority
NTSC	National Television Systems Committee
MVNO	Mobile Virtual Network Operator
OECD	Organization for Economic Co-operation and Development
ONS	Object Naming Service
OSA	Open Service Access
OSCE	Organisation for Security and Co-operation in Europe
PAL	Phase Alternating Line
PDA	Personal Digital Assistant
PDF	Portable Document Format
PIN	Personal Identity Number
PSTN	Public Switched Telephone Network
Q&A	Questions and Answers
RAND	Reasonable and Non-Discriminatory
R&D	Research and Development
RFID	Radio Frequency Identification
ROI	Return of Investment
SARFT	State Administration of Radio, Film and Television (China)
SIM	Subsciber Identity Module
SME	Small and Medium-sized Enterprises
SOA	Service Oriented Architecture
STB	Set Top Box

TLDs	Top Level Domains
TMC	Traffic Management Control
TPM	Trusted Platform Module
TV	Television
TVWF	Television Without Frontiers
UK	United Kingdom
UMTS	Universal Mobile Telecommunications System
UN	United Nations
US	United States
USA	United States of America
USB	Universal Serial Bus
USD	US Dollar
WHO	World Health Organisation
WiFi	Wireless Fidelity
WiMAX	Worldwide Interoperability for Microwave Access
WSIS	World Summit on the Information Society
VDSL	Very high bit-rate Digital Subscriber Line
VoD	Voice on Demand
VoIP	Voice over Internet Protocol
3D	3 Dimensional
3G	3rd Generation
3GPP	3rd Generation Partnership Project
4G	4th Generation

annexe 1: w2i white paper

Broadband Wireless and European Cities at the Public-Access Crossroads

Based on Proceedings from W2i Digital Cities Workshops at the Global Forum in Venice, Italy, December 5-6, 2007

THE WIRELESS INTERNET INSTITUTE

Abstract

In the 21st century, local authorities increasingly view broadband as a "utility" like water and electricity that must be made widely and affordably available to their constituents. The efforts of urban local authorities to bring free or low-cost broadband has sparked a decision-making process inside the European Commission, where the Director-General of Competition has begun ruling on whether the expenditure of public monies for such initiatives constitutes unfair use of "state aid." Consequently, several initiatives have been shelved or are in limbo, begging larger questions about the competitiveness of European communities in the global economy. Based on a series of Digital Cities Workshops hosted by W2i at the Global Forum in Venice, Italy, on November 5-6, 2007, this paper summarizes contemporary discussion around the role of cities and regions in promoting broadband services.

Credits

Founded in 2002, the **Wireless Internet Institute, LLC**, is an independent forum bringing together stakeholders around the world to accelerate the adoption of wireless Internet in support of better managed and safer cities. The W2i Digital Cities Convention is a thought-leadership conference exploring the planning and deployment of broadband-wireless infrastructure, applications and services at the metropolitan scale, and a professional development seminar for local-government IT professionals.

Items International is an international consulting firm based in Paris, dedicated to delivering Information & Communication Technology (ICT) strategies. It organizes annually the Global Forum conference. This event is dedicated to business and policy issues that affect the successful evolution of the Information Society worldwide. As a high profile international think tank bringing together government, business and civil society, the Global Forum acts as a catalyst of innovation.

Sponsored by **IBM**.

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Introduction

Broadband is viewed as an essential resource in the information society and is a priority of the European Community and its member states. To bridge the digital divide, member states have set goals of broadband access for all citizens. For example, in December 2006, Italy launched its Committee on Broadband Diffusion to coordinate different government bodies and the involvement of regions, local authorities, and operators to provide network services, inviting the support of operators and avoiding adversarial relationships.

Local authorities in numerous European cities have also wanted to make broadband readily available to their constituents, sparking a decision-making process inside the European Commission around when it is permissible for them to do so. Typically, a municipality must make a clear case for market failure, or risk a judgment by the EC that its expenditure of public monies to deploy broadband for public access is unfair use of "state aid." While the EC's ultimate stance on the matter remains unclear, today many cities view this posture as heavy-handed.

Caught between a call to bring a 21st-century "utility"—broadband—to citizens and concerns about abrogating EC rules, some cities have begun investigating alternatives and new business models. This paper summarizes a discussion around the role of cities and regions in promoting broadband services, and is based on the proceedings from a series of Digital Cities Workshops hosted by W2i at the Global Forum in Venice, Italy, on November 5-6, 2007.

Europe's Rural Broadband Success Stories

Central to the discussion around broadband-wireless service provision in Europe and North America has been the identification of sustainable business models. While attention has focused on public-private partnerships between large cities and service providers, in Europe, some of the best models of public-private collaboration are emerging in rural areas rolling out fiber networks or WiMAX-type backbones to bridge the digital divide.

The European Commission appears to have little issue with approving public monies for fiber networks when there is little or no broadband service and when the new networks are opened up to multiple service providers to drive down prices.[1] EC Treaty state aid rules (Article 87(3)(c)) allow subsidies for the development of certain economic activities or of certain economic areas provided there is no overall negative effect on competition.

The mountainous Piedmont Region in Italy's northwest is one such example. In 2002, a consortium of 54 members embarked on a five-year plan to bring total digital inclusion to 1,200 municipalities facing a long-term digital divide in the region, including more than 600 villages with populations below 1,000.

CSI Piemonte forged an agreement with Telecom Italia to reach more territory than it could have without an MOU. "We are guaranteeing technological neutrality and open access, and the network is open to local and national operators," said Margherita Italiano of CSI Piemonte, which is responsible for the technical implementation of the WI-PIE program.

The infrastructure is owned by the regional government, and service is delivered by some 16 service providers at the last mile. The project's cost will total €100 million between 2002 and 2007, including about €20 million in European Structural Funds.

Italy's Piedmont Region: Expected ADSL coverage by the end of 2008.

[1] The EC has approved rural fiber projects in France (southeast of Toulouse), Wales, and Ireland.

Spain's Basque Country is small—about 7,300 square kilometers with 2.1 million inhabitants in three territories and including 250 municipalities. In 2002 and 2003, the Basque government grew increasingly concerned about the lack of broadband penetration in rural areas of the region. Access was limited largely to those municipalities with the largest populations and thickest industrial fabric. In May 2004, the Basque government created a public corporation, ITELAZPI, and charged it with providing carrier services for radio, TV, and broadband to all populations in 100 target municipalities, even if they were isolated or dispersed over the territory. In October 2004, ITELAZPI called a public contest to select a telecommunication operator as its partner, and EUSKALTEL, the incumbent telecom, was selected at the end of 2004, to deploy a WiMAX network on the back of existing radio and TV infrastructure assets. The Basque government committed to make the necessary investments in network equipment and future upgrades, while EUSKALTEL would operate it. Now deployed, the network remains in public hands, allowing public authorities to make requirements about its use. The agreement also provides a guarantee for the future the region's rural areas.

European Cities at the Public-Access Crossroads

Rural broadband projects around Europe are emerging as models of creative public-private collaboration, to cure market failures and bridge the digital divide. Just as in the United States, however, public-sector intervention by European cities has been more complex. The use of public monies is at issue.

For example, Margherita Italiano of CSI Piemonte said her organization is thinking about deploying a free Wi-Fi access model for the City of Turino, but at the moment activity there is limited to e-Government services and access in the public libraries. "The network is for business," she said. "CSI is a public company and not an operator and cannot overlap with market actions."

Under state-aid rules in the EC Treaty, the EC Director-General for Competition can halt the use of public funds for projects it deems compete unfairly with commercial Internet service. DG-Competition's Wireless Prague decision in May 2007 was the first to deal directly with state aid for free municipal Wi-Fi. To receive the EC's go-ahead, the City agreed to limit use of its network to government operations and a "walled garden." The EC ruled that Prague's municipal-wireless project did not involve state aid because no special advantage would be conferred on any private- or public-sector operator of the network.

At the time of the decision, EU Competition Commissioner Neelie Kroes said: "Investment in broadband networks is primarily a matter for private companies. State subsidies for such networks are only acceptable if they address a well-defined market failure or cohesion problem. I am glad that the city council of Prague modified its plans so that the project can go ahead without distorting competition."

> Public-sector intervention by European cities has been more complex. The use of public monies is at issue

Critics of DG-Competition's ruling have countered that the network will provide little benefit to a public seeking low-cost broadband Internet access. "Prague's offer of free public services had to be so reduced that building the network now seems almost pointless—and getting that far took 11 months of negotiation," said Robert Horvitz of the Open Spectrum Foundation.

Daniele Auffray, Vice Mayor of Paris, argues for a lobby of cities who think that Internet is a public service. "The problem of wireless needs to be like water or electricity, an essential thing," she said at the Global Forum in Venice. "It is not only our experience but the experience of many cities. Public service does not mean that the city does it ourselves. We have to invent a public and private partnership, but where the interests of citizens are well understood."

Jaroslav Solc, IT development director for Prague, has said: "Simply, the opponent is not [the] EC but some operators with lack of understanding for cooperation with cities on muni wireless infrastructure and potential for new services."

The need for creative partnership between local government and the private sector is real. A W2i/Yankee Group survey of more than 180 local-government IT professionals and leading members of the broadband-wireless industry at the W2i Digital Cities Convention in London[2] revealed

[2] Olympia Convention Centre, September 25-26, 2006.

The ancient Italian seaside city of Molfetta had been suffering from chronic traffic congestion. Officials determined to use the latest video surveillance technology to monitor and regulate traffic, but soon discovered that installing a new fiber network capable of handling the broadband requirements for transferring video would cost millions and take years. After consulting with Alvarion, the city decided that the BreezeNET® DS.11, operating in the 2.4 GHz band would be to the best solution for establishing a wireless broadband network. The single modulation data encoding and small form-factor made it ideal because it minimized electromagnetic pollution and made little visual impact, while providing excellent performance. Now, 16 traffic cameras deliver live video to police headquarters over Alvarion's network at up to 11 mbps. Police are able to study traffic patterns, observe violations and dispatch police units to trouble areas.

by anyone. The market is not able to cover this point, but we are not allowed to do it by the law."

Chris Vein, CIO for the City and County of San Francisco, commented on the market failure in his and other U.S. municipalities. "There are parts of the city where you cannot get DSL," he said. "They are effectively redlined. And you are not going to get AT&T to build out in those places. So you're left with a problem as a city."

Vein added that cities step in and do things all the time when problems are not being solved by the private sector. "As far as the San Francisco project goes, we still believe in free and affordable ubiquitous Wi-Fi service for all citizens." In August 2007, EarthLink backed out of its plan to deploy a network across the 49-square-mile city.

Vein also mentioned FON, a Wi-Fi business model where consumers agree to share their connectivity with others. "I think telecom providers are going to have a little trouble with this model because basically they are taking DSL and letting multiple people use it to access the Internet," he said. Vein also mentioned Meraki Networks, which uses an inexpensive mesh networking client/repeater model and is already deploying in San Francisco.

Jumpstarting Networks with Government Operations

While public access is now deemphasized as a primary driver of citywide wireless—for various economic, regulatory, and technical reasons—revenue-generating applications and government efficiency improvements delivered to multiple user groups may open the way for some cities and counties to jumpstart networks. Bologna has begun to explore whether the network can be expanded in support of a government operation such as video surveillance, with the extra bandwidth used to provide public-access.

In 2007, W2i began observing a reemphasis on public safety, emergency response, video surveillance, machine-to-machine applications, and intelligent transportation as primary drivers of networks—over public access, digital inclusion and economic development. The shift means an greater focus on the value proposition and purpose of deploying broadband wireless for local communities, tying projects back to a tangible return on investment. These operational efficiencies may include:

- Government-to-citizen communications (e.g., neighborhood portals)

Stockholm's successful road-user charging solution was designed, implemented and operated by IBM. The project's aim was to reduce traffic by 10-15%, increase average speed on streets and roads, reduce emissions, and improve the city's environment.

While politically controversial, the system is regarded as a technical success and achieved significant impacts in traffic reduction in Stockholm's city center, including a 25% reduction in traffic volume, removing 100,000 peak-hour vehicles; an increase of 40,000 mass transit users per day; a speeding up in bus schedules and reduction in queue times. Emissions decreased by 14% in-city, and 2.5% in-county.

The congestion charge is a national tax, and the monies are used in the Stockholm region for investments in the public transport system and infrastructure connected with the trial.

The electronic road pricing solution implemented by IBM in Singapore similarly reduced traffic—by approximately 30%—with charges varying by location, type of vehicle and time of day. Other cities showing interest in this solution include Dubai, Paris, Seoul, Shanghai, and New York.

Funded with £1.1 million of public money, UK's Norfolk Open Link provides outdoor Wi-Fi coverage using mesh access points mounted predominantly on streetlights around the city, with a coverage area up to 30 square kilometers. Public-sector workers will be able to access the system at speeds up to 1Mbps and organizations including health, education, and emergency services will be considering a range of projects to help evaluate the network. The project is not allowed to compete with commercial broadband providers; the speed at which the general public may connect is rate limited to 256Kbps. Open Link will be extended to twenty rural locations in the district of South Norfolk.

- Telecommunications-cost avoidance (e.g., automated meter reading)
- Revenue-generating applications (e.g., congestion charging, parking meters)
- Field workforce productivity (e.g. field inspectors, public works crews)

"W2i estimates that local governments in Europe could yield in excess of 15 billion euros annually through government workforce productivity improvements and reduction of recurring telecommunication costs with these infrastructures," said Daniel Aghion, W2i Executive Director.

For example, the City of Minneapolis (pop. 388,000) analyzed potential cost savings from shifting more than 200 workflows over to a citywide broadband-wireless network, allowing it to commit $1.2-million (over 10 years) in anchor tenancy to its private-sector service provider. Riverside, California (pop. 305,000) is committing more than $1 million in anchor tenancy over five years by leveraging its citywide Wi-Fi network in similar fashion.

"The more that governments can do to use the wireless services, the more revenue they will provide the installer of the wireless capability and the faster infrastructure can be built out," said Todd Ramsay, General Manager, IBM Global Government Industry. "That's the equation you want—not so much public funding and installation of networks but public usage so that the private suppliers will be incented to put that capability out there."

Along the way, government can serve as both a user and a facilitator to bring the wireless business model to fruition. For example, congestion charging in the center city not only provides a revenue stream back to the city, it can further enable security cameras in high-crime areas and for monitoring illegal parking. Anchor tenancy agreements can ensure sustainability through purchasing of capacity in a joint public-private partnership.

As facilitators, government can bring various parties together to use the network. Whether it's Facebook, YouTube, and games for young people, or grandparents downloading pictures of the kids, "once you get it going, local residents will buy it to connect because they find the cost is such that it is very convenient," Ramsay said. "Sometimes you don't know that they want it until they start using it."

Conclusion

For the time being, a pervasive apprehension about what cities can and cannot attempt is likely to continue in Europe. In January 2008, the Dublin city council decided to shelve its project to offer free citywide Wi-Fi, at a cost of 27 million euros, because it would run counter to EC state-aid rules.

These rules may do more to hinder the efforts of cities to react to the knowledge-based global economy and to cope with market failure while simultaneously protecting incumbents. The worst outcome is a stifling of European communities' competitiveness—even as some countries meeting in November 2007 at the World Radiocommunication Conference (WRC) in Geneva spoke of national broadband speed in Gigabits-per-second.

How do we turn the corner? Clearly, movement toward more flexible EC rules will be needed. The European Commission's position as a whole is not entirely clear. Is the department responsible for regulating competition simply at odds with the department facilitating infrastructure? Shouldn't local governments be free to organize demand and determine which user groups, businesses and institutions want to get on board? Learning from the City of Prague, Bologna is pursuing applications and building a business model that could support public access down the road. Perhaps a next step is greater clarification—and improved communication—from the EC about how cities can construct models that meet regulatory approval.

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