GL BAL FORUM

Shaping the Future

2010

ICT FOR AN EMPOWERED SOCIETY

A Smart and Innovative world

Proceedings

Monday, November 8th, 2010
Tuesday, November 9th, 2010

Marvin Center
George Washington University
Washington DC

ITEMS INTERNATIONAL

FONDATION SOPHIA ANTIPOLIS

THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON DC

The Global Forum's proceeding represents the occasion to address some warm words of thanks to all those who contributed to make this 19th edition of the Global Forum a special and successful event.

The Global Forum 2010 took place on November 8th and 9th in Washington DC, USA, at the Marvin Center of the George Washington University. The Global Forum in Washington has been a full success with more than 350 high-level delegates from 30 different countries from the 5 continents who attended the sessions of this high-profile think-tank.

We are most proud to say that nineteen years of intensive networking and international cooperation have made the Global Forum an internationally recognized and important event for business and political leaders and experts from across the globe. We express our gratitude to all those many experts who helped making the Forum a growing success.

The Global Forum 2010 has been organized in partnership with the George Washington University, the support of the Embassy of France in Washington, the US Department of State and the US General State Administration. We would like to express our sincerest thanks to all of them. A successful event needs a strong dedicated team working behind the scenes and we would like to take the occasion to express our sincerest thanks to our friends from the US who did an excellent job.

Special thanks to Professor Michael Stankosky who has been a reliable and continuous supporter of the Global Forum 2010.

An event like the Global Forum would not have been possible without the vision and commitment of its sponsors. This nineteenth Global Forum has been organized with the special support from a number of corporate partners and we would like to deeply thank

Our partners, which are:

> the European Commission, George Washington University and the Sophia Antipolis Foundation

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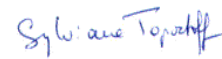
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A very special thank you to everyone who helped make sure the Global Forum 2010 was a success – notably, all our panel chairs, moderators, speakers and participants.

We are counting on all of you as global partners and friends to carry on the vision of the Global Forum to shape the future together and look forward to seeing all of you at the twentieth Global Forum. In the meantime thank you again for your continuing support and keep on networking!

Sébastien Lévy
Vice-President of the Global Forum

Sylviane Toporkoff
President of the Global Forum

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Chair & Moderator: **Sylviane Toporkoff**, President, Global Forum, Founder & Partner, Items international, Professor at the Institute of European studies, University of Paris, France
Sébastien Lévy, Vice President Global Forum / Shaping the Future & Partner Items International, Administrator Silicon Sentier, France

Keynote Speakers:

Steven Lerman, Provost and Executive Vice President for Academic Affairs, George Washington University

Paul H. Grossman, Jr., Director of International Trade and Investment, Virginia Economic Development Partnership, USA

Bernard Benhamou, Delegate on Internet Usage, Ministry of Research and Higher Education**,** France

Beatrice Covassi, Counselor for the Digital Agenda, European Union Delegation to the United States of America, European Union representing *Robert Madelin*, Director General DG INFSO & Media, European Commission

Chair: **David Gross**, Attorney at Law, Wiley Rein LLP, USA

Speakers:

Anne Altman, General Manager Global Public Sector IBM, USA

Kathryn Brown, Senior Vice-President Public Policy Development & Corporate Responsability, Verizon Communications, USA

Jose W. Fernandez, Assistant Secretary for Economic, Energy and Business Affairs, US Department of State, USA

Francisco Garcia Moran, Director General, DG Informatics-DIGIT, European Commission

Gabrielle Gauthey, Executive Vice President Global Government & Public Affairs, Alcatel-Lucent, France

Edward P. Lazarus, Chief of Staff Federal Communications Commission FCC, USA

Chairman Jon Leibowitz, Federal Trade Commission-FTC, USA

Yasuhiko Taniwaki, Division Director, ICT Strategy Policy Division, Global ICT Strategy Bureau, Japan
Smart Cloud Strategy in Japan

Chairman Konrad von Finckenstein, Canadian Radio Television and Telecommunications Commission- CRTC, Canada

Moderator: **Jim Baller**, President at the Baller Herbst Law Group, P.C, USA

Speakers:

> **Johnathan Adelstein,** Administrator at the US Department of Agriculture, Rural Utilities Services Program, USA
> *America's National Broadband Policy*

> **Michael Bartholomew,** Director of the European Telecommunications Network Operators' Association - ETNO, Belgium
> *Europe's Digital Agenda*

> **Gabrielle Gauthey**, Executive Vice President of Global Government & Public Affairs, Alcatel-Lucent, France
> *Broadband: Ready to Invest? Disruptive Changes and New Investment Models*

> **Mark Crisson**, President and CEO of the American Public Power Association - APPA, USA
> *Electric Utilities Offering Telecommunications Services to Communities*

> **Thomas J. Sugrue,** Vice President of Government Affairs, T-Mobile USA, Inc, USA
> *Mobile Broadband in the US*

> **Thierry Zylberberg,** Executive Vice President in charge of Strategic Partnerships & General Manager of the Health Line of Business at France Telecom, France
> *eHealth: Opportunity for Broadband Development*

> **Latif Ladid**, President of the IPv6 Forum; Chair EU IPv6 Task Force; Emeritus Trustee Internet Society, IPv6 Forum, Luxembourg
> *Cloud Computing, Internet of Things*

> **Steven Adler,** Director of IBM Data Governance Solutions, IBM, USA
> *Information Governance*

Rapporteur:

> **Helena Lindskog**, CEO HelDag AB; Professor Linkuping University, Sweden

Chair: **Denis Gardin**, Senior Vice President of System Design Centre and Cyber Security Solutions, Cassidian, an EADS Company, France

Moderator: **Michael Stankosky**, Professor of Engineering Management & Systems Engineering; editor emeritus vine "Journal of information and knowledge management systems", George Washington University, USA

Speakers:

Jeff Brueggeman, Vice President Regulatory Planning and Policy, AT&T, USA
Main Challenges to Improve Security and Safety

Dennis Carlton, Business Development, Strategic Planning, Biometrics, IBM, USA
Doing More with Less - A Strategy for Improving Trust in Identities in an Era of Tight Budgets

Willam Piatt, DAA Technology Strategy Office of Government-Wide Policy, General Services Administration - GSA, USA
Need for a Global Privacy Bill of Rights

Joe Jarzombek, Director for Software Assurance, National Cyber Security Division, US Department of Homeland Security, USA
Cyber Security Hygiene for Software that Enables our Digital Society: Mitigating Supply Chain Risks

Thomas Flynn, Director of Sales & Marketing for Enterprise Security, Gemalto North America, USA
Authentication in the Cloud – Breaking Down the Dilemma of Compromising Security Vs Convenience

Gerald Santucci, Head of Unit "Networked Enterprise and RFID", DG INFSO, European Commission
Security with RFID

Virgiliu Stan, General Manager at Items International for Eastern Europe, Tirgu-Mures Digital City Strategy Consultant, Romania
The Digital Strategy of Tîrgu Mureş

Philippe Laflandre, Head of the EADS Corporate Trust Center -- ECTC, EADS, France
Secure Collaboration: How Global Defense & Aerospace Competitors Collaborate

Commentator:

Julie Ryan, Associate Professor and Chair, Department of Engineering Management and Systems Engineering, George Washington University, USA

Moderator: **Giorgio Prister**, President Major Cities of Europe, Italy
Local Government Strategies for Citizen Empowerment

Speakers:

Danilo Broggi, CEO Consip S.p.A, Italy
ICT and Competitiveness

Jean-François Junger, Head of Sector ICT for Government and Public
Services, DG INFSO & Media, European Commission

Tom Wilkey, Executive Director United States Election Assistance
Commission, USA
Innovations in the Electoral Process

Anja Wyden Guelpa, State Chancelor State of Geneva, Switzerland
Walking on our Hands, or How to Secure a Transactional IT System

Mark Cleverly, Director Strategy Global Government Industry, IBM, USA
The Planet is Becoming Smarter

Chair: **Sharon Nunes**, Vice President Smarter Cities - Government Industry Strategy & Solutions, IBM, USA

Moderator: **Hugo Kerschot**, Founder of IS-Practice, Belgium

Speakers:

Jeremy Millard, Senior Consultant at the Danish Technological Institute, Denmark
Everyday eGovernment

Madeleine Siösteen-Thiel, Senior Program Manager Services & IT Implementation Department, Swedish Governmental Agency for Innovation Systems, VINNOVA, Sweden
RTD eGovernment

Guido Marinelli, Managing Director of Nestor; Lecturer at the Tor Vergata University of Rome, Italy
Electronic Credentials and eID

Brig. Gen. Pasquale Lavacca, Gen. Head of III Reparto (Technology Department) Headquaters, Arma dei Carabinieri, Italy &
Gianluigi Me, Major, Arma dei Carabinieri, Italy
e-Logistic Governance – The Carabinieri SILAC Project

Samia Melhem, Senior Operations Officer at the Global ICT Department, World Bank Group
The World Bank's Involvement in eGovernment Projects

Robert Bell, Executive Director, Intelligent Community Forum - ICF, USA
Collaborative Government, Case Study

Alan Shark, Executive Director, Public Technology Institute - PTI, USA
How are Small and Medium Sized Cities Embracing e-Gov Services and Beyond?

Rapporteur:

Jean-Pierre Chamoux, Professor, Université Paris Descartes, France

Chair: **Francisco Garcia Moran**, Director General, Directorate General 'Informatics' DIGIT, European Commission

Moderator: **Angela Russo**, Head of International Affairs, Consip S.p.A, Italy

Speakers:

Gian Luigi Albano, Head of Research Italian Public Procurement Agency, Consip, Italy
Measuring "Created Value" through Public Procurement

Radu Bogdan Savonea, Director of the Office of State, Ministry of Communications & Information Society, Romania
The Public Acquisitions Electronic System (SEAP)

Chong-Suk Kang, Procurement Consul, Public Procurement Service -PPS, Korea
Innovating Public Procurement through Korea On-line E-Procurement System

Kathleen Turco, Associate Administrator Office of Governmentwide Policy- General Services Administration- GSA, USA

Debra Woodard, Director Logistics Systems, US Department of State, USA
Integrated Logistics Management System at Department of State

Dora Ruiz, Head of Monitoring Department, ChileCompra, Chile
E-Public Procurement in Chile: Stronger Institutions

 Rapporteur:

Helena Lindskog, CEO HelDag AB ; Professor Linkuping University, Sweden

Chair & Moderator: **Andrew Lipman**, Partner and Head of Telecom Group, Bingham
McCutchen, USA

Speakers:

> **Brent Olson**, Assistant Vice President - Public Policy, AT&T, USA
>
> **Patricia Cooper**, President Satellite Industry Association - SIA, USA
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> **Julie Veach**, Office of General Counsel Federal Communication Commission
> – FCC, USA
>
> **Richard S. Whitt**, Head of Policy, Google, USA
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> **Reinhard Wieck**, Managing Director at Deutsche Telekom, USA
>
> **Leonidas Kanellos**, President EETT (the Greek National Regulatory
> Authority), Greece
>
> **Maria Tsakali**, Scientific Officer at the DG INFSO D3 "Software & Service
> Architectures and Infrastructures", European Commission
>
> **Sébastien Bachollet**, Vice Chair ALAC; Honorary President ISOC, France

Rapporteur:

> **Jean-Pierre Chamoux**, Professor, Université Paris Descartes, France

Moderator: **Alan Shark**, Executive Director Public Technology Institute - PTI, USA

Speakers:

Richard Lechner, Vice President Energy and Environment, IBM, USA
Sustainability on a Smarter Planet

Peter Thomond, Senior Consultant for the Imperial College, United Kingdom
Enabling Technologies for Environmental Sustainability

Thierry Van Landegem, Vice President Global Operations, Alcatel-Lucent Bell Labs, USA
Green Touch™ Initiative: A Five Year Quest to Achieve Sustainable Networking

Ingrid Götzl, Head of Cabinet of the Executive Councilor in the Rank of Regional Minister for Urban Development, Traffic and Transport, Austria

Steve Evans, Director of Corporate Services, Newcastle Upon Tyne City Council, UK & **Anita Lower**, Deputy Leader Newcastle Upon Tyne City Council, UK
Newcastle: A Green Case Study

Kevin Kampschroer, Director Office of Federal High-Performance Green Buildings, Office of Governmentwide Policy, U.S. General Services Administration, USA
High-Performance Buildings as Federal Priority

Timothy Miles, Associate Director, Office of Technology and Electronic Commerce, Manufacturing and Services, US Department of Commerce ITA, USA
Why is Green Important? Impact of ICT on the Environment and Energy Use

Alyssa Quarforth, Program Manager Commercial Properties ENERGY STAR Buildings Program, U.S. Environmental Protection Agency - EPA, USA
ENERGY STAR® for Data Centers

Adam Braunstein, Research Director, Wintergreen Research, USA & **Calvin Braunstein**, Chairman & CEO/Chief Research Officer, Robert Frances Group, USA
GreenWay Collaborative: Knowledge Base and Research Report

Moderator: Madeleine Siösteen-Thiel, Senior Program Manager Services & IT Implementation Department, Swedish Governmental Agency for Innovation Systems, VINNOVA, Sweden

Speakers:

Commissioner Thomas J. Rosch, Federal Trade Commission-FTC, USA
ICT and Some Consumer Protection Issues

Beatrice Covassi, Counsellor for the Digital Agenda, European Union Delegation to the United States of America, European Union
European Union Digital Agenda

Robert Morin, Secretary General Canadian Radio-television and Telecommunications Commission – CRTC, Canada
No one left behind-Digital Society

Martin Kohn, Associate Director Healthcare Analytics, IBM, USA
Empowering Healthcare Consumers

Ulf Dahlsten, Principal Adviser DG INFSO & Media, European Commission
User-Driven Innovation of New Products and Services

Chair: **Bror Salmelin**, Adviser to the Director ICT addressing Societal Challenges, DG INFSO, European Commission
Participative Innovation for Collaborative Society

Moderator: **Jay E. Gillette**, Professor of Information & Communications Sciences, Center for Information & Communication Sciences, Ball State University, USA
Modern Open Innovation in Many Voices

Speakers:

Anthony DiMaso, Vice President Strategy, Development & Planning, Verizon Communications, USA
Concept of Innovation

Kent Bake, Vice President and Director of Standards and IPR, Government Affairs, Qualcomm, USA
An Open Innovation Model

Charlotte Brogren, Director General Swedish Governmental Agency for Innovation Systems, VINNOVA, Sweden
Open Innovation from a Swedish Point of View

Margot Dor, Director Partnerships & EU Affairs, European Telecommunications Standards Institute – ETSI, France
Standards and Open Innovation

Eric Legale, Managing Director Issy Media, City of Issy-les-Moulineaux, France
What Does Innovation Mean for a City Like Issy?

Denis Rousset, Director Public Affairs Department, ST-Ericsson, France
An Open Innovation Approach as an Enabler for new Business Model in ICT

Bruno Le Dantec, Representative EIT ICT Labs Paris Node Manager, INRIA
EIT ICT Labs -- The ICT Innovation Catalyst for Europe

Sofia Adjas, European Affairs Manager Universcience – Cité des sciences et de l'industrie, France
Ways Science Museums and Science Centres are Opening Up to Innovation

Sladjana Cabrilo, Assistant Professor University Educons / Faculty of Business in Services, Serbia
IC -Based Innovation Gap Assessment For Future Knowledge and Innovation Driven Economy

Adrijan Božinovski, Assistant Professor at the University American College Skopje, Macedonia
Brain Machine Interface: A 21st Century Dynamic Technology

Commentator: Edith Cresson, Former French Prime Minister, France

Chair: **Elena Bonfiglioli**, Director Corporate Citizenship, Legal and Corporate
               Affairs, Microsoft EMEA, Belgium

Moderator: **Daniel Hamilton**, Austrian Marshall Plan Foundation Professor; Director
               Center for Transatlantic Relations; Executive Director, American Consortium
               on European Union Studies, USA

Speakers:

               Patrice Cristofini, Vice-President Partnership and Strategic Alliance, Orange
               Healthcare, France
               Mobile Health

               Linda Zecher, Corporate Vice President Public Sector, Microsoft Corporation,
               USA
               Citizens Want Access to Their Health Information

               Catalina Ionescu-Dima, Policy Officer, ICT for Health Unit, DG INFSO,
               European Commission
               EU eHealth Agenda and Transatlantic Cooperation

               Michèle Thonnet, e-Health Official Representative of the French Ministry,
               France
               eHealth in France

Chair: **Maurizio Talamo**, Professor Department of Mathematics Università degli Studi di Roma "Tor Vergata", President Laboratorio Nestor, Italy

Speakers:

Bartolomé Arroyo-Fernández, Acting Head of Unit "Networked Media Systems", European Commission
The Future of "Networked Media": A Research Perspective

Linda Kinney, Motion Picture Association of America - MPAA, USA
Copyright Theft and the Digital Economy

Laszlo Horvath, President of Active Media, USA
Can you afford not to be found? Which model wins in the online video space?

Letteria Fassari, Researcher at the DISS (Department of Social Science) at the Faculty of Sociology, Sapienza, University of Rome, Italy
Platform As Play-form -- A Lesson From Simmel

Sarah Boerner, Head of Marketing at Human Web
The Invisible Threat

Yianna Vovides, Director of Instructional Design Center for Innovative Teaching and Learning, George Washington University, USA
Social Video: Its Role and Impact for e-Teaching – From A Higher Education Perspective

Alfredo Ronchi, General Secretary EC Medici Framework, Italy
The Forth Screen

Keynote Speaker:

> **Melanne Verveer**, US State Department Ambassador-at-Large for Global Women's Issues

Panelists:

> **Beatrice Covassi**, Digital Agenda Counselor, Delegation of the European Union to the USA

> **Ruth Milkman**, Chief Wireless Bureau of Federal Communications Commission, USA

> **Sharon Nunes**, Vice President Smart Cities Strategy & Solutions, IBM

> **Jacqueline Ruff**, Vice President International Public Policy and Regulatory Affairs, Verizon

> **Kathleen M. Turco**, Associate Administrator for the Office of Governmentwide Policy, General Services Administration

> **Sue Watts**, Head of Americas Outsourcing Services, CapGemini

> **Linda Zecher**, Corporate Vice President Worldwide Public Sector, Microsoft

> **Ellen Blackler**, Executive Director-Public Policy, AT&T

> **Dr. Rachelle S. Heller**, Professor, Computer Science Department; Associate Dean for Academic Affairs, Mount Vernon Campus

> **Edit Herczog**, Member, Committee on Industry, Research and Energy of the European Parliament

> **Elena Bonfiglioli**, Director CSR, Microsoft Europe

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 and South 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. 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.

2010 **ICT for an Empowered Society – Washington DC, USA**

2009   ICT & The Future of Internet – Bucharest, Romania

2008   Collaborative Convergence – Athens, Greece

2007   Global Convergence 2.0 – 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 - US 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 2010 took place on Monday, 8th and Tuesday 9th, November, 2010, in the Marvin Center of the George Washington University in the United States of America. It's the fourth time in its 19-year history that the event took place in Washington DC.

Once again, the event attracted more than 350 high-level delegates from the world of politics, the business community, and academia for a two day active discussion on latest achievements and ongoing developments in the world of ICT. 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 fundamental questions related to the topic of this year's Global Forum: **ICTs for an Empowered Society – A Smart and Innovative World.**

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 http://www.items-int.eu/. Do not hesitate to contact ITEMS International if you wish 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 two conference days. The summaries of the presentations made during the Global Forum 2010 are listed in chronological order corresponding to their sequence in the final conference programme, as listed in the beginning of the present document.

DAY 1 – MORNING – PLENARY SESSION

Executive Summary
(by Prof. J.-P. Chamoux)

Chaired by Mrs. Sylviane Toporkoff, founder of the Global Forum, this XIXth session started with the welcome address of Prof. Steven Lerman, executive VP of the George Washington University, hosting the Forum for the second time. Paul Grossman, Director of the Commonwealth of Virginia economic development partnership, recalled that his State's sponsorship for the Global Forum flowed naturally from the fact that Virginia hosts so many of the leading American IT professionals and data centers through which at least one half of the world internet traffic flow in and out of the US.

Bernard Benhamou, Delegate in charge of Internet use for the French Government, recalled that with a growing social and economic reach, European mobile data users now play a major role for economic recovery. He hence stressed that public trust on IT systems and processes is key to the so called "new" economic development. Speaking for the EU Commission, Mrs. Beatrice Covassi summarized the digital agenda priorities selected by the Union among which cloud security and health systems are ranking high given the aging population of Europe. Similarly, Executive VP of Alcatel Lucent Gabrielle Gauthey stressed the importance of trust and privacy issues when rolling out an expanded infrastructure for broadband.

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SYLVIANE TOPORKOFF, President of the Global Forum & Founder Partner Items International, warmly welcomed the participants and opened the 19th edition of the Global Forum / Shaping the Future.

I am so pleased to welcome all of you for the 19th edition of the Global Forum / Shaping The Future in which more than 300 participants from more than 28 countries are contributing. Being here in Washington DC, for the Global Forum seems a right time due to the current global economy and the different political agendas and issues. Information Technology takes a critical role in those issues.

You may be surprised that so many high-levels expert speakers will intervene during the two day Think tank in a relatively short amount of time. However, this format, over the years, has proved that it allows a great amount of thought leaders to participate and to seek out for more information and networking opportunities.

Thanks to the steering committees, the program is very challenging.

A special thank to the chairs, moderators and speakers who have collaborated in order to deliver high level presentations, informative as well as punchy as well as the sponsors.

I give the floor now to my partner Sébastien Lévy, to Steven Lerman, Provost and Executive Vice President for Academic Affairs at George Washington University who has been a wonderful and efficient support to us and have been a great help in building this 2010 Global Forum edition; to Paul Grossman, Director, International Trade and Investment, Virginia Economic Development partnership VEDP, who has been involved at the very beginning and helped also us a lot along with Jenee Andreev, the International Trade Manager of VEDP; to Bernard Benhamou, Delegate on Internet Usage Ministry of Research and Higher Education, France who is making us the great pleasure and honor to be with us in WDC and to Beatrice Covassi which has just been nominated Digital Agenda Counselor at the European Union Delegation to the United States of America. She is delivering her welcome speech on behalf of Robert Madelin, Director General, General Directory Information Society & Media at the European Commission.

SÉBASTIEN LÉVY, Vice-President Global Forum/Shaping the Future and Partner Items International gave at his turn the following welcome:

Good morning distinguished guests, ladies and gentlemen, dear friends, welcome to the Global Forum 2010.

I am very happy to see so many of you in this room. It is with great pleasure and, to be honest, with a little bit of pride that I extend this warm welcome to all of you. It seems that this year, Global Forum will once again show the world why it is called "the Davos of IT".

The continuous success of the Global Forum is due to the support and loyalty of our sponsors. The Global Forum' success is also due to the work of our collaborators and members of the Steering Committee all around the world.

In fact, the Nineteenth Global Forum returns to one of its "birthplaces"; Washington. Since its beginning in 1992, this event has definitively grown up. Nineteen Years of intensive

networking and international cooperation has made the Global Forum an important event for business and political leaders as well as experts from across the globe.

Ladies and Gentlemen, now it remains for me to wish you a pleasant Global Forum; full of fruitful discussions, interesting presentations, debates and sharing of ideas.

STEVEN LERMAN, Provost and Executive Vice President for Academic Affairs at George Washington University in WDC, USA delivered a short and appealing welcome address.

First of all it is my great pleasure to welcome all of you to George Washington University where we are pleased and proud to be able to put this Global Forum. I bring greetings to you from President Steven Knapp who was unable to greet you here today.

I recently arrived here at GWU after 35 years on the faculty as a MIT and so my own research area in fact is very much integrated into ICT, it is in the area of the applications of competition and Communication Technology and education.
An event such as this one enables our University to fulfill one of its major goals to the century which is addressing the challenges and opportunities in a technology oriented and globally focused Society.

ICT brings together the world in a way that I think a generation or two generations ago very few could have envisioned. It presents tremendous opportunities for economic development and grows and of course more than shared challenges particularly in the domain of Cybersecurity providing reasonable access to underserved populations and determinating how different nations will collaborate on protocols and details of communication.

The idea being addressed in this forum over the next 2 days are actually quite significant , the citizens in the United States, in Europe, Asia or the developed economies growing economies and those economies that are struggling and left behind.

We need to address those issues in ways that needs to combine needs of an ever interlinked society and find ways to maximize the advantage of ICT and minimizing its risks and dangers As the developing world begins to move more of its physical infrastructure to rest upon the technology we develop, the risk of cybersecurity of course has grown tremendously.
As we move to smart grids, smart transportation systems, intelligent buildings and many other features on a modern developed economy we challenge to figure out the best ways to secure those to get unintentional or intentional damages.

In the developing world they are enormous opportunities for the use of ICT. the ability of people in rural areas to get access to information, to markets to built products and services that can be delivered in timely ways are extraordinary!!!.

I was at a meeting where I heard wonderful stories such as how farmers In Ruanda used their cellular phone to get information about local markets so as to determine when to bring those crops to markets. In remote villages in Mexico, one university is delivering spectacularly good education opportunities to places that previously were denied them
So all these opportunities depend some way to how we choose to evolve the technology being discussed here.

My pleasure to have you here, I look forward to hearing much about this conversation and welcome to George Washington University.

PAUL GROSSMAN, **Director International Trade and Investment, Virginia Economic Development partnership VEDP**, USA

After this brilliant welcome of Sylviane Toporkoff gave the word to Paul Grossman with a question: Virginia has constantly be ranked at the Top US state in which doing business. What does that means to the IT sector?

Welcome! I am delighted you are taking time from your busy schedule to join this exciting Global Forum.
My compliments to Sylviane and the rest of the organizers for putting together a very robust program.

To try to answer to the question that Sylviane is posed, really is a question of why the State of Virginia is sponsoring this Global Forum.

And frankly there are only two reasons that one might give. Normally when an organization sponsors a conference such as this, it is to unveil a new technology, to approach you as participants, as an audience, to try to sell products and services.
That is certainly not the case this morning.

The other reason that an organization might sponsor a Forum such as this is because the organization is a recognized leader in the field. And, that is the case. Virginia is a leader in the ICT sector and I would like to share with you   just for a few moments some of those accolades that we have received that you may be not be aware of.

As Sylviane said, Virginia has consistently been ranked in the top of the United States' states in terms of a business location. CNBC just rated Virginia second in the nation after ranking us first a number of years. Forbes.com just a month or so ago ranked Virginia second for doing business after having just ranked Virginia number one for four years in the row.

I think that is more appropriate for this group this morning to hear some of the findings of a study that was completed in 2008 and is called the New Economy Index which is certainly the focus of this conference this morning.

Overall, in that study Virginia ranks seven of the US 50 states.

However, in terms of Information technology professionals Virginia ranks number one.
In terms of the fastest growing firms in the ICT sector, Virginia ranks second
In terms of Internet domain names, Virginia ranks second
In number of high tech jobs Virginia ranks third
In the in migration of knowledge workers Virginia ranks seven

For technologies in our schools, K12 and university we rank seven and in our broadband telecommunications we rank eight. Indeed, Virginia receives national and international acclaim in the areas of Information technology systems development, software development. A rising and growing fields for us are data center operations and telecommunications.

Of course, this morning we are sitting in a district that uses to be part of Virginia. Many important decisions in terms of funding and programs and new technology developments are made here in the district.

Virginia sits just across the river and this proximity is a leading reason why technology companies flock to the Northern Virginia area as we call it and why companies such as Computer Science Corporation and SAIChave moved their headquarters to Virginia just in the past couples of years. Virginia has the largest concentration of federal y funded R&D facilities in the nation. We have 14 such R&D facilities: the department of homeland security, the department of defense, and the Pentagon reside in Virginia. All of these play a critical role to attaining our success in the ICT sector.

Something you may not be aware of. More than half of the world's daily Internet traffic flows through Virginia. Virginia has one of the nation's most competitive tax exemptions for the ICT sector, particularly in the area of data center operations. We offer exemptions for servers that include servers, routers, chillers, generators and the enabling software for these data centers. No other state has this combination of assets.
More than 25000 doctoral scientists and engineers reside in Virginia. More than in the other state in South East.

And we believe that they are more security cleared people living and working in Virginia than in the other states

We do know that each year 15000 trained military personal separate from the military and enter our workforce which makes for a very desirable workforce in the ICT sector.

Virginia has one of the highest concentration of high technology industry in the nation with nearly 16 000 businesses and according to Cyberstate (a ranking of the States in US with regard to cyber security related issues). We have the highest concentration of high technology workers for 2007 2008, 2009 and 2010.

Virginia is one of the most connected states in the country.
With 18 million access lines, almost 3 million high speed lines and more than a million miles of Fiber optic cables

I can go on and on describing the current accolades Virginia is proud to be associated with. There, are a lot of new ICT projects that are currently being developed across the Commonwealth and there are a lot more that are in the conceptual debate and design phase.

I hope to meet many of you throughout the next couple of days.

So, welcome to the 2010 Global Forum I wish you a great couple of days and I invite you to learn more about what is happening with regard to tomorrow's technology currently in development in the State of Virginia.

Thank you.

BERNARD BENHAMOU, **Delegate on Internet Usage, Ministry of Research and Higher Education, France and formerly in charge of the European Ministerial Conference on the Internet of the Future,** delivered a concise and warm open address.

It's a double pleasure to be here especially in this University being in charge of internet and technology questions at the Ministry of Research and Higher education in France.

Since we are talking about technologies and their impact, we, European do see the trends that we are facing as an opportunity; opportunity for research, opportunity for economics and opportunity for international bonds on those issues.

Why? Simply because we are facing a important changes in the way technologies are used. We are facing the rise of the mobile Internet, we have been talking about that heavily during the last few years and we see it now with the global economies of mobile services. which is simply astounding. In 2013, the figures for the market of mobile applications are estimated at €15 billion. And with just in France for ex, the number of users of mobile internet has tripled just in the current year passing from 5 to 15 million users.

Europe is obviously one of the key regions and it is a pleasure for us to see how mobile users is developing just as we talk with more than 600 hundred million users of mobile phones in global continent of Europe and more than 300 million 3G users.

With mobile devices the Internet comes closer to the citizens, closer to their daily lives and their most intimate activities. So, with that we are seeing many opportunities and many questions rising on privacy, on the architecture of privacy in our societies. Here in the US, in Europe and in all the countries using those technologies. and we are more and more involved in the question of how maintaining and fostering trust because we consider that trust will be the key element for that sector, the cornerstone of the development of the economies of this sector.

Beyond the mobile Internet, as Mr. Lerman was mentioning soon there will be buildings, there will be cities, that will be connected to the Internet. That's what we call in our language the "Internet of Things", I see here European representatives with whom we have worked closely on those issues and this will be other challenges for all the industries and for all the countries involved in those technologies.

What we consider important for the future is creating new bonds, new alliances on those issues and especially transatlantic alliances, because beyond neutrality which has been intensely discussed in both sides of the Atlantic, beyond privacy issues there will be new grounds that we will face in the future and we will need to discuss those issues together, because if there is no trust in that Society we are building then all the stakeholders will be at risk.

That's why Europe is so confident in the link and in the bonds with the US and with many other key actors in that field to, because the Internet of the Future will be based on that trust. I will be happy and I look forward to have the opportunity to talk about those issues here during those two days.

BEATRICE COVASSI has recently being appointed as **Digital Agenda Counselor at the EU Delegation in Washington DC**. **She represents in this session Robert Madelin the Director General for Information Society & Media at the European Commission** in Brussels.

Beatrice Covassi delivered a very optimist welcome:

"I am thrilled and honored to be here. I took up duty at the EU delegation in Washington on 15 October and it is a timely and great opportunity to be able to meet so many key ICT actors from the public and the private sector gathered all in one place!

I am especially honored that my first official task is to bring you a warm welcome on behalf of Robert Madelin - Director General for the Information Society and Media at the European Commission.

Let me share with you a few thoughts on our current work on the Digital agenda, in the perspective of transatlantic and global cooperation.

Why a Digital Agenda
Why do we need today a Digital agenda? What has changed? Two main elements:
1) ICT was considered until recently as a sectoral policy, mainly in the technical domain. Today, the Internet has become the electricity of the 21st century. And ICT is a fundamental component in most human activities.

2) In the past the focus of the public discourse on ICT tended to be primarily on technology, its potential, its capacity, the search for killer applications. Today, as our societies have grown digital, the focus is on what people can and want to do with it, is on empowering the people using that technology.

This is why Europe has adopted a wide-reaching Digital Agenda which touches upon all aspects of society. We believe that a virtuous circle of growth, innovation and productivity can only be triggered if we acknowledge the fact that we are all actors in the digital economy and society.

Stronger need for Global Cooperation
The information society has always worked in a vision of global cooperation and governance - a vision the European Commission shares with the Global Forum, which has been supported and encouraged since its inception.

Along the years we have established strong relationships with the US, but also with other partners around the globe, on ICT research cooperation, regulatory cooperation in the area of telecom and spectrum policy and also on Internet Governance. And we have done this both bilaterally and in multilateral fora.

Today, both technological change and global challenges - such as the environment, security, ageing - require us to strengthen this cooperation even further.
This is apparent, for instance, if we reflect on the very concept of the cloud – which knows no jurisdictional boundaries but within which territorial jurisdictions must be able to deliver the security, trust and privacy that each business and each citizen needs.

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Current priorities for EU-US
Cloud governance and security are therefore common challenges which feature prominently on our transatlantic agenda.

On security, and in particular cybersecurity, we need to do more in terms of joint efforts to ensure not only the resilience of the networks but also to increase the trust of citizens and businesses in the system and intensify the fight against cybercrime. We hope to build more cooperation with the US on this front.

Let's also think of health. Our populations are rapidly ageing – in Europe alone the number of over 85 is expected to triple by 2050.

ICT for Health is therefore a top priority for the future digital society. This is reflected not only in the EU Digital Agenda but also in the Innovation Union initiative which envisages to launch already next year a first pilot European Innovation Partnership on Healthy Ageing.
In December, we are planning to sign with the US here in DC a Memorandum of Understanding on eHealth – setting out the framework for cooperation, including on the interoperability of electronic health records.

I have given just a few examples of the challenges ahead. The message is clear. Science and innovation are emphatically for society – and this means for all. There is no big win for ICT without digital inclusion on both sides of the Atlantic.
Empowerment - of people, communities and businesses- is the real trigger for economic recovery and for innovation.

On Robert's behalf I want to wish all success to this 2010 edition of the Forum focused on empowerment and innovation.
As for me, I look forward to working with you during my posting here on strengthening our dialogue on ICT and building together the strong and effective transatlantic and global digital agenda that we all need. Thank you."

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DAY 1 – MORNING – PLENARY SESSION

ICT: A Vision For The Next Generation

Executive Summary
(by Prof. J.-P. Chamoux)

Chairman Jon Leibowitz of the Federal Trade Commission stressed that free and efficient trade requires strong law enforcement chasing harmful behaviors like spams, privacy infringement and the like. Spamming he said mainly comes from a few well spotted sources and available evidence proves that self regulation keeps a fair control of spams and spyware in the US. Assistant Secretary of State Jose Fernandez set the macroeconomic scene for broadband development in the US: quoting major economic IT indices, he sees a typical win-win situation not only in the US but also in less developed areas like Asia. He quoted spectrum management and relationship between IT and power policies as issues to be taken care of during the coming years.

Speaking for the IT industry, Anne Altman from IBM and Kathy Brown from Verizon both confirmed that each of their corporations have gained a clear view of what global industries effectively deliver worldwide. While government spending is under pressure due to the present economic crisis, consolidated IT programs may give momentum for recovery said Mrs. Altman; simultaneously LTE technologies are being rolled out for 2011 with an increased and sustained level of private investment in the US also noticed Mrs. Brown.

Speaking for the Federal Communication Commission, Chief of Staff Ed Lazarus insisted on what he characterized as three interlinked issues of our time: spectrum management, universal funding and broadband roll out. Given the high Federal budget deficit, 18 to 19 b.$ of corporate spending would support public US policies; the universal service Fund 8 to 9 M$ resources may target new means as well. CRTC Chairman Konrad von Finkenstein noted wired and wireless networks already belong to integrated companies in most of Canada he said. Concentration hence raises classical questions of market failure, both for content industries and access, he said.

Director Yasuhiko Taniwaki of the Global ICT Strategy Bureau underlined that only 60% of Japanese homes did subscribe to broadband while 100% do have broadband access, a penetration gap to be filled with smart cloud strategy he said. An analysis echoing Director General Francisco Moran from the Informatics division of the EU Commission, noting that making "every European digital" implies full interoperability of networks and services which is not ready yet.

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As **chairperson** of the session, **DAVID GROSS, Attorney at Law, Wiley Rein LLP,** USA (www.wileyrein.com) welcomed with enthusiasm the keynote speakers. He expressed his pleasure and proud to chair the session 1. David Gross emphasizes the fact that the keynote speakers in the session 1 were all high-level profile speakers from all over the world targeting different issues. Indeed among the keynote speakers, there were senior representatives from the industry and government leaders. David Gross then explained the innovative and interactive progress that the session had adopted that is to say questions asked directly to each keynote speakers who has to answer briefly in order to foster an interactive debate with the audience and among the panelists. David Gross then, explained that the objective of the session was to allow to all of the audience to learn as much as possible by setting up this interactive session.

After this short but efficient introduction, David Gross introduces the first keynote speaker to intervene, **JOSE W. FERNANDEZ, Assistant Secretary for Economic, Energy and Business Affairs, US Department of State,** USA. Senior person responsible in the State department for international economic issues which include communication.

David Gross asked a very challenging question: From your vantage point covering the broad swath of economic issues for President Obama, what do you see as the importance of the ICT sector for economic development?

Given his position Jose W. Fernandez had the possibility to share his unique Global perspective of the interaction of Firm policy, economics and technology.

Mr. Fernandez started by thanking David Gross for his job as chair of the session, he also expressed his thanks to the organizers of the Global Forum. Mr. Fernandez sharply stressed out that the subtitle of the Global Forum "ICT for an Empowered Society captured in a few words the energy, dynamism and importance of the ICT sector. Mr. Fernandez explained in a captivating way that all participants of the Global Forum working in the ICT sector made a critical difference for the World. Mr. Fernandez also underline the fact that event such as the Global Forum are of vital importance and use because it allowed several people from various domains to gather and exchange on the Growth of ICT market and its perspectives. In order to strengthen his point, the Assistant Secretary for Economic, Energy and Business Affairs, US Department of State give us some impressive figures, according to the Economic Energy and Business Affairs Bureau, the Global ICT market spending surpassed 4 trillion US Dollar in 2010, which correspond to 6% of the Global GDP. It is equivalent to 20% of all Global trade. By 2013, Global spending should reach the staggering number of 5 trillion US Dollar. Those perspectives explained why the US Department of State is fully involved in the ICT sector.

In order to illustrate in a concrete way the importance of the ICT market, Mr. Fernandez explained that he is working in Emerging Countries in order to privatize the telecommunication sector to favor its development. Indeed a research conducted by the ITU showed that 10% increases in fix telephone lines increase the GDP by 0.5%. An increase of 10% of the numbers of mobile telephones results in 0.7% a rise of GDP. At the same time a. 10% increase in broadband lines results in a 1.3% rise of the GDP. Mr. Fernandez concluded with those figures that the Growth of the ICT sector results to a growth of the general GDP be it in the USA or all countries over the world.

The promotion of the ICT sector is one of the key to have a strong economic welfare. Promoting ICT equal to create local jobs. Mr. Fernandez then explained that it is a win-win situation because promoting ICT in a country increases its growth but also the growth in other countries as well, this is the reason why the State Department is trying to be involved in 3 ways:

1 – Promotion of Innovation and development. With Business facilitation incentive fund. This fund finances training, information, improvement, capacity building. It increases by 50% compared to the previous year. The US Department of State is strongly involved in the ICT sector and tries also to foster the ICT development in the USA but also in Emerging countries. For ex, after the earthquake in Haiti in January 2010, the Department of State collaborated with the Haitian telecommunication regulator Conatel in order to asset the current situation and plan for the future rebuilding of the Haitian telecommunication infrastructure.

2 – Invention of IT policy and protection of the free flow of information around the world. The US Department of State wants to advance in IT policy around the world. The US Department of State has a proactive role to advance the expansion of broadband connectivity. Completion of the 9th years old fiber optic cable project that include Micronesia. The US Department of State also addresses issues that arise all over the world. For ex. India issued in July 2008 a series of regulation laws which imposed to the firms importing telecoms equipment that 75% of the Indian market to hand over their technology to an Indian manufacturer within 3 years. The importing companies also had to over their source code. India has reasonable reasons to impose those regulations; it was for a question, on national security but for the others countries it appeared as protectionism. The US Department of State collaborates with the industry representative in order to address those security concerns and to continue to offer a viable and welcoming environment for the ICT sector.

3 – The US Department of State supports the leveraging ICT to support other sectors, ex. Smart-grid technology. ICT is not a standalone sector. ICT has a great impact in other industries. The US Department of State is particularly involve in the interaction between ICT and energy, a reliable and smart grid play a role in the reduction of gas emission. ICTs allowed to have a better control and efficient of the use of energy. It is one of the key for addressing the energy and environment issue, ICT allows a better use of already existing resources. According to a study leaded by the US Department of Energy, a 100 % penetration of smart grid technology in the US would reduce by 80% the annual CO2 US emission by 2030.

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CHAIRMAN JON LEIBOWITZ, of the US Federal Trade Commission (FTC), was asked by David Gross to share with the audience of the Global Forum 2010 his insight into the privacy and internet fraud issues that the FTC is handling.

David Gross asked the Chairman: "Can you please describe some of the privacy and internet fraud issues you are dealing with? For example, what has the FTC learned from taking a closer look at how individuals act online and how they think about privacy? What have you been seeing in the area of behavioral advertising from a regulatory perspective?"

Chairman Leibowitz started by stating in reaction to the presentation of Mr. Fernandez that the Federal Trade Commission (FTC) has a different but complementary mission to the US Department of State. In order to have truly successful global commerce that benefits all consumers, the FTC must help -ensure privacy protection so consumers are confident when they make transactions online. The FTC must also do what it can to stop internet fraud. Those two tasks are important priorities at the FTC as is true at all consumer protection agencies around the world.

To address these issues, the FTC has adopted two approaches: enforcement and policy. On the enforcement side, the FTC has brought more than 100 cases in the past 10 years involving spam and spyware, including several against major companies like Sirius. The FTC also brought nearly 30 data security actions against companies that failed to maintain a reasonable level of security. - Those actions are critical - without a proper level of security, it is easier for consumers to become victims of identity theft.

As a sign of the changing times, Chairman Leibowitz announced that the FTC led its first enforcement action involving a social networking service - in this case Twitter- for inadequate data security. More data security investigations are currently under way.

Chairman Leibowitz then explained that the FTC is trying to focus its resources where they can obtain the best results, quoting Jeremy Bentham's. "The greatest good for the greatest number". As an example, the Chairman mentioned the FTC's case against Botnet. He compared Botnet to a high-tech plague, which engaged in every harmful and illegal online activity. Botnet was the source of 95% of all spam, which is staggering given that spam comprises 80% of all emails. The FTC also shut down 3FN, a company owned by investors from Russia, but headquartered in San Jose, CA. The FTC managed to stop 3FN with the assistance of others major US agencies, which lead to an impressive 30% reduction in spams worldwide. Today, the fraud cases that the FTC has handled for many years have evolved and moved online.

The FTC is also going after negative option frauds, in which consumers' lack of action is construed to be agreement to purchase a product.

Another approach of the FTC is policymaking, which has been part of the FTC's function since the agency's creation nearly a century ago in 1914. However, the FTC has become more policy-oriented in the last 10 years, first under Robert Pitofsky (during the Clinton Administration) and then under Timothy Muris (during the George W. Bush Administration).

In 2009, the FTC hosted a series of privacy roundtable with industry representatives. One of the themes that emerged is that consumers do not understand the privacy implications of their online activities, as many data collection practices by businesses are invisible. The current privacy notices do not address the problem, as the vast majority of consumers do not

read them. Based on these findings, the FTC issued a preliminary staff report on privacy at the end of 2010 that suggested:

1) Privacy should be "baked in", that is, companies should incorporate basic privacy principles into their practices;
2) Companies should not collect information that they do not need and should dispose of information they no longer need; and
3) There should be more transparency for consumer choices.

Chairman Leibowitz pointed out that there is industry support for the principles underlying these recommendations, but indicated that the implementation of best practices is too slow.

Chairman Leibowitz also stated that it's the difficult to conclude that companies' self-regulation of privacy is effective. The Chairman emphasized that the FTC is not making the rules, but noted that the US Congress will do so if industry does not work harder to protect consumer's privacy.

The FTC is also involved in online privacy internationally. After time as an observer the FTC was recently accredited as a member of the International Conference of Data Protection and Privacy Commissioners. The FTC and Chairman Leibowitz were very enthusiastic about this development. Privacy is critical in our global economy, and we must ensure that privacy protection benefits consumers across the world.

In this context, the Chairman informed us that the FTC will sign more agreements to assure confidential information with international partners. The FTC has several agreements with other countries to share information on spam and spyware in order to fight online fraud in the global arena. These actions can be a touchy subject, particularly in the EU, but the Chairman assured the audience that he will collaborate with the EU to ensure the protection of the consumers around the globe.

KATHRYN BROWN, Senior Vice-President Public Policy Development & Corporate Responsibility, Verizon Communications, USA, [www.verizon.com], was asked by David Gross to share with the Global Forum 2010's audience her thoughts on: "How do you see the immense capacity of FiOS and the 'third pipe' for broadband in LTE mobile contributing to economic, social and societal promises."

Kathryn Brown started by thanking the organizers of the Global Forum 2010 for all their work. Ms Brown continued by reminding the audience that over the past years we have discussed the opportunities and capacities of broadband and the Internet and the benefits introduced by ICTs for consumers and governments. Ms. Brown pointed out that while some parts of the world do not yet have the same deployment levels that we would want globally, we now have a notion of what a mature ICT society looks like and the shifts in industries as a result. She then went on to share that we are seeing shifts in businesses and business models. For example, Verizon's networks, including FiOS, contribute to the future business models of the broadcasting industry because the Internet can carry content and information, such as movies, that were once only available through the airwaves or cable. The newspaper industry is also looking to new business models, and channels of distribution to either replace or compliment paper distribution. The medical industry is also changing as are the electrical and energy industries. All these changes are the result of the introduction of digital technologies which have the capability to run over sophisticated networks and platforms.

After this introduction, Ms. Brown focused on the competitive platforms which are offered in the US. These platforms carry the data relevant to, for example, commerce, finance, and culture between all countries. These platforms allow for true exchanges of information and services, regardless of borders. The Verizon Senior Vice-President Public Policy Development & Corporate Responsibility reminded the audience that these platforms are expensive to build and noted that the carriers and investors of these platforms face a challenge as a result of how consumers engage in the digital world and the new uses and demands for ICT and content. The volume of traffic has drastically increased in the US and worldwide. Verizon took measures early on and invested in fiber to the home (such as FiOS) which allows for quality use of the Internet through technology which increases the capacity of the fiber. The architecture of this fiber network is the first step toward the next kind of user capacity and meeting demand. Investors have to face the challenges of future-proof technologies.

Ms. Brown also noted Verizon's deployment of the new wireless technology, LTE in the USA. One month ago, Verizon launched commercial LTE service in 38 major markets, home to about one-third of all Americans. Verizon will double that coverage over the next 18 months and blanket the country in three years. Ms. Brown shared that LTE will change everything as it enables users to have 10 gigabyte in their hands through mobile devices not only in the USA but where deployed in Europe and elsewhere, including in the developing economies. Ms. Brown explained that this technology is a 'leapfrog technology', that it is to say, it is not necessary to have costly investments in pipes. As a result, it is possible to have technology enabling high speed access to the Internet in areas were Internet access had not existed before. However, this also means that the demands on and for these networks will grow. To illustrate her point, Ms Brown explained that the 3G technology allows for watching live TV on mobile devices; and 4G allows a user to walk around with video access through a handheld device, anyplace and communicate across the world. To achieve this, however, we need to have robust transcontinental networks as well as robust networks in the receiving nation. This is why Verizon encourages increased investments in these sectors.

Ms. Brown concluded her remarks by observing that as we think about the digital society which is now a reality, and the things that technologies are already capable of, the ICT industry must think about how the industry pays for it and how to obtain the investments to build the platforms which carry this information around the world.

The ICT industry has to focus not only on the jobs created by the platform being built but also think about the jobs created because of the new technologies emerging. The ICT industry has to re-emerge after the difficult recent years of the financial crisis which paralyzed the industry. Kathryn Brown concluded by expressing her view that ICT is the best solution to ensuring global growth.

Anne Altman, General Manager Global Public Sector IBM, USA shared brilliantly with the audience the progress, opportunities and cost saving offered by the IBM Smarter Planet approach in reply to the question of David Gross: *IBM introduced its Smarter Planet initiative in 2008 at around the same time that the world began experiencing a downturn in the global economy. Would you share with us lessons learned from the Smarter Planet initiative and how IBM's vision resonates with the ICT community and the next generation?*

Ms. **Altman** began by expressing that it was the first time she has participated in this Global Forum event and that she was impressed with the caliber of the keynote speakers. Anne Altman started by saying that "Smarter Planet" seems now like an old term in 2010. She explained that in 2008 when it was on the agenda, IBM positioned Smarter Planet as a leading edge initiative. Some challenged the timing of such a bold initiative when the world economy, on the brink of a collapse, faced so many difficult challenges. There were questions about whether the world was ready to hear about such a vision.

IBM made this bold move not as a marketing campaign but as a unifying means of bringing together the entire IBM Company -- the research, the technology, all its people – to address some of the world's most intractable problems. Referring to the previous keynote addresses, Anna Altman acknowledges that the technologies are here and that the current infrastructure is capable of supporting a Smarter Planet. She informed us that the world was ready and its readiness was reflected in the results IBM and its clients have experienced in the past two years. With more and more data available to clients and with the use of, for example, business analytics to make sense of that data, clients are able to make better and more informed decisions. The people are connected online all the time, and systems are connected as well.   Put simply, economic challenges have forced businesses and governments, for example, to change their business models. At the same time, with the continuing globalization movement, the access to skills and markets has greatly facilitated change, and it also has increased the competitiveness which requires new insights and ways of doing business. Companies have to actualize their insights in order to capture new and more profitable businesses. We now have smarter buildings, smarter water management, smarter transportation, and other smarter new services that are lowering the costs of government and healthcare…

Anne Altman then discussed a subject which many consider especially provocative in the public sector – government deficits around the world and especially in the USA ($700 billion dollars) and in Europe. Governments have to reduce their deficits, she said. We all recognize that this is a huge challenge -- namely, how to reduce spending while increasing the quality of services, especially those public services that are desperately needed by society. To illustrate this point, Ms. Altman discussed a report recently issued by the Technology CEO Council (IBM Chairman Sam Palmisano is the chairman of the Council) and presented to the Obama administration. The report attempts to address the following conundrum: how to decrease Administration spending while increasing the quality of services…and how to address the challenges surrounding the U.S.'s infrastructure while preserving the U.S.'s global position in the world – its history of growth and innovation. This report consisted of seven pragmatic suggestions. One of those suggestions was to streamline the government's supply chain. Doing so would involve major consolidation of thousands of supply chains now run separately in government agencies and organizations. The result for the U.S. Federal government over the next 10 years would result in hundreds of billions of dollars in savings. Ms. Altman then gave an example of how IBM consolidated its 26 supply organizations over the last 10 years. This resulted in billions of dollars in savings. It also increased the transparency of the procurement process.

Ms. Altman also discussed another of the CEO Council's report -- IT consolidation. The U.S. Government spends 76-78 billion dollars a year on IT. If it could rationalize and consolidate its IT operations, it would achieve major energy savings, increase the efficiency of IT management, and save a total of 200 billion. The **Technology CEO Council** report is provocative not only for the U.S. but also for countries across the world. It has the potential to show governments how to find the resources which could finance new platforms and infrastructures they need to streamline their operations, reduce costs, and serve their constituents more effectively.

CHAIRMAN KONRAD VON FINCKENSTEIN, Canadian Radio Television and Telecommunications Commission - CRTC, Canada was asked by David Gross: Canada has adopted a regime of mandated wholesale access for the provision of telecommunications services. In a recent decision, the CRTC maintained this regime for Internet service providers. This seems to run counter to the reliance on market forces you have generally upheld in recent years. Can you tell us how and why the CRTC reached this important decision?

The chairman started by expressing his delight to be in the Global Forum 2010 and the fact that all the keynote speakers so far have to face similar challenges and issues.

Konrad Von Finckenstein began by a brief remembering of the changes that the platforms induce in broadcasting and in the newspaper's industry as presented before by Ms. Brown and Ms. Altman. Then, the Chairman explains us the mission of the CRTC which is regulation of the television and telecoms including internet and its delivery in Canada.

The situation of the IT industry in Canada is similar to the USA with a concentrated industry. There are 2 telcos companies and 4 cable companies: 3 in English and one for the French side. In response to the change of platforms, the Canadian companies have chosen the integration as in the USA with the purchase of NBC by Comcast.

On the French side there is a company which is present in all markets: cable, internet, wireless, television broadcast… they is also one of the largest telecom provider in the French province of Quebec.

On the English side of Canada, there are 3 groups which have basically the same activities. The largest English broadcaster in currently in the process to be bought by the largest telco, the second largest broadcaster already has been bought by the largest cable company and the 3rd largest broadcaster has been bought by the 3rd cable company.

Each one of these companies has a totally vertically integrated offer: telecom, cable, Internet and wireless services and over the air services. Each of those companies have the same competition issues.

When the CRTC approved the merger of one of its larger telcom companies with the second larger broadcaster, it came very much to the front to give now a look at these vertical issues.

For instance, last year in 2009, when the Olympics winter games took place in Canada, 20% of people watched them on their mobile devices. They could only watch on the mobile devices that belong to the Bell company which was a sponsor of the Olympics. Everybody could watch the Olympics on their TV, but in mobile devices it was exclusivity to the Bell customers. Of course this was just before the arrival of the iPad.

Konrad Von Finckenstein predicts that for the next Olympics, a lot more people would want to watch them on their mobile devices. This is true not only for the Olympics but for others program as well. Mr. Von Finckenstein raised the issue of the exclusivity of programs. Should providers be able to continue to buy rights and make them available only to their customers or does it should be available to a broader audience? This is an issue that the CRTC has to deal with due to the change in the broadcasting sector. The CRTC intervene when there is a market failure.

The operators have also to face the difficulties of managing their content. The chairman points out the fact that even the industry is not sure if they should give access to all content. Or put in prime program exclusivity their customers in order to obtain new clients. The industry really does not know and the chairman predicts that this issue will continue to growth as the vertical integration is strengthening.

The CRTC has to find the balance between competition & discrimination. How to ensure that there is a sharing of the information and experiences when there are huge national events such as the Olympics. How to ensure the equity?

EDWARD P. LAZARUS, Chief of Staff Federal Communications Commission FCC, USA was questioned by David Gross about the role of the Federal Communication Commission (FCC) addresses the challenges of the Internet access and promoting in the USA and elsewhere.

What challenges do you see to promoting access to the Internet around the world and how would you address those challenges?

Mr. Lazarus first wanted to thank the organizers of the Global Forum to be invited to be part of it. Referring to the previous keynote speakers, Mr. Lazarus pointed out that the FCC deals with all the issues addressed previously by the presenters such as the NBC-Comcast case.
The promotion of the Internet around the role is part of the FCC task.
Recently, the role of the FCC was to create the US broadband plan, this task was fulfilled in March 2010.

Then, Mr. Lazarus addresses the question which was raised by Anne Altman in time of economic difficulties: the huge deficit, how the government can cope with the challenges of the increasing internet and increasing access & adoption.

The FCC assists the government in promoting those two goals. To do so the FCC divides this task in several pieces. It takes a look at the inputs that the government can pull. Mr. Lazarus explains that In the specific case of the USA, there are at least 3 inputs that the government should pull:

1) Spectrum: Mobiles offer a lot of opportunities but there is also an extraordinary challenge. There are already 61 Million smartphones in the USA, plus the iPads and others tablets which will continue to have an impressive and fast growth. All those devices will increase the data on the networks. This is the reason why the FCC Chief of Staff insists on the fact that the USA needs more spectrums for those uses. This raises the issue of spectrum allocation and how to pass from the old allocations to the new set of allocations as in other countries over the world. Mr. Lazarus informed us that in order to address the allocation issue, the FCC proposed a market based

mechanism for moving spectrum from one set of important uses to another set of pressing uses in a way that the market will determine the value .

2) Universal service fund: The FCC has each year 8 -9 billion dollars funds which is directed to the universalisation of communication network. This fund is not directed in the most efficient way toward building broadband networks. The FCC broadband plan talks about ways to allocating this fund in order to make sure that the universalisation of broadband becomes a priority. This fund objective is also to avoid unnecessary expenses for private networks such as the one that Ms. Brown from presented. Companies spend 18-19 billion dollars a year on infrastructure and one of the roles of government is to take part in this critical point. The government has to help the companies to build those networks.

Mr. Lazarus explained that the government has to play his role as promoter of the Internet adoption. In the USA, an average third of the population is still in the "no' adopters" group. It can be explained by a lot of reasons but the government must help to overcome this for economic reasons. The government has put in place a program to facilitate the access to low-income people which hinder the "Internet" adoption. It is also necessary to help increasing the "digital literacy" to help people to be online.

The Government is an important player in the market. Mr. Lazarus insists on the fact that much could be done to promote the use of broadband for ex. in the fields of smart grid; e-procurement, health IT, e education…

3) The Fracture of the Global Internet: The FCC also looks around the world and in one hand the FCC is aware of the growth of the ICT sector but on the other hand, the FCC is also worried about the fracture that may be appearing due to the Global Internet. Countries that have restricted domestic access are taking advantage of the openness of others. The ICT growth goes also with the emergence of new issues such as privacy, data protection & security which require regulation. In order to address those issues, countries may be inclined to impose the housing of the source code in their countries. The Cybersecurity issue may favor the raise of barriers at the entry and thus hinder the Global market.

Edward Lazarus concluded by the facts that those issues require a solution and that the FCC is looking forward to solve those issues in coordination with its global partners: governments and private sector in order to put in place an environment which favor the growth of the Internet around the world.

GABRIELLE GAUTHEY, Executive Vice President Global Government & Public Affairs, Alcatel-Lucent, France, [www.alcatel-lucent.com], was asked by David Gross to share with the Global Forum audience her insight the disruptive nature of both the technology and the emerging change on policy perspective, both as a representative of the private sector and public sector as a former French regulator. Alcatel has a global perspective on those issues, as well as a view of how to keep the security and privacy for the individual as well.

The traditional telecommunications eco-system is undergoing several disruptive changes, in the US and around the world. What, in your view, are the main challenges the actors in the marketplace are facing?

Gabrielle Gauthey started by thanking the organizers of the Global Forum for offering the opportunity to exchange with many people, each year in different places of the world. She explained that she arrived in Alcatel-Lucent when the company was still trying to figure out how to reorganize and insert itself globally in order to tackle the challenges that Alcatel-Lucent was facing.

As the previous keynote speakers, Gabrielle Gauthey confirmed that all sectors are facing very disruptive challenges since 10 years but those changes accelerated in the past 3 years. For the Executive Vice President Global Government & Public Affairs from Alcatel-Lucent, these challenges required new ways to think, see, imagine new business models as well as new ways to think the investments in the future months or years if you want to maintain a sustainable future for Internet

For Ms. Gauthey, we are currently on the eve of mobile internet which what not the case only 2 years ago. There is an explosion of mobile & mobile internet worldwide. The evolution is indeed impressive: in 1999, in the world only one out of 6 persons had a mobile phone, now we are at 7 out of 10, in 5 years the IP traffic will be multiplied by 5, 90% will be for videos and 80% of mobile phones will be internet enabled even in the developing and emerging countries.

Data and videos explosion is a really big characteristic of the market which legitimates the investments in network if the ICT companies do not want to have to avoid a network capacity crunch. For the next years, It should be done new rounds of investments in next generation access networks and in convergence, do not oppose fix and mobile phone.

The investments needed in Europe in the coming years are impressive: for fiber, 300 billion euros for LTE it is over a hundred billion euro. The question is to know who will make those huge investments. She addresses to the regulators that in a context where service providers face a decoupling of traffic and revenues due to the traffic boom, service providers' revenues remain fairly flat due to the competition.

There is a shift in the chain value, most of the growth comes from the over top innovation, service providers are struggling to monetize this through traditional business models, there is a necessity to find a new business models. A new balance has to be found among all these stakeholders. This will fuel the net neutrality debate with dominate search engines, leading devices providers, service providers, leading social networks. All of them play the first role in the shift in traffic pull. From carriers to aggregators, the over the top innovators enjoy a 20 price by earning ratio.versus a ratio of the carriers which is under 14. This raises an issue: the investors are a lot more interested in the over the tops rather than in the traditional carriers. It raises the question of who will finance the huge necessary investments.

Gabrielle Gauthey continues with the issue of trust and data privacy. This issue interests all the stakeholders: the private sector. and more and more governments.

On average all personal data are being told in 700 different databanks in the networks. The security of the network is a growing concern. The representatives of ALU estimate that there is a need for a global cooperation and debate to address this issue.

We have to find new investment models for the sector, value more connectivity. The service providers should be proud of pipes but smart one. Smart pipes means that there must be a shift in the way they are considered. New investment models with the question of who will be the payers.

ALU is more and more engaged in emerging countries, in Europe and in other part of the world in ways where you think the models differently. The differences can be radical, for instance Australian model where there is a sort of monopoly; a strong network separation. Others models are less radical. There is a need to share non discriminate passive infrastructure and own what is discriminate: the active infrastructure. Europe is engaged in this.

Alcatel-Lucent is in favor of common shared spectrum and fiber to the home for the next Global network. Gabrielle affirms that it is not possible to keep a good rentability In Europe if there are several parallel LTE networks. The question in this is case is the sharing, what are the discriminate critters to determinate that. The service providers have to change their business models.

Gabrielle Gauthey insists on the fact that the service providers have to be proud and smart pipes that value connectivity and quality of service, the providers should also monetize the data in the pipes. Gabrielle explain that "proud to be a smart pipes also means to rebalance the fast moving Internet economy foundation because this question reflect what is behind the current net neutrality debate and the rapid moving of the technical and economic organizations of the Internet backward.

According to Gabrielle, Alcatel-Lucent spends a lot of time with Bell labs to make this change understand by the regulators and by the EU commission. The representative continues by affirming that there is a real need to rebalance tie unbalanced network. A right balance has to be found, it must allow operators to find new business models, to monetize that they are smart pipes and allow smart connectivity. There is also a need to find a balance in investment, balance in management investment, and balance without discriminative behavior.

Alcatel-Lucent tries to bring this debate in the USA and the EU commission. Gabrielle is strongly in favor that the industry comes up with what she calls "soft laws", not new regulations or laws as she deems that there is no need for that. For Gabrielle, the industry must collaborate and envisioned together new business models and management, this talks must gather the service providers, the "over the top" and the others actors.

The last debate is according to the Alcatel-Lucent delegate the trust, security and privacy as well as the resilience of network which is a different issue. This debate is indeed a growing concern in the world even if it started later in Europe than in the USA.

She pointed out that there are differences in the conception of what is data protection in Europe and in the USA. They do not have the same approach in data protection issue.

She precises that Europe is currently in the process of revision of the framework of the data privacy directive. Gabrielle remarks that on this issue, there is a real transatlantic dialog and that in there will be in Brussels, seminar and forums on this topics in spring 2011 which should help to have a more consist approach on the data protection question but also on the resilience. This will help to find answer on how organize globally the redundancy of network among service providers.

For Gabrielle those are the major challenges that should be tackle with different approach both with national and the organizations of the market.

Gabrielle concluded by the fact that the policy makers with service providers have to discussed in order to create the condition for a sustainable economy in Europe and in the World.

YASUHIKO TANIWAKI, Division Director, ICT Strategy Policy Division, Global ICT Strategy Bureau, Ministry of Internal Affairs and Communications (MIC), Japan was asked to share with the audience on the Global Forum 2010 what are the main issues that Japan has faced in recent with years with respect to the broadband market?

Yasuhiko Taniwaki started by presenting the strategy that Japan adopted in order to promote the broadband. Mr. Taniwaki's presentation is entitled: "Smart Cloud Strategy in Japan", he remarks that the word "smart" was already used by some of the keynote speakers

Mr. Taniwaki presented the impressive figures (see slides on www.items-int.com) of the current broadband infrastructures in Japan. By the end of March 2011, Japan is expecting to eliminate the areas in all Japanese territory which do not have access to broadband. For the FTTH (fiber-to-the-home) Japan has already a 90% penetration. Concerning the mobile, 97.5% of Japanese have the 3G which is an impressive achievement.

Japan has without any doubt the infrastructure. However Japan has issues on how to improve the adoption or subscription of the broadband services. Currently 60% of the Japanese population has been using the broadband services whereas there is already a 100% availability to the infrastructure. Japan is trying to fill the gap between the adoption rate of the broadband by the population and the 100% availability arpind by 2015. In a way, Japan has the information highway but there are not so many cars to use it. The promotion of ICT is one of the most important tasks of the Japanese government.

In this context, Japan pays a lot of attention to the emergence of the Cloud computing technology. Japan has the perfect environment for the use of the could computing technology but the promotion of the ICT does not follow fast enough compare to what is done by others countries.

Mr. Taniwaki presents the cloud computing as the trigger to promote the use of ICT in Japan. The Japanese government refers to could computing as smart cloud, smart meaning that Japan would like to go beyond the existing business and industry framework. Smart cloud should allow cooperation between various industries and different companies; this should help to create new values and a new efficiencies.

Japan has implemented 3 different strategies:

1) Promotion of the utilization strategy of ICT.

In terms of on online administration such as eGovernment, Japan has been lagging behind compared to other countries. Japan tried to introduce cloud computing technology to the Government and in the case of local governments Mr. Taniwaki estimates that cloud computing is a perfect tool to improve their efficiency.

Smart grid is the perfect combination of the flow of energy and the flow of information. For Mr. Taniwaki, cloud computing can be used in this area to improve the efficiency of social infrastructures.
Cloud Computing could also be used for the Green ITS (Intelligent Transportation System) as well as in the improvement of the efficiency of SMEs.

2) Technology Strategy

The technology strategy issues can be discussed from the R&D prospective and also from the standardization perspective. Especially in the R&D field, cloud computing allows to put together a bunch of streaming data collected through the networks.
For instance in the field of medical services it allows to have access to a mass of information. This type of data can be found in the cloud and it can be modeled and used to develop new medicine for ex. in treatments.

In case of the standardization issue, it is too early to go fast to the standardization of cloud computing but in the other hand we should avoid the vendor excessive lock-in.
From the users centric approach, there is a need for the development of a common platform which focus on SLA-Service level Agreement, Security Level and Interoperability for hybrid cloud services.

3) International Strategy

Privacy and jurisdiction issues have also appeared in the context of cloud computing technology. Japan recently started with the US government to talk about internet economy which includes cloud computing technology. To understand and address those issues as well as take into account the vision of others countries, Mr. Taniwaki thinks that there is a need for bilateral Japan-US but also multilateral one with APEC and OECD discussion.

FRANCISCO GARCIA MORAN, Director General, DG Informatics-DIGIT, European Commission was asked by David Gross to share his insights on the European Digital Agenda.

With the following question: in May 2010 the European Commission approved the European Digital Agenda, could you please tell us what it is about and the impact that EU expects from this initiative?

Mr. Garcia Moran began by expressing his pleasure to participate in the Global Forum for the first time, he also thanks the organizers.

The goal of his intervention is to present to the audience of the Global Forum the Europe Digital Agenda and put it in the context of Europe 2020 initiative.

This initiative was launched by the EU Commission in March 2010 and revolves around 3 mutually reinforcing priorities in order to ensure that the EU has growth that is smart, sustainable and inclusive.

Those priorities will be addressed by *7 flagship initiatives* such as moving to a low carbon economy, creating transferable innovative ideas for growth and products, creating a solid industrial base to allow Europe to compete globally in order to ensure a social and territorial cohesion in Europe and enhancing the performance of the education systems so that the youngster of Europe can make their entry in the job market.

The European Digital Agenda aims to create an European digital single market place which is strong and allow a growth based on ultra fast internet and interoperable applications.

The goal of the Commissioner Kroes is simple: every European should be digital, this means remove today's barriers and create a virtuous circle which will allow Europe to have faster growth for the future.

The digital agenda also plans for investments in the infrastructures in order to meet the requirements for a high speed Internet.

The digital agenda aim is also the strengthening the ability of the European ICT industry to produce better products through innovation and research.

The Digital Divide has actions so that there are no European citizens left behind; the agenda promotes the increase of digital access and literacy to address this issue.

eGovernment is an important topic in the Digital Agenda. Mr. Garcia Moran pointed out to the audience that Europe has a paradox in eGovernment, according to the United Nations, 6 of the 10 best countries in eGovernment are in Europe, however Europe has a number of weaknesses, more particularly in the cross border area and that this due to the lack of interoperability, mostly at legal, organizational and semantic level.

He, then insists on the importance of interoperability and remembers the audience that one of the founding pillars of the European Union is the development of an internal market. The barriers even electronically go against this objective.

eGovernment, if not approached with interoperability in mind, may create incompatible solutions that could put barriers in place and this must be avoid

The Digital Agenda proposes also the implementation of actions for the development of the infrastructure which is of course needed for eGovernment. In order to lead with the example in the area of eGovernment, the European Commission commits itself to put in place an ambitious eCommission transformation process leading to a more open and transparent Government.

The European Commission and EU member states have to commit to enable the development and deployment of cross-border eGovernment services so that, for instance, an entrepreneur can set up his business anywhere in Europe independently of the country where he lives or to allow citizens to study live and retire in any country in Europe.

There are, in the Digital Agenda, two important actions on interoperability: one related to the process to setting up using standards and the other one related to the promotion of cross border eGovernment services through the European Interoperability Strategy and the European Interoperability Framework to which Member States should align their national frameworks by 2013.

In order to illustrate his point, Mr. Garcia takes the case of ISA (Interoperability Solutions for European Public Administration), an EU programme managed by DIGIT. The objective of ISA is to facilitate the efficient and effective deployment of an electronic cross-border and cross-sector services. This program is essential to promote interoperability and create true cross-border eGovernment services.

The main objectives of ISA are:

- Establishment of common frameworks in support of the interoperability;
- Assessment of ICT implications of Community legislation which is important as it allows detecting possible interoperability issues at technical and more important at organizational, semantic and legal levels. With this action it should be possible to assess legislation before it is enacted so that barriers can be avoided.
- Creation of common and generic tools so that they can be reused by member states
- Delivery of common services and platforms.

The European Commission goal is to address the major challenges through interoperability to all levels and other artifacts that will allow a better delivering in interoperability, cross border and cross sectors.

DIGIT, the Directorate General for Informatics of the European Commission, wants to lead the promotion the eCommission and thus respecting its primary mission which is enabling the commission to be more efficient, more effective so that the commission could achieve its organizational and political objectives.

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Broadband: Ready to Invest

The **moderator** of the session, **JIM BALLER, President at the Baller Herbst Law Group, P.C**, USA, welcomed the participants and expressed his delight about a magnificent panel that will address the issues of investment in broadband technology from many different perspectives.

Jim is an attorney who has spent the last 15 years working with communities that have developed their own networks to advance everything that one can on the platform of advanced communications. Jim is also president of the US Broadband Coalition, which helped to build consensus for a national broadband strategy, and he is working with Google on its Fiber for Communities initiative. Before introducing the panelists, he briefly set the background for the panel:

Despite of what many people may think, this is a time in the US that is bursting with opportunity. As a result of the US stimulus program pouring 8 billion dollars into the communications, the creation of a National Broadband Plan, the Google initiative, and many other developments, there are now tens of thousands of individuals and organizations thinking about broadband and what it can mean for communities across America. This marks a big change from just two years ago, when the US national policy focused on the triple play, and providers primarily wanted to stretch existing networks as far as possible. Now, the US has certainly moved ahead by at least five years in the last two years. With all these individuals and organizations thinking about broadband now, developing new programs in the field, and learning from each others' successes and failures, the US will probably advance another five years in the next two years.

The panel starts with an overview of the situation in the US, Europe and the rest of the world and then goes more deeply into various specific issues.

JOHNATHAN ADELSTEIN, Administrator at the US Department of Agriculture, Rural Utilities Services Program, USA, sensibly addressed the very interesting topic of

America's National Broadband Policy

Some years ago, the belief in the US was that the market would take care of the issue of broadband deployment. There was a lack of recognition that broadband offers enormous externalities, as economists look on it, for economic productivity, for education, for healthcare, for development, for culture. Broadband was not recognized by government policy, and while most other industrialized countries had a national level commitment and moved forward, the US was sliding behind. The USA is so spread out – which is a strength in many ways, but also harmful in terms of broadband deployment. It took a new president and a new Congress, but toady the US has a plan in place. RUS (Rural Utilities Service of the Department of Agriculture) welcomes to be part of an administration that has put broadband on the top of its agenda. As a testament to that level of commitment, it was under President

Obama that the Recovery Act was enacted. They gave RUS $2.5 billion out of $7.2 billion in total budget authority to get broadband to every corner of this country. As a result, RUS is coming out for its biggest year in its 75 year history and is now doing for broadband what it did for electricity so many years ago.

RUS collaborated closely with the White House and the Department of Commerce to make the biggest investment the US has ever made in broadband networks. RUS got all the money out the door on time under a second round of funding. They did it in two different rounds and had to speed up to get it done by September, 30. RUS handed out four times as many awards in less than half the time it took them to do the first round because this is a new program and RUS had to get it set up and running. By stretching the money provided by the congress to provide loans as well as grants, RUS took $2.5 billion in budget authority and stretched it to $3.5 billion in loans and grants.

The main amount of the $3.25 billion was for last mile infrastructure – particularly fiber to homes, to businesses, and to anchor institutions. That has been the focus of the telecommunications program at RUS for 16 years. On top of that, RUS made $100 million in awards to satellite because certain places that will not be reached by any of the program. It is also providing $3 million for technical assistance for regional broadband plans.

The funds awarded by RUS alone will reach 6 million people, who will benefit from state of the art broadband networks in 46 states. It will serve over 360,000 businesses and over 30,000 key community anchor institutions providing healthcare and educational benefits. More than 1 million kids are in schools that are served by RUS's broadband awards. More than 600 healthcare facilities are served by them. RUS targeted the most rural areas in the country as well as low income areas. RUS reached 125 counties with persistent poverty – which corresponds to nearly 1/3 of all persistent poverty counties in the US

Now, in this economic time of uncertainty and difficulty, this will create 25,000 jobs. And once the networks are built, they will provide the platform for incalculable job creation and economic growth for years to come. When businesses come to a community and consider whether to locate there, the first question they ask is: Is there broadband? Rural residents who want to start a new business have often had to move to more urbanized areas where they can get access to broadband. And clearly young people will not stay in areas without broadband. This is the big crisis facing rural America today – its out-migration.

It is necessary to tap the potential of these rural areas for an economy to reach its full potential. That is why the US is making these investments to achieve universal access to broadband. But even with all these massive investments, there are a number of large gaps in coverage that may remain even after these funds are awarded. It took incredible collaboration to get this far between the Federal Government and the private sector. There were more good applications than funding for them. The idea is now to fill these holes with existing programs, such as a regulatory communications program, a distance learning and telemedicine program, or a community-connect program for very small communities with no access to broadband.

MICHAEL BARTHOLOMEW, Director of the European Telecommunications Network Operators' Association - ETNO, Belgium, provided insights into the EU's broadband strategy:

Europe's Digital Agenda

On both sides of the Atlantic, there is recognition that technology and innovation are essential for promoting economic recovery. There is strong convergence with the US national broadband plan and Europe's Digital Agenda plan. Both recognize a very compelling need to deploy more bandwidth and also to deploy broadly in society.

Productivity gains of a digital market could be enormous and ETNO very much focused on creating this digital market. But broadband is very expensive and this is one of the major issues confronting Europe today.

ETNO is the leading trade association in the ICT sector. The association has 41 major European operators in 35 countries, including the US, and just last week ETNO signed an agreement with all the Middle Eastern operators. Collectively, ETNO's members account for about 270 billion euros in revenues and about 1 million employees.

As operators, ETNO's members very much welcomed the Digital Agenda Programme launched by EU Commissioner Neelie Kroes in May last year. The association held its own Digital Agenda Summit in October. The CEOs of all its member companies were present in Brussels and reiterated their willingness to contribute to the success of the Digital Agenda and their readiness to invest – given the right commercial and regulatory conditions.

In both the European 2020 Strategy of the Barroso Commission and the Digital Agenda – the ICT sector is clearly placed as a core driver for economic growth and job creation in Europe. In particular, the Digital Agenda recognizes that the deployment of Next Generation Access Networks (NGA) is going to be an essential driver for Europe's economic recovery.

As Mrs. Kroes says, fast broadband is digital oxygen. It is essential for Europe's prosperity and well-being. The European Digital Agenda sets out very clear targets for NGA roll out: By 2020, all European households should have access to at least 30 megabits, and 50 percent of them should be subscribing to 100 megabits per second. These goals are very ambitious and the current situation makes them even more challenging: In terms of fiber penetration, with 1.2 percent of households having a fiber connection, Europe is behind the US with around 4.8 percent and far behind Asia -- particularly Japan, which is at 35 percent.

Due to the overall financial crisis and the uncertainty surrounding NGA regulation, overall investment in Europe last year dropped by 6.4 percent. Today, ETNO's member companies are the main investors in NGA, but they are investing cautiously deploying a mix of mobile and fixed technologies.

NGA demands next generation regulation, but this was unfortunately not reflected in the recently adopted and long-awaited recommendation on NGA access from the European Commission. ETNO appeals to regulators to take into account national circumstances in a European Union of 27 member states. NGA investment is the prerequisite for achieving the 100 action points of the Digital Agenda and therefore will remain a top priority for European policy makers.

Demand side policies are also very important, and EU policy makers need to introduce policies to stimulate take-up by consumers and businesses, and to ensure that other sectors fully embrace the potential of ICT and broadband. ETNO advocates a wider choice of attractive legitimate online content applications, as these offers will be a very important factor to encourage people to use the Internet. ETNO calls for a simplification of the access to legitimate content to facilitate the emergence of new business models. There is a need to simplify the copyright system and licensing system. Just the other day, Commissioner Neelie Kroes said a new initiative would be underway on copyright issues.

Broadband-enabled innovation can significantly improve productivity in many areas of the economy and lead to a significant reduction in CO2 emissions. ICT-based solutions can play a very important role in areas such as public healthcare and education. It is also essential to step up eGovernment initiatives and to ensure that all basic public services are available online and for free. As leading investors in NGA, ETNO's member companies reaffirmed their readiness to deploy these high speed networks wherever it is commercially viable and within a policy framework that encourages high risk investment. ETNO is talking about an investment of approximately 300 billion euros.

ETNO's members will be strong contributors to the digital single market and will provide innovative services and solutions which will be increasingly available online.

GABRIELLE GAUTHEY, Executive Vice President of Global Government & Public Affairs, Alcatel-Lucent, France, [www.alcatel-lucent.com], brilliantly elucidated how governments around the world struggle to find the best way to step in broadband investment:

Broadband: Ready to Invest?
Disruptive Changes and New Investment Models

In the context of disruptive changes and underpinning trends, it is not possible to ignore the data Exaflood that calls for new network investments. The rapid shift in consumer behaviour towards enhanced data consumption is leading to network capacity crunch: Between 2009 and 2014, there will be 34% CAGR in global IP traffic and 108% CAGR in global mobile data traffic. Mobile data traffic is rocketing, with IPad and connected devices booming and we are the eve of the mobile Internet revolution that calls for new investment – not only in mobile networks but in converged core. There is less and less differentiation and one can no longer oppose mobile and fixed. The future of mobile is fixed – be it in the rural or in the urban areas.

At the same time, network cost is rising but there are less revenues. There is a problem and especially in Europe investment is not happening very rapidly.

Another driver is the device side – device manufacturers, the increasing number of subscribers with mobile devices around the world and the increasing number of rich media/ video enabled devices. But also the increasing device capabilities that lead to increasing network cost. This is driving the demand and the need for investment.

At the same time, there is a shift of the value chain and brand image in favour of Over The Top (OTT) players and emerging balance sheet strength and equity value of content players or aggregators versus carriers. The OTT enjoy a price to earnings ratio of over 20 and the carriers less than 13. So, at the same time growing unbalanced IP interconnection flows and a well positioned image of the OTTs.

There is also the challenge to enable new business models combining net neutrality requirements with the right to manage the network with the upgrade of the network. There is a need to balance the right to manage with investment and balance the right to manage with enhanced transparency and allow the rebalancing of the value change through network monetization and revision of interconnection. At the same time there is the need to accept new investment models in order to be able to lower the cost and to increase network sharing. People have to revise the way they view a network. A NGA is made of 80% non-discriminate dark fiber ducts – which is not discriminate for the smart pipe and calls for new co-invest or sharing models – the sharing of non-discriminate network assets.

Why do Public Authorities step-in all around the world? First of all, due to the growing awareness of broadband investments' spill-over effects on the GDP, productivity and competitiveness; to achieve ubiquitous coverage of very high speed connectivity and to tackle future challenges of society, such as social inclusion, ageing population, or climate change; to complement private initiatives in policy driven areas and maximize the network's social benefits; but also to ensure network openness and cost-effective connectivity through competition while encouraging new investments needed to handle the data explosion.

Public authorities (governments and regulators) intervene especially in Europe by mandating infrastructure sharing models to lower market entry barriers (ducts, in-house wiring, poles and masts sharing, NGA recommendation, co-investment in wire-line and wireless passive infrastructure). They also intervene by organizing new competition models (NBN model, open rural LTE networks) and by fostering competition and coverage through PPP like projects, e.g., the recovery plan in the US, digital and broadband plans in the EU and APAC, or EU State Aid guidelines encouraging PPPs.

There are different types of access competition models. Those based on active infrastructure based competition -- this is what the EU tries to push: Access to non-replicable passive infrastructure (ducts, poles, masts, in-house wiring) triggers infrastructure competition in urban and suburban dense areas. In medium/ low density areas, competition can be based on a combination of access to passive infrastructure and bit stream wholesale – which is seen as the second best in Europe. State Aid is allowed for fibre access networks and in backhauling in underserved areas. The differentiation between operators must be based on access to physical network resources (LLU).

On the other side, there are service based competition models. A single network is rolled-out and shared: "regulated monopoly". Competition is based on bit stream wholesale (layer 2) or Radio Access Network. Universal coverage is a first priority – projects are government driven. The differentiation between service providers is based on access to logical network resources (fixed or mobile IP bit stream). Horizontally integrated operators compete through active bit stream wholesale (e.g. APAC).

The industry faces a range of uncertainties and must prepare for a number of alternative scenarios: The worst case scenario would be a survivor consolidation – with revenue decline, industry loss of confidence, leading to consolidation of Telcos. The US scenario is a "clash of giants" with competition between integrated giant carriers and increased competitive threats from OTT. Another scenario would be the APAC scenario "market shakeout" with structural separation and growth through premium connectivity sold to third parties. Europe's scenario would be the "generative bazaar" with scattered initiatives trying to force passive infrastructure sharing and the valorization of active infrastructures. A return to strong growth

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requires the telecom industry to act collectively, to create the necessary conditions for the emergence of the more profitable scenarios.

We live in very interesting times to see the governments stepping in so different ways because they see the need to foster different investment models; and perhaps to see another way to help service providers keep competitiveness in this rather disruptive world. See the value not only in the only in the ownership of the silly dark fibre infrastructure but see the value in its upper active side.

MARK CRISSON, President and CEO of the American Public Power Association - APPA, USA, gave a presentation on

Electric Utilities Offering Telecommunications Services to Communities

The American Public Power Association, based in Washington D.C., is the service organization for more than 2,000 community-owned electric utilities in 49 US states. Collectively, these utilities serve more than 45 million people. APPA has a very diverse membership, with some very large and some very small systems. The city of Los Angeles is the largest member; other large members include San Antonio, Seattle, Nashville, Cleveland, and Phoenix.

There is broad interest among APPA's members in providing advanced communications services. Over 700 out of the 2000 members are currently providing some form of communication services to their communities. There are a number of reasons why these members become involved into the telecom business or at least have invested in communications infra-structure: The infrastructure for electric utilities is very similar to that of communications.

Even before the advent of broadband, communications played an important role in the operation utilities, because landline, microwave or radio communications were needed, e.g. to control and dispatch remote generation from the centralized control center. With the advent of broadband, utilities took a real interest in seeing what they could do to expand their use of that to enhance the reliability and safety of their systems. In the 90s, many of APPA's members invested in broadband to automate their distribution and transmission systems. This has some real advantages for the consumer, as it allowed restoration much more quickly and much more safely.

Sometimes broadband was available from an incumbent provider, but in most cases, the extent of the broadband needed by APPA's members required their own investments. In fact, many of them overbuilt existing telecommunications and cable systems in order to provide their own networks. Once done, they had the opportunity not only to support the operation of the electric system but also to provide communications services to their communities.

Broadband will also play a role in the context of smart grids. There is a significant additional investment in smart grid related technologies among public power utilities -- in part due to the stimulus offer of the US recovery act. Last year, APPA's members received over $600 million in matching funds, which means that they had to provide a matching $600 million. In most cases this does not involve broadband investment but shows how the industry is trying to apply the use of that to improve electric systems.

Advanced technologies basically would allow an increase of interactivity on the grid. In order to optimize resources in the future, and in particular to take advantage of an increased amount of renewable resources, there is a need for a greater degree of interactivity.

Most of the renewable resources that have been installed in last years have been wind power. However, most land-based wind blows at night, and night is when the electric load is the lowest. It would be nice to be able to use that wind power more efficiently, e.g. by controlling appliances to some pre-approved software packages that the customer needs to agree on. It allows a lot of advantages to both the reliability of the system and savings that can than be passed on to the consumer.

As systems that are owned and controlled by their communities, public power systems have a direct interest in promoting things like economic development, quality of life, public health and safety -- and when you enhance your communications capabilities, you do all these things. Moreover, these investments increase the communities' tax base through economic development and increases and diversifies the utilities' revenue string. For instance, Bristol, Virginia, a mid-sized system, was the first municipality in the US to offer triple play. Basically its aggressive investment in broadband has attracted a number of major employers. Chattanooga, Tennessee, is currently offering 1 Gigabit services. It is probably the only community in the US doing that.

THOMAS J. SUGRUE, Vice President for Government Affairs, T-Mobile USA, Inc, USA, [www.t-mobile.com], provided an excellent and concise talk on

Mobile Broadband in the US

With 34 million subscribers T-Mobile is the fourth largest mobile carrier in the US T-Mobile is the brand for Deutsche Telekom's mobile systems.

This is a very exciting and challenging time for mobile broadband. There has been great progress made over the last few years in really making the mobile Internet a reality. There have been tremendous investments in networks and devices and the development of applications. It was a sort of virtuous cycle of investment and development in networks leading to better and more powerful devices, leading to applications that can run on the devices using the bandwidth on those networks – a virtuous cycle driving innovation, investment and productivity. However, for network operators, this virtuous circle can also be a vicious circle as they struggle to keep up with the capacity and the bandwidth and the quality of service that the customers are demanding.

Another aspect in the context of investment challenges is the use of the radio spectrum available. It is a critical challenge the US is facing.

The FCC in its National Broadband Plan, which was released in March, did a tremendous job in putting its finger on the problem in its analysis and policy prescription. Especially the people who put together the spectrum chapter did a great job. It identifies the need for reallocation in the US of 300 Megahertz to the mobile broadband industry for mobile broadband uses by 2015 and 500 Megahertz by 2020. This reallocation will be critical to mobile broadband to really fulfill its potential in the US

Spectrum is the lifeblood and oxygen that drives that virtuous cycle. Without it, a fully competitive market would not be possible. There is great competition in mobile broadband in the US: In Washington D.C., there are six mobile broadband providers, the four national

providers AT&T, Verizon, Sprint, T-Mobile, and Leap Wireless and Clearwire. There are six competing providers offering different services and different price points. In order to keeps that competition going, additional spectrum is needed. It is also necessary for innovation and reasonable pricing. If spectrum is scarce it will become another driver on the price side and will just drive down demand and use.

It is also necessary for the quality of service and the international competitiveness of the US In Europe and throughout the world countries have been able to identify spectrum. In Germany there was a recent auction earlier this year of about 360 Megahertz of spectrum. The US should do something similar. The challenge is that the spectrum is now licensed and being used – in some cases not used very intensively, but used for different applications. Spectrum has to be reallocated from either the private users or government users.

The FCC has tried to come up with win-win solutions. Rather than taking resources from someone and giving it to someone else, it is better to facilitate market transactions that could enable that to happen in a voluntary way. However, given the timeframe involved it is important to start getting solutions. It can take four or five years from the time one identified a band to be reallocated and the reallocation itself.

THIERRY ZYLBERBERG, Executive Vice President in charge of Strategic Partnerships & General Manager of the Health Line of Business at France Telecom, France, delivered a talk on how broadband applies to the healthcare industry:

eHealth: Opportunity for Broadband Development

Healthcare is a challenge in all economies, whether developing or developed. Population is aging: Today in Europe 1 European out of 4 is over 60 years old. A French study found that in 2050 there will be 200,000 people over 100 years. In 2050, there will be about 5 million people over 75. A tsunami of older people is on the way and represents a significant challenge for every healthcare system.

At the same time, certainly also due to the aging population, there is a rise in chronic diseases. Today, this concerns 41 percent of the patients and represents 83 percent of the costs for healthcare around the world. There is an incredible pressure on every healthcare system in the world.

Everywhere in the world, healthcare expenses are increasing about 5 percent per year. In good years, economies were growing at an average of 2.5 percent -- which means that healthcare spending is increasing twice as fast as economic growth. Such development makes people think about ways, methods or technologies which can help meeting this challenge: eHealth, mHealth, telemedicine, or telehealth – there are many terms to say more or less the same.

Applications can be grouped in three different categories: The first one concerns applications for health professional services: These are applications to transfer information from one health professional to another one, e.g., within a hospital, or between a GP in town and a hospital or between two hospitals. In each case, the information comes from a health professional and goes to a health professional.

The second category of applications, being very different from the first one, can be called health management. Chronic diseases are rising and much of the transformation of the health system will come from monitoring people suffering from chronic conditions, such as cardiac pathologies, asthma, diabetics, etc. Monitoring patients suffering from these diseases can actually improve their quality of life. Remote monitoring of chronic conditions will be a major issue in the future. The same goes for monitoring elderly people at their homes, as it will no longer be possible to accommodate all elderly people in specific facilities, such as retirement homes.

The third category concerns prevention and wellness and concerns applications for preventing health conditions before they arise.

Obviously, for a number of applications, there is no need for broadband. The example of remote monitoring of pacemakers is one: France Telecom is working with the medical device company Sorin to create pacemakers and defibrillators that transmit data on a patient's heart rhythms to clinicians. The amount of information exchanged corresponds to a couple text messages a day. There is no need for broadband.

Broadband is not necessary for every aspect of telemedicine. However, some will require it. Health professional services, which often need to transfer medical images from one point to another, need broadband. For instance, a MRI is several gigabytes of information. Moreover, broadband is needed for telepresence to be used in teleconsultations. There is a need for broadband in health professional services, but there is no need for it in health management.

There is no silver bullet. One should not believe that broadband will magically transform the healthcare industry. The experience curve is very complex and the adoption of that market very low.

LATIF LADID, President of the IPv6 Forum; Chair EU IPv6 Task Force; Emeritus Trustee Internet Society, IPv6 Forum, Luxembourg, presented

Cloud Computing, Internet of Things

It is amazing how much pressure is put on the Internet that gives us so many things – although there is a bit of plumbing work to be done to achieve all these great things. If we look at the wonderful story of the Internet starting in 1969: Apollo was launched in July '69 and between September/December there was the first version of the Internet based on a protocol called NCP (Network Control Protocol). It had an addressing of 28 which corresponds to 56 IP addresses. Ten years later, the current Internet based on TCPIP was designed. One of its first killer applications was the World Wide Web in 1995.

The biggest issue is currently that there are not enough IP for addresses, and the question is when complete IPv4 address exhaustion will occur. Predictions assume that this will be the case in 2011. This is one of the biggest challenges, especially in the context of smart grids, smart objects, the Internet of Things etc. Solving this problem requires some plumbing work, but also investment.

The Internet is currently run in just some places. It is comparable to the road system with its dirt roads, national roads and highways. While the industry is investing more in dirt roads and

national roads, the highways must be financed somehow – which makes the discussion about PPPs rather important.

Moving the Internet to broadband was the start of the first proper Internet, because now there will speed in the backbone. Then, there is the vision of the Internet itself: As it started, there has been the vision of the two-way Internet. Today, it is still one way. The US stimulus packages are very important and innovative. It is the first time that government is investing to support the industry. The same thing is also happening in Europe with the Digital Agenda. Such initiatives have already been carried out in Korea and Japan.

This will enable most interesting applications in the area of e-Health, e-Transportation, etc. There might also be a chance to fix the security and privacy issues. There are governments in favor of privacy and others are not. There is always the challenge to find the right balance. It will also be important to think about smarter villages, not always smart cities. It is a mistake to create digital divides even within rich countries. We certainly have some very interesting times in front of us.

STEVEN ADLER, Director of IBM Data Governance Solutions, IBM, USA, [www.ibm.com], presented IMB's views on the

Information Governance

Five years ago, IBM created the "IBM Data Governance Council" – a council federating organizations that care about the quality, the integrity, the security and the privacy of the information coming through the pipe. In 2006, IBM created a large model to benchmark organizational effectiveness in using information coming across the pipe into organizations because the company wanted to find a method that can be used to assess its own organizational maturity in how information was protected and used and how systems were architectured.

Today, this small group of companies, which in 2006 was 50, is a large global network of 700 individuals representing 200 companies. They are collaborating on a new maturity model to benchmark organizational effectiveness in the area of data or information governance. The group is collaborating online in a social networking environment to create semantic consistency and clarity. As an example of how the use of acronyms can lead to semantic inconsistency and misunderstanding, the acronym "ICT" -- the European acronym for Information and Communications Technology -- is often not clear to people from the US

Customers want data quality reported by region. They do not want to identify which information they can trust and which information they cannot trust. They want a single view of the truth. For instance, when Lehman Brothers fell, they had some advanced notice, but they really did not know what their overall exposure was. So they took 125 people and stuck them in a room for two weeks to figure out what the aggregate exposure to Lehman was. It took them two weeks and 125 people to produce a single view of the truth. That is obviously too long in most businesses.

Everyone wants to transform data into valued business information in order to make smarter and faster decisions. And if people have all that valued information, they want to protect it and secure it, so they can improve risk management in compliance. This all seems like basic things that everyone wants to deliver – but they are not: They are incredibly difficult things requiring very mature organizations to deliver them on a sustainable consistent basis.

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We spend $1.5 trillion a year on ICT, but we cannot produce these outcomes. Why not? Why do we keep doing the same things expecting different results? The Information Governance Community feels that the less we change the way we work, the less we use information as an enabler, the less we would achieve the desired outcomes. This is why the group collaborates. They are working together because they know that information itself can change organizational behavior when people are communicating and coordinating and collaborating. And, everybody can participate: This community is sponsored by IBM but it is set up as a free organization for anybody who wants to join. The participating companies are not just sitting back and saying "we need better standards for security and privacy", "we need to trust our information", but are working on it together. As a crowed-sourcing experiment, everybody can contribute ideas, leveraging the knowledge and wisdom of the crowd to improve practices, behavior and the maturity of the organizations. The intention is to fashion a new and larger maturity model that better describes organizational behaviors in different levels of maturity so that everybody can benefit. The community has representatives from all over the world and is easy to join at www.infogovcommunity.com

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Safer Services in a Digital Society

Executive Summary
(by Prof. J.-P. Chamoux)

The need for an increased awareness of digital security importance has been highlighted during many of the sessions held during this 2010 Washington Global Forum. Moderated by Prof. Michael Stankosky at GWU, hosting the Global Forum this year, the present session browsed through several of the main avenues concerning safer communication networks and trustworthy services.

The invited IT industry and service representatives mostly insisted on the need for safe and well protected services so that both the general public and corporate users gain confidence and share their information and trade involvement over all network facilities. Jeff Bruggeman of AT&T and Dennis Carlton of the IBM corporation insisted on the fact that government agencies, as well as commercial ventures operating over the net keep many traces of consumer's footprints in their own files. It is not simple business, Carlton said, to establish a single common selection of IT security and privacy issues covering under the same and unique umbrella government and commercial ventures! The stakes are so high that an adaptive and secure system for all environments, public and private, is now a must.

Bill Piatt of the General Services Administration of the US and Joe Jarzombek of the US Homeland Security Dept. both insisted on the important sociological change that make people's security and privacy much more difficult to assess today than before when everyone was known by name in his own formerly closed and much smaller human community. Privacy concepts then were much narrower in scope than nowadays, given the digital open world we live in at the present times!

Both Tom Flynn from the Gemalto corporation and Gerald Santucci from the DG Info in the EU Commission stressed that security matters extend quickly to a wide set of new areas including the so called 'Cloud Computing' networks and the 'Internet of things' connected to an extended number of industrial and distribution organizations working 24/24 over the Planet Earth, so that not only personal data but also process and storage data are now at stake for safer internet service.

Philippe Laflandre, Head of EADS corporate Trust Center, explained that the emergent fully digital process allowing providers to exchange certified information with their clients significantly enlarge the spectrum for trustworthiness and public provision online, a challenge that may improve the acceptance of electronic communications in a lot of new ventures where security requirements are of primary importance, including sectors like diplomacy, finance and the military.

Wrapping up this session, Prof. Julie Ryan teaching at the Department of engineering of the G. Washington University, recalled that privacy and security matters were already high on the public agenda during the 1970's when public attention was first drawn on computer and network frauds in the US and Europe as well. The time has come, she said, to re-investigate the same questions again but in a very different perspective where everyone of us is not only linked in but also much more dependent than before on the well functioning of the network for her own sake and well being!

The range of the speakers' nationalities, expertise, and topics -- from policy and governance to cooperative research programs -- provided insights into the complexities and range of issues that deal with security and confidentiality on the internet. It was apparent that there are many ways to tackle these issues, but there is no one global solution or organization to deal with these problems. We can expect that an international policy framework, that includes: trust, security, acceptance, privacy and data protection, standardization, and international dialogue – is vital to the effective functioning of government and business in our integrated global lives. All panellists noted a move toward such, but also acknowledged the complexities and limitations of achieving this. Nonetheless, the imperatives of achieving this will not go away, and become more critical as the internet continues to enlarge its dominance in our daily lives.

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The session's **chair**, **DENIS GARDIN, Senior Vice President of System Design Centre and Cyber Security Solutions, Cassidian, an EADS Company**, France, [www.cassidian.com], welcomed the panelists and provided a short stimulating introduction into the topic stressing that the session's topic is not only a technological one, but involves many different aspects, such as processes and well trained people. There is no perfect solution and the questions to be discussed in such a panel are: How to move forward? What are the emerging technologies? Can we fix the problem or do we need to review the fundamentals, the Internet and the way software is developed? It is important to start with a broad view -- not just to quick fix a problem but to look on the future.

The **moderator** of the session, **MICHAEL STANKOSKY, Professor of Engineering Management & Systems Engineering; editor emeritus vine "Journal of information and knowledge management systems", George Washington University**, USA, welcomed the participants and skillfully set the stage for the following presentations.

The issue of safer services, and in particular that revolver on privacy and confidentiality, is all around us. There is probably no person who would like anyone knowing everything about him, including their salary, their inclinations… And yet, it is possible to get all that information. It is staggering how much information someone can get if he really wants to. And the same mechanism to do that is so systemic to our society, that if it breaks down we cannot operate. These are the conundrums we are living in. There is no silver bullet – it is a very complicated arena, characterized by globalization, different standards, national policies, and laws.

JEFF BRUEGGEMAN, Vice President Regulatory Planning and Policy, AT&T, USA, [www.att.com], brilliantly elucidated some of the

Main Challenges to Improve Security and Safety

There are areas of consensus that can be built upon to look forward on how to create a more safe and secure environment. It is a conceptual framework of needing greater trust and establishing greater trust frameworks, especially with regards to the Internet, to allow this amazing economic and technical innovation to continue. Consumers have to feel safe and secure when they are using these services in order for that growth to continue. Especially as we are developing that types of services that allow them to entrust their most personal sensitive data online. Whether it is from a business economic perspective or from a government perspective, there is a common interest in establishing that trust framework.

There is a lot of recognition that, in order to address these challenges, there is no policy answer that cannot be accompanied by technical solutions and therefore we need PPPs to develop those standards and solutions. Whatever is developed from a policy perspective would not be meaningful to consumers, customers or users unless it is transformed into a workable technical solution for them.

There are several areas of tension: One is the temptation by all parties to fall back to traditional roles, where businesses try to avoid regulation and government is taking the position that these issues are too important to be left to a public private collaboration. In the area of security this would be a mistake. There is a need to find new ways to collaborate and to work on these standards.

A second challenge is that security and safety issues have to be thought of in the context of empowering the information usage at the same time. It is very easy to secure things by locking them away or cutting them off. But what we are really dealing with in the Internet is an explosion of the sharing of information and the collection and use of information. The challenge is, how to increase security while also increasing usage of information. When AT&T asks its customers how they feel about privacy, they still value it very highly, the same as security. At the same time, they value the services on the Internet very highly as well. The goal should be to give them both aspects of it. Both improving security and safety while also maximizing the usability of information and empowering that use of information.

One of the areas where some interesting things are happening is in the area of identity management as a way of helping to provide a more secure experience online. This is something that is being discussed all over the word. In the US it is driven by a White House initiative to develop voluntary standards for secure transactions and identity management. The idea being that this will enable more of a established ecosystem of trust relationships that can be used to help enable more secure transactions on the Internet. It is not a government mandate but they are really putting effort in it to promote the development of standards with the private sector. The idea being that this will establish more momentum and industry wide action. However, without a critical mass of industry participating in this initiative, it is very hard to realize this kind of a framework.

The same type of concept can be used to improve privacy on the Internet. If you thing about consumers wanting better information control and being able to both navigate the services they want on the Internet while feeling more in control of that information at the same time. One of the real challenges in this new world is that the customers want to use these applications platforms – so, commercial provider can get into a challenging situation, where the customers for the wireless service buying their mobile telephone from Apple and then they are buying applications from other parties, which creates a rather complex relationship.

Another really interesting area are the new uses of machine-to-machine data, which again causes significant policy concerns about security and privacy. Healthcare and smart grids are both areas where there is tremendous opportunity to make better use of information.

Progress is made where the government is helping to work with the private industry to build these considerations into the standards and products before they are deployed. As regards health-IT, there will be a lot of time spent thinking about security and privacy, including innovative new architectures to improve the security of health records. Surprisingly, from the very beginning, at least in the US, the development of smart grids has included reflections on how to empower and enable the information to be used by the consumer and how to build in privacy and security. There are ongoing cyber security standards but also a major report on issued by the US Department of Energy.

The most challenging area is probably the issue of global data usage and the challenges that it creates for governments from a jurisdictional standpoint. Whether it is law enforcement, access or national security or even privacy protection for consumers, there is a tension in that context of trying to figure out how to enable more uses of information with cloud computing while addressing very legitimate concerns that governments have about maintaining a safe and secure environment for their citizens. And then the other challenge being not let these legitimate concerns turn into barriers to the evolution and grow that will make better use of the information.

DENNIS CARLTON, Business Development, Strategic Planning, Biometrics, IBM, USA, [www.ibm.com], gave a most impressing expert presentation on

Doing More with Less
A Strategy for Improving Trust in Identities in an Era of Tight Budgets

Governments typically establish identity based on a wide range of information. It is a blend of public records, birth certificates etc. It is a combination of commercial information, occasionally biometrics are tight in to identity systems and then there is this relationship with other government issued documents. Together it establishes a footprint of the individual in the community. At the core of identity Is "who are you within your particular community" – and there is a whole lot of problems that occur when this happens.

Some of the weaknesses that have to be addressed: Each step of the identity process can be exploited resulting in identities that cannot be trusted. 'Proofing' documents can be fraudulent or fraudulently obtained. People can present themselves as someone else, either through a fraudulent document or a legitimate document that belongs to someone else. Commercial forms of evidence really do not directly address who the individual is. A bank for instance wants to know that they will be paid, but they are not as concerned about who is this individual. Biometrics do not always work. They do not work for every person or application and some can be spoofed. In the case of knowledge based authentication the possession of a key or correct information may be problematic. And finally, part of the problem becomes that a more secure appearing document, e.g. a passport with a biometric in it, can lead people to decrease vigilance and thus to increase risk. People will always find some way to work around any security measure if there is enough financial inducement in there.

Some recommendations to realize a strategy for establishing greater trust in identities: First, start with identity solutions that consider the risk associated with each form of transaction. The level of security needed to interact with an automated banking machine is distinctly different than getting a pass to get into a sports facility. Do not try to solve identity with one solution, with a standard form of risk analysis. Look at these as dynamic transactions taking place.

Do not try and bring all data around identity into a single data base. You got privacy issues, you have problems with bureaucracies that just cannot cooperate with one another, whether it is technically or legally. In fact, identity data is best known by the organization that has collected it. Establishing a brokered structure is a much superior way to handle identity rather putting it all in one single data base of sensitive personal data.

Use what already exists, clean up and leverage existing data. Constantly monitor the uses of identity information and conduct a thorough and continuous vetting of every enrollee and user, because peoples' footprint changes over time from an identity standpoint. Then obtain, manage and regularly update the user consent to authorize others to use identity data. And finally, exceptions will occur! Build a system that takes that into account so that the fraudsters do not use the exception process as the backdoor into the system.

If this has been done correctly, eventually individuals can work their way through their daily live securely using various forms of identity and authentication in a very seamless flow.

WILLAM PIATT, DAA Technology Strategy Office of Government-Wide Policy, General Services Administration - GSA, USA**,** delivered a most captivating intervention on the

Need for a Global Privacy Bill of Rights

There is a real pulling and tag between "how do I prove that I am who I say that I am". And then, how do I protect who I am from other people who are trying to figure it out for whatever purposes that they want to use it for.

People say that, long-time ago when everyone was living in villages, there was no privacy. Everybody knew everything that there was to know about you. To a certain extend this was true and that is one of the reasons people moved to cities. Because then it was possible to live next door to somebody for 20 years and never even know his name.

The Internet has taken this entire thing and turned it on its head. Now people who do not know you and have never met you can know much more about you than even the members of your family. Some of this is self-inflicted. We willingly give up our privacy in exchange for frequent flyer miles, we let them keep a data base of everywhere we have gone with planes, when we have gone in grocery stores, drugstores etc.

Some of this is unintentional. Cell phone providers have the potential to know more about an individual than anybody anywhere. For instance, when Governor Schwarzenegger started tweeting and published photos on a regular basis, someone looked at the photos on Twitter and discovered information embedded in the photos from the smart phone informing about the place and the time where the photo was taken. This person then started mapping the movements of Governor Schwarzenegger on a daily basis based on the tweets.

The real issue that we have today is not that people want to know about you to prove your identity. All they want to know about you because of who you are, but it is that by taking discrete data bases in the machine-to-machine kind of discussion and mashing up this information. Attention can be drawn to you by someone who is interested in you only because of the patterns of behavior you exhibit on a daily basis. And as a result they start studying you and learning about you.

We all feel more or less okay, that if it is research where you looking for patter of behavior across society that is one thing. But if you are trying to predict the actual activity of a given human being at a given point in time, than this starts to become an invasion of privacy. This is really the crux of identity we are dealing with today and the crux of what politically could turn into a huge backlash.

It is particularly in the context of a global sourcing environment and cloud computing. The individual people's, individual company's and individual country's efforts to manage this activity and to try to control it creates fragments and creates schemes through which almost anything can occur.

It is time to step up and have some sort of a privacy bill of rights on a global basis, e.g. through G20, that actually starts from the opposite end of the spectrum from the way we would typically do these sorts of things. We need to start from the end of the spectrum. This is the most stringent restricted approach that should apply to everybody. And then, if someone does not want to have that much privacy, they can opt-in to less privacy. The biggest problem we have today is that all privacy statements are always opt-out. The privacy element needs to be opt-in.

There is a need for a global standard. It needs to take into account that electrons need no visas; it needs to very directly address personal identifiable information; it needs to directly address mashing up information from across multiple data bases where we agree that it is collected secretly but we have not explicitly agreed that it is mashed up across. And this needs to be done on a global basis.

JOE JARZOMBEK, Director for Software Assurance, National Cyber Security Division, US Department of Homeland Security, USA, provided remarkable and very detailed presentation on

Cyber Security Hygiene for Software that Enables our Digital Society: Mitigating Supply Chain Risks

Our lives are influenced by the security decisions that people have made for the software that enables all the rich functionality of items that we have in society today.

Everything today is connected. One system's weakness makes us attackable because of that. Our cyber infrastructure today represents the convergence of ICT. It is inherent to nearly every aspect of modern life. Cyber infrastructure, emergency services, government, banking and finance, transportation, energy – it is all enabled through ICT, and more significantly, it is enabled by the software that runs this infrastructure.

Most people are thinking of critical infrastructure in terms of its physical assets. But the more and more one looks at it, not only it is enabled and run by software -- it is controlled by software. However, there were no international standards that were used for delivering that software. Our society requires licensing and credentials of people providing all kind of services, but there is no licensing or credential requirements for people who develop the software that runs the critical infrastructure.

Our digital society relies on software to make us run, to make us safe and secure. For not addressing these issues we are challenged as a society. The critical consideration is that software is a core constituent of our modern products and services. It enables functionality and business operations.

We are moving to cloud computing. What cloud computing has in common with service oriented architecture, with software as a service, is that they all sold and delivered as services but they are implemented in software.

There is a dramatic increase in business risk due to increasing software dependence and system interdependence. Software is the weakest link. But software size and complexity today obscures intend and precludes exhaustive test. Most people who are running critical infrastructure simply do not understand the software that is running it. But more and more we are moving to outsourcing and the use of un-vetted software supply chains. Here, un-vetted means that not only you do not know who you are dealing with, but of those who you do know you don't understand if they have fundamental capabilities of delivering secure products and services.

The attack sophistication became to easy. Anyone can hack in, including our critical infrastructure. Another critical consideration is the reuse of software, that tended to be viewed as the savvier of great software engineering, but has unintended consequences increasing number of vulnerable targets.

We are understanding that software is a fundamental part of this, but complexity does hamper our ability to predict code behavior. Any assurance claims about security and safety of critical applications are very limited today. Without adequate diagnostic capabilities and commonly recognized standards from which to assert claims about the assurance of products, systems and services, the "providence and pedigree of supply chain actors" become a more dominant consideration for security/safety-critical applications: Enterprises and consumers lack requisite transparency for more informed decision-making for mitigating risks, and favoring domestic suppliers does not necessarily address „assurance" in terms of capabilities to deliver secure/safe components.

There are several needs that arise especially as enterprises rely on outsourced services: We need internationally recognized standards to support processes and provide transparency for more informed decision-making for mitigating enterprise risks. There is also a need for „assurance" to be explicitly addressed in standards and capability benchmarking models for organizations involved with security/safety-critical applications. We need more comprehensive diagnostic capabilities to provide sufficient evidence that code behavior can be understood to not possess exploitable or malicious constructs. And we need rating schemes for software products and supplier capabilities

Software assurance provides a focus for secure software components, security in the software life cycle, software security in services, and software supply chain risk management. Every organization uses risk management. But risk management very much depends on where you sit: At the enterprise-level focuses on regulatory compliance, changing threat environment, and the business case. The project-level focuses on cost, schedule and performance

Software supply chain risk management traverses enterprise and program/project interests and is critical in services. Software security in service level agreement should be a dominant consideration as more enterprise functions are enabled through "services".

The new issue is virtual security. In addition to physical security, we now worry about cyber risks: Theft of intellectual property, fake or counterfeit products, import/export of strong encryption, IT/software with deliberately embedded malicious functionality (logic bombs and self-modifying code, other "added features" like key loggers, deliberately hidden back doors for unauthorized remote access), as well as exploitable IT/software from suppliers with poor security practices (failure to use manufacturing processes/capabilities to design and build secure products (no malicious intent) in delivering exploitable products, resuppliers often lack incentives and capabilities to adequately check content of sub-contracted and outsourced IT/software products).

There is a need for rating schemes: Rating of software products needs to be supported by automation, standards-based, rules for aggregation and scaling. It has to be verifiable by independent third parties. Labeling should support various needs (e.g., security, dependability, etc), and it has to be meaningful and economical for consumers and suppliers. The rating of suppliers providing software products and services has to be standards-based or model-based frameworks to support process improvement and enable benchmarking of organizational capabilities. There should be credential programs for professionals involved in software lifecycle activities and decisions.

THOMAS FLYNN, Director of Sales & Marketing for Enterprise Security, Gemalto North America, USA, shared with great know-how and awareness some of the challenges related to

Authentication in the Cloud –
Breaking Down the Dilemma of Compromising Security Vs Convenience

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

With regard to security, the number 1 concern for IT organizations is security of data, security of information and privacy. The lasted reports stated that 1.5 billion dollars will be spent on cloud security by 2015.

The challenge in the context of user authentication is a balance between security, convenience and cost. With regard to security, it is important to implement the right level of security according to the anticipated risk level – not more, not less. Not every security solution is right for every use case. With regard to the cloud, depending on what has to be protected, e.g., if an individual is accessing payroll information or somebody is accessing Google Apps, or a CFO is accessing very sensitive financial information, each of those use cases requires a certain amount of attention to the risk profile and an accordingly chosen solution to protect that.

With regard to convenience in the cloud, preserving the online convenience for end-users is essential, particularly in cloud computing. From a cost perspective, the overall cost, including recurring costs have to be optimized and fully controlled. In the cloud scenario, the "pay as you go" utility model is very critical.

An important attribute of strong, usable 2FA authentication is "non intrusive" to allow anywhere access. The days of middleware and deploying a lot of applications on the end user devices is over; The solution should be web based "0 footprint" or embedded in operating system. It should be federation capable as well and allow identity aggregation.

The solution has to be standard based to ensure vendor neutrality. Proprietary solutions are more difficult to integrate and more costly to maintain. It should be portable so that user will always have their credentials -- in the wallet, on your phone, becomes your flash drive.

The solution has to be intuitive to use to avoid learning and change fear factor. It has to be adapted to the risk profiles and protect identities from phishing to man in the browser and identity sharing. Its deployment has to compatible with cloud principles. Organizations should not have to spend a lot of money to build on-premise applications in the world of the cloud. It should enable web based and seamless user experience (like Amazon 1 click). No pain for the service provider (no device handling, fulfillment and with auto provisioning) and a "metered" pricing model. And last but not least, it should be available everywhere your customers are.

In conclusion, to be able to order device, receive it and use it, Amazon web service, which is an infrastructure service provider, provides tokens to its customers. These are developers and administrators who manage software as a service application on the Amazon infrastructure. They are able to go to this web site with 1 click purchase the device, get the device in the mail, go ahead and initialize it on the same web site and begin using it. These individuals are not investing in the infrastructure – this is taken care behind the scene. True

cloud based authentication – it is possible and it is what organizations should demand from service providers.

GERALD SANTUCCI, **Head of Unit "Networked Enterprise and RFID", DG INFSO, European Commission**, delivered an inspiring talk and invited the audience to a journey through the Internet of Things:

Security with RFID

A EU public consultation launched in 2006 showed that 70 percent of the Europeans were scared about the privacy implications of RFID. The extensive consultation of all stakeholders that followed this initial survey on RFID gave rise in May 2009 to a Commission recommendation on the privacy and data protection aspects of RFID usage.
While working on RFID, it became clear that the future would not only be RFID tags, but also sensors, wireless sensor networks, and probably in some years nano-technologies. Such a future represents not only a technological challenge, but also a challenge for the society and individuals. The Internet of Things refers both to networking and to objects. The relationship of individuals to objects will change. Objects can be artifacts (hand-made), machines or products (mass produced), gizmos (carrying much richer information), *spimes* (designed for the techno-social interactions that unite people and objects), and by the middle of this century *biots* (i.e. entities that are both object and person). There are today about 70 billion machines in the world and only 1 to 2 percent are connected to the Internet today.

And there are about 100,000 billion 'things'! Thanks to IPv6 and the technological evolution of the Internet, it will be soon technically feasible to identify and connect to the network each of these things. Given that, the EC decided in August 2010 to create a European Internet of Things expert group which has already met once and is composed of 50 members, among those also a US stakeholder. Over the next 2 years, the expert group will support the EC to work on identifying and addressing the policy implications of the Internet of Things – Internet of Things in the sense of communications between humans and objects and among objects themselves ("talking objects" or "blogjects").

The policy implications are tremendous. One of them is privacy: When the Internet of Things will become reality; there will be an enhanced possibility of information collection about objects and people. So far, the information about identified or identifiable persons is collected directly through data controllers or even the data subject and that this processing of information is limited by the existing management tools. This will change, because the Internet of Things bears the potential to facilitate and to multiply the exchange of information and its processing. There will be an impact on the collection, use, consultation capabilities, transfer or access of information by a diversity of parties in a context where geographical barriers get completely blurred.

Soon, these objects will become autonomous, which means that they will be able to communicate and make decisions without human intervention. Standardization will become a difficult task: How to standardize something that by definition is uncontrollable, which involves a large number of interferences and exceptions. As Alex Fuss, from the CSC's Leading Edge Forum, put it 2 years ago: "For most people, privacy will end in 2013, or a little beyond that".

This will happen if nothing will be done. The EC is currently defining a new proposal for a revision of the EU data protection directive. This will be debated for 2 or 3 years, but there are some new elements in this comprehensive approach on personal data protection in the

European Union: Of course, the principle of collection and purpose limitation will remain. Beyond that, there could be "the right to be forgotten", which is the right of each individual to control what is done with his or her personal data -- that is to say the fact that one can delete or update the data.

There could also be the right to the "silence of the chips". This is the possibility given to individuals to disconnect from their networked environment and to reconnect whenever he or she wants. In order to achieve this, it is not enough to define a law. It is first of all a technological research work to be done in order to develop the software that will enable the functionality to be "on" or "off". This does not exist yet and the EC, together with countries around the world, is working to find a common understanding to invest a critical mass of money in order to develop such a software.

VIRGILIU STAN, General Manager at Items International for Eastern Europe, Tîrgu Mureş Digital City Strategy Consultant, Romania, provided some very interesting insights into

The Digital Strategy of Tîrgu Mureş

The city of Tîrgu Mureş is located in the Transylvanian region in Romania. Tîrgu Mureş is one of the 40 leading municipalities in Romania, it is very closed to some of the main municipalities of Rumania and not very far from Bucharest. Together with the metropolitan area, Tîrgu Mureş has a population of about 180,000 inhabitants. Located on the major European road corridors, the city is one of Rumania's famous health and education centres.
The Mayor of Tîrgu Mureş, Dr. Dorian Florea, is working in the administration since 14 years. He is Mayor of Tîrgu Mureş since 2000 and is currently in his third mandate. He is also vice president of the Rumanian Association of Municipalities. The city has strongly developed under his leadership.

The city of Tîrgu Mureş tries to follow the example of the French city of Issy-les-Moulineaux. Issy-les-Moulineaux once has been a very poor city in the suburbs of Paris, but having a very strong political commitment from its Mayor André Santini working very closely with the private sector, the city has transformed and now, Issy-les-Moulineaux is one of most important digital cities in Europe.

Tîrgu Mureş has the same political commitment of someone who is always present. Besides some geographical advantages, the city wants to build upon innovation and plans to use PPPs as the main financing model.

Today for the very first time, Tîrgu Mureş publicly presents its digital strategy. In fact, there are two types of strategies: the first one is the ICT strategy and the second one the urban strategy. Based on PPP, the city wants to develop its ICT infrastructure. Upon this layer a smart card infrastructure will be build up. The city plans to use one multi-application smart card as authentication instrument and digital signature for all the applications used.
At the same time, Tîrgu Mureş wants to become one of the first medical informatics science cities. The city will work together with the main IT and medial companies in order to develop a science park specialized in medical informatics.

Tîrgu Mureş invites everybody interested in cooperation or collaborations with the city to come to Tîrgu Mureş on 9 December 2010, when the Digital Strategy will be officially launched.

PHILIPPE LAFLANDRE, Head of the EADS Corporate Trust Center – ECTC, EADS, France, [www.cassidian.com], delivered a most illuminating talk on a very ambitious transatlantic secured collaboration programme:

Secure Collaboration:
How Global Defense & Aerospace Competitors Collaborate

The programme for secure collaboration within the aerospace and defense industry has been created in 2002 and assembles the leaders of the industry. On the US side these are Northrop Grumman, Lockheed Martin, Raytheon and Boeing and on the European side these are Finmeccanica, BEA Systems, Rolls Royce and EADS.

These companies will define together the foundations of how to trust each other even though they are competing in the same market. There is very high competition but at the same time a very strong need to cooperate. One reason for that being that they all share the same suppliers at one point or another.

Within the definition of a common framework for federated collaboration, various steps have been already done: First of all the definition of the framework of identity management and assurance to provide assurance that collaborative partners can be trusted, to meet government agencies' emerging requirements for identity assurance across domains, to establish common credentialing standards that accommodate and span national jurisdictions, and to protect personal privacy data of employees. But also data protection, which the companies are still working on, to define fine grain access right attributes for data labeling and data right's management, to establish "application awareness", demonstrate compliance with export control regulations, and protect the corporate IP in collaborative and other information sharing programs. Facilitation of the secure collaboration to provide collaborative toolsets that will interoperate with customers and suppliers and facilitating the re-use of collaborative capabilities among multiple programs is the most advanced issue. This is mainly due to the fact that governments in their procurement actions towards the industry are now clearly stating that they are willing to have TSCP (Transglobal Secure Collaboration Program) specification in the response that is given by the potential bidders.

There are four strategy goals, which are sharing, compliance, interoperability -- there is no way to do anything proprietary in this field -- and to make sure that the TSCP will be applied not only in an transatlantic environment but around the world. The partners have delivered the identity framework, the identify and information attributes, also known as labels, and the legal framework to trust. All those items are available for the industry to be read and to be implemented. Major players have invested heavily in a trustable and interoperable infrastructure. The way this trust and interoperability is made available is through an entity called "Certipath" to which all partners contribute and cross-certify their infrastructures and processes from a nature, security and IT point of view. A third party model is used to make sure that the trust fabric from one partner can be accepted without any further verification by any other partner. This is very convenient for all contributors of the value chain to which the digital certificates – as the virtual representation of trust -- can be distributed.

The **commentator** of the session, **JULIE RYAN, Associate Professor and Chair, Department of Engineering Management and Systems Engineering, George Washington University,** USA, delivered an excellent conclusion of the session:

From an educated perspective one discovers that not one of the panelists were talking about the same thing when they referred to security – and that is the fundamental challenge when taking about engineering security: What does it mean to be secure? What does it mean to establish security? The panelists mentioned collaboration, absolute identify, the right to be forgotten – which to some extend are contradictory, the ability to enable excellent innovation and information technology – and all of these things based on an infrastructure that even though we trust it, is fundamentally untrustworthy.

This is not a new topic. The first formalized investigation to the concept of what is now called "cyber security" was published 40 years ago in 1970. And we continued to reinvestigate these issues and forget the lessons we have learned and decided that we do not want to take the time it takes to do it right and not to not follow our standards, our policies and procedures. The real lesson here is "pay now or pay later". We are in the process right now of paying what we should have paid 40, 30 or 20 years ago and we will continue to burden on our grandchildren with these requirements as we continue to not learn the lesson, unless something fundamentally changes.

With this whole notion of increased interconnectivity, it is not just an individual's issue that becomes important; it is also geopolitical competition and international corporate competition. We have seen the cyber attacks in Estonia in 2007, followed by those in Georgia in 2008. There is a whole issue of what defines an act of armed aggression in cyber space and how does that interact with our policies, procedures and standards being developed for what ought to be a trustworthy infrastructure.

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DAY 1 – AFTERNOON – PLENARY SESSION

The session's **moderator GIORGIO PRISTER** begins by giving an overview of the opening afternoon session. This session treats several topics, each representing different aspects and areas of application of ICT in Government innovation. They represent an introduction to the two next sessions on Collaborative Government and eProcurement.

The presentation by Danilo Broggi is focused on eProcurement: ICT as the driver of the model of economic development from the EU digital agenda.

The presentation by Jean-François Junger is centered on "EU Malmo declaration and focus on e-participation and e-empowerment.

Tom Wilkey shares his insights with us on the Innovation in the electoral processes in US

Anja Wyden Guelpa presents to the audience the innovative State of Geneva approach on the Management of risks in the electoral processes.

Mark Cleverly gives a presentation on "The "decade of smart" - the key changes in technology and society opening up for potential solutions for societal priorities"

Giorgio Prister – gives a speech on the Measurement of citizen participation.

Although these topics are covering quite different areas of application they share a common thread related to the increasing relevant role of citizens and businesses participation to governance i.e. *"ICT as the engine to shape a new society and economy with the active participation of citizens and enterprises"*

DANILO ORESTE BROGGI, Ceo Consip, Italy, [www.consip.it], gives the following speech entitled:

ICT and Competitiveness

Ladies and gentlemen, good afternoon.

It is a pleasure to be once again at the Global Forum for my 5th consecutive time.

And it is a pleasure to see that every year the quality of the conference grows and that we feel an ever greater need to talk about ICT.

I believe that this is so because every year the correlation between ICT and growth and competitiveness becomes clearer and more evident.

Investing in ICT is like sitting on huge reserves of oil and other natural resources.

The recently published European Digital Agenda underlines the central role played by ICT in the creation of a new phase of intelligent, sustainable and inclusive growth.

The agenda sets seven priority action areas, as a general framework from which each member state shall identify its national action plan.

Despite the general consensus that ICT plays a progressively growing role in the global economy, the European picture shows a non-homogenous situation. We have low levels of ICT literacy along with excellencies in the use of mobile technologies. We have to consider this when we look at the most recent data on ICT use and development.

We all know that growth and competitiveness are closely connected.
The recent World Economic Forum "Global competitiveness 2010-2011" report analyzes 12 pillars of economic competitiveness in 39 world countries. The report identifies, on the one hand, the characteristics of the individual national economies (factor driven, efficiency driven, innovation driven economies), on the other a global competitiveness index**.**

Basic Requirements	Efficiency Enhancers	Innovation and Sophistication
Institutions	Higher education and training	Business sophistication
Infrastructure	Goods market efficiency	Innovation
Macroeconomic environment	Labour market efficiency	
Health and primary education	Financial market development	
	Technological readiness	
	Market size	
Weighted index: % mix of the indicators determines the economy typology		
▼		
factor-driven economies	efficiency-driven economies	innovation-driven economies

Source: World Economic Forum, "The global competitiveness report 2010-2011"

The report clearly shows that the ICT industry —including telecommunications operators, computer and software producers, electronic equipment manufacturers— is playing an increasingly important role in the global economy as an engine of growth,

ICT created approximately 5 percent of global Gross Domestic Product growth between 2003 and 2008 and accounted for 5.4 percent of world's GDP in 2008.

This figure is expected to reach 8.7 percent by 2020.

ICT delivers not only growth, but also social benefits. The industry has a big role to play in improving education, healthcare access and services. And recent McKinsey research shows that ICT can potentially contribute to reducing worldwide CO_2 emissions by 15 percent in 2020—an enormous amount.

ICT enables economic growth by broadening the reach of technologies like high-speed Internet, mobile broadband, and computing.

Expanding these technologies itself creates growth, making it easier for people to interact and making workers more productive.

For instance, McKinsey estimates that just bringing mobile broadband levels in emerging markets up to those of more developed markets could add between 300 and 420 billion US$ to the world's GDP and 10 to 14 million new jobs in areas like equipment manufacturing and outsourced services .

ICT's role in enabling economic growth has grown as governments have been investing to stem the effects of the global financial crisis.

Countries that have significantly invested in ICT between 2007 and 2009 have a higher ranking in the WEF "Global Competitive Index 2010". Switzerland, number 1 in the ranking, with an index of 5.63, has invested an average of 3.1 percent of its Gross Domestic Product in ICT.
As this chart clearly shows, the Top 5 countries ranked in the "Global Competitive Index 2010" are those that have made the biggest investments in ICT.

Country (rank +score)	Overall Index	Basic requirements	Efficiency enhancers	Innovation
Switzerland	1° (5,63)	1° (6,05)	4° (5,41)	2° (5,71)
Sweden	2° (5,56)	3° (5,98)	5° (5,32)	3° (5,67)
Singapore	3° (5,48)	2° (6,05)	1° (5,49)	10° (5,07)
USA	4° (5,43)	32° (5,21)	3° (5,46)	4° (5,53)
Germany	5° (5,39)	6° (5,89)	13° (5,11)	5° (5,51)

ICT acts as an engine of growth also helping Public Administrations work better and more efficiently.

I would define digital innovation in the public sector as the capacity to use digital technologies to increase internal efficiency and service quality to citizens and businesses, by cutting costs and increasing participation. This is what we mean by e-democracy and e-participation.

A digital Public Administration helps the private sector work better in 2 ways:

   A)   The processes, infrastructures and systems that are the engines of the administration enable the delivery of high quality services to citizens and businesses.
   B)   The capacity of using these digital services is made available to citizens and businesses, increasing the level of computerization of a country.

And, forgive me if I seem to talk shop, but I must say that a very positive and encouraging example of the improved services that a Digital Public Administration can deliver to citizens and businesses is provided by eProcurement.

Today in Italy the word e-Procurement is no longer an English trendy yet obscure expression. Today eProcurement is a daily activity that is carried out by the Italian Public Administration.

Public buyers have understood the opportunities that are offered by this tool in areas such as process simplification, time saving and cost cutting.

We also have to consider that, due to the global crisis, today - more than in the past - these same buyers have to be more careful in how they spend their money.

Finally, I would also point out that ICT in Public Administration's contribution to the rationalization of expenditure frees resources that can be put to other uses, especially in the social sphere.

Thus, ICT acts as a multiplicator of growth not only in the private sector, by making companies and workers more efficient and productive, but also in the public sector, by increasing the number of stakeholders actively participating in the digital society.

A more detailed presentation of the benefits of the use of eProcurement will be given in the following session 4-2 on "Collaborative eProcurement", where some of the major global eProcurement agencies will share their experiences and the lessons learned.

I warmly encourage you to attend that session and I thank you for your attention.

JEAN-FRANCOIS JUNGER, Head of Sector, ICT for Government and Public Services, DG INFSO, European Commission shares with the audience his insights on the EU Malmo Declaration and its consequences. His presentation is entitled

Political Priorities; User Empowerment, Single Market, Efficiency and Effectiveness

Last November the Members States and the Associated States met in Malmo and reached an agreement to launch a Declaration which sets the priority for the next 5 years in terms of eGovernment.

The declaration has 4 priorities:

1) User Empowerment

How to promote and achieve citizens and businesses participation.

2) Single market

The EU is focused in fully make real in all areas the EU- single market goal, especially in what relates the interoperability of Public Services across the Member States.

3) Efficiency and Effectiveness

This priority refers to the need that the administrations are more efficient and effective in the delivering of services to their businesses and citizens.

The objective is to make sure that the key elements required for all the objectives to be reached are put in place.

Regarding the users' empowerment, many elements are hidden behind and the scope is really to try to benefit from what society is producing in terms of social networks, activity on the Internet... and to offer to citizens and business the possibility to work in a smoother way with the administration. We must make sure that when administration offers services, they correspond to what the businesses and citizens want. But we have seen so far in Europe that most administrations are setting up services and implementing them the way they believe they should be run. Civil servants, especially those on the field, tend to complicate things and deploy services in a way far more difficult than the reality needs. Therefore the citizens and businesses tend to be unsatisfied and lost. The outcome is that the uptake of the services that administrations are putting online is rather low.

The second element of empowerment is transparency. If we want citizens to trust we must be transparent. We should publish and leave the information public in order to let the citizens be in measure to monitor the Public Administration. There is an excellent example in the USA with "Spending US" where citizens can monitor the investments of the Federal State in the different US States. The EU Commission had discussions to do the same in Europe so that the regional funds could also be visible. There are also many other examples of information, like the results from Eurostats, that should be widely available.

Another point is the reusability of the information. Public administration owns a lot of information and knowledge. Most of the information could be reused by third parties to offer new services. That is why the EU wants to make sure that public administration becomes more open and offer its information to third parties. This could be extended to services. The Public Administration can open its information and leave third parties to use it differently and offer new and innovative services to citizens and businesses. In the EU, we can take the example of the service directive that requires that business can open a new business anywhere in the EU through a single contact. This requires that the administration creates that point of single contact. But through this point, the businesses can perform only their administrative requests. However if we take a user point of view what he needs is not only what he is legally obliged to do but there are other activities: such as creating a bank account, looking for locations, premises, facilities … for his new business. Why not to authorize a private entity to fulfil more comprehensive services?

The last element of empowerment is participation or eParticipation, how can we live and let citizens be more active more present within the political process? In the EU the participation of citizens is low. The distance between EU and citizens is quite high. By opening access to the information and to the debates, citizens can follow more and participate, they can participate closer and more effectively. An example of participation is related to petitions: the Lisbon treaty, foresees that is a petition obtains at least 1 000 000 signatures, the commission must take action on that.

Empowerment is a combination of many different elements. Since 4 years the EU Commission has launched a series of pilots in order to validate and demonstrate how the eparticipation can enable citizens, for example through their social network activities, to follow what the EU parliament is doing but also it can enable the national parliaments to collaborate more with the EU parliament and to launch all kind of activities making political process far more transparent.

Empowering and enabling citizens to actively work with the public administration is fundamental if we want also to have a high economical impact and not to see the administration as a burden but also as an effective way to make development happen.

TOM WILKEY, Executive Director of the US Election Assistance Commission (EAC), made a presentation about
Innovations in the Electoral Process

He started by talking about how in US there is a much decentralized voting administrative processes. This is mandated by the US Federal Constitution since 1799. In the US constitution, the management and the administration of the election was reserved for the State and Local communities; it is still the case today. Over the course of the last 40 years the federal government has taken some action in the area of elections like with the National Registration Act and the Help America Vote Act which lead to the creation of the EAC. Also was voted the Move Act for military and overseas voters empowerment. But even with those federal laws the administration of elections is still reserved to the State and Local organizations.

After the 2008 election, the EAC was able to provide for the first time 3 billion dollars for the improvement of the election administration at the State and local level. It has been used primarily for new voting systems, registration systems and other technology improvements.

The use of technology in US has expanded in the 5 to 10 years with different degrees depending on the electoral jurisdiction. The US election jurisdictions span for instance from the county of Los Angeles with over 5 million registered voters, to towns or cities with less than a thousand or a few hundred voters. The level of the use of the employed technology depends on the size of the jurisdiction, the size of the budget available and most importantly the will of the local jurisdiction, because it is primarily funded by those local jurisdictions.

The innovations that are used for the election are various. For small and middle-sized jurisdictions including the DC, the e-poll technology is used; there is no longer paper at the polling station. The EAC is using a direct link into the database to look at the signatures before allowing the persons to cast their vote.

4 States use online voter registration, where voters can go online fill the form that goes directly in the jurisdiction database.

The e-poll book technology & online voter registration are expanding very quickly: it depends on the ability to the local jurisdiction to fund that.

The Blank Ballot Distribution & Tracking Technology has been provided in response to the MOVE Act for the empowerment of military and Americans overseas voters. 6 million Americans who reside all over the globe and 7 million working in the military area can vote by using this technology. This means people outside of the USA can cast their vote in time for the Election Day.

The EAC use a great deal of social media which allow sharing comprehensive information. Via the web, Facebook or Twitter all kind of information can also be provided. There is an overall increase in the use of these tools; the EAC uses them at the federal level.

ANJA WYDEN GUELPA Chancellor of the State of Geneva, Switzerland made the following speech entitled

Walking on our hands, or how to secure a transactional IT system

"Dear Giorgio,
Ladies and Gentlemen,

I am delighted to have been invited by Sylviane and Sébastien to the Global Forum to tell you a few things about the Geneva internet voting system.

I guess that a number of you sitting in this room share with me the experience that producing a secure and effective transactional IT platform is an acrobatic feat. But if you nod in approval at my remark, it may be for the wrong reasons.

It is acrobatic not because of the challenges and difficulties of the task, but because to do it properly, you have to walk on your hands - to use a metaphor. This is indeed what we did in Geneva when evaluating the risks and choosing a security approach.

What are the risks linked to internet voting? Before I answer, let me underline that the risks and their countermeasures as well as the extent of the State's control over the system differ radically in internet voting from what they are for instance with electronic voting in polling stations. This is a very important point.

Now, my answer. The public will is at risk in any ballot under any form: is it recorded correctly, is it stored correctly and is it counted correctly? Record, store and count, you recognize the vocabulary of electronic data processing. And the keyword here is "data".

Therefore, the assets that we must protect are the data stored into or running through the system. By data, I mean the voters' anonymous ID, their PIN code and their votes. And we have to do that in the three different contexts or environments that these data encounter on their journey to the ballot box:
- The voter's working station
- The internet
- The State's IT system.

To say it with an image, it is as if your ballot paper would be passed round among a number of persons before being placed by one of these into the ballot box. You understand that the ballot paper has to be conceived in a way that prevents anybody to ever see its content. Our challenge is therefore to ensure data protection in uncontrolled environments.

To do this, we took three sets of measures:

Firstly, we anonymised all data. Getting hold of the exchanges between our server and a citizen will not enable you to violate the secrecy of the vote. We identify voters based on shared secrets.

Secondly, we added noise to the data running on the web. Once again, getting hold of this data does not mean being able to understand it as there is more information than needed and the excess information is randomly produced.

The third and most important one is the channelling of the data. We developed a java applet that never leaves our server and cannot be compromised. This applet is pushed from our server to your PC and adds a layer of encryption on top of the SSL. Contrary to the SSL, however, this encryption is not driven by your browser. This applet also compares your ballot to the universe of all possible ballots and refuses it if it is compromised, for instance by a virus hidden in your machine.

I dare say we have created a trusted chain by adopting the data point of view in our approach to risk mitigation. To go back to the image I used in my opening, this is where we walked on our hands.

In this short summary, I have not mentioned the hardening of the hardware and software, the splitting of the rights and the duties between the electoral commission and the civil servants operating the system, the simple yet robust procedures we are using, nor the use of a quantum generator to obtain the various encryption keys used in the system.

As a result, we have created a platform which is application-neutral and could perform any transaction, provided you plug in the right software the way we added the electronic ballot box and voting system.

To conclude I would like to underline that we live in a world where the added value comes increasingly from the ownership of data, information and knowledge. Yet, there is often a gap between the value of the data that we, public authorities handle or own, and the protection it is given.

In my opinion, the model we applied to internet voting has therefore a value beyond this single example. Cloud computing, which we will surely discuss during these two days, calls for a reinforced data protection of the kind we have applied."

MARK CLEVERLY, Director Strategy, Global Government Industry, IBM, USA, [www.ibm.com], made a presentation entitled:

The planet is becoming smarter

He shared with the audience his insights on the "decade of smart» - the key changes in technology and society opening up for potential solutions for societal priorities.

Two years ago, IBM launched the "smarter planet" initiative. "Smarter Planet" refers to 3 simple observations about the technology; the society and the way the behavior of people have changed.

The first is the instrumentation of the world. Computing instrumentation is being put in devices that are so tiny and cheap and so pervasive that we can measure their condition in everything that we are used to do.

The second observation is the interconnection of the world allows all those devices to talk to each other and to systems with incredible ease. It is about the Internet but also about agreement on the exchange of data…

The third observation is about Intelligence: we have the analytic power to make sense out of this vast amount of data generated by every device and system in the physical world.

We can analyze and derive insight, faster, from larger and more diverse sources of information, to predict and respond better to change.

The notion of "Smarter Planet" is a very significant opportunity for governments and other many other areas of business and life to think and act in new ways. There are 4 keys areas for governments to leverage the "Smarter Planet" initiative:

- Improve constituent services with people-centric approaches
- Embrace accountability by managing resources more effectively and efficiently
- Sense and respond better to strengthen national security and public safety
- Ensure a sustainable environment

Concerning the service delivery transformation, clearly governments see an urgent need to do things differently in the future. The "Smarter Planet" principle can help for that. Businesses models can be transformed by the ability to share services.

People are using the "Smarter Planet" notion to have a better understanding and control of the ecosystems. For instance cities with a risk of flooding, like Rotterdam, are exploring how to get more timely warning of physical conditions and danger by sensing and analyzing information from all kind of places relevant to the problem.

The city of Washington DC is investing in sensors around its water infrastructure. It allows very interesting projects to take place not only in terms of prolonging the life of assets but allowing other parts of government to work more effectively like for Firemen. Firemen in Washington DC can use Google Maps in order to see the condition of the fire entrance where they are heading.

In terms of energy smart grids are now developing. The evolution of these will take us to a place where individual facilities will are created be are bidding for power at certain time of the day and vice versa the power is provided by the individual facility and supplied to the grid from its own power generation capabilities. Many possibilities are open up.

In traffic management Smarter Planet" means solutions for traffics problems, everything from prediction tools, to mechanisms for variable pricing, congestion charging...

On the care side, the "Smarter planet" principle leads to a convergence of medical services and consumer electronics. It is a very interesting way to use those devices.

Community Connected citizens contribute to make a better government.

GIORGIO PRISTER makes a quick overview on the activities of his organization "Major Cities of Europe" (MCE) and its collaboration with the Bocconi University to evaluate the real impact of social networks and eParticipation in European cities. The report whose title is "Citizen Web Empowerment in a network of European Municipalities: value for citizens" in web 2.0 projects" is produced by Prof. Luca Buccoliero and Dr. Elena Bellio of Bocconi University.

The goal is to understand and measure citizen web empowerment in Local Governments' web portals as well as to develop a first index for benchmarking a Citizen Web Empowerment Index (CWEI).

The index is based on the following variables:

- ➢ E-information
  - » List of city politicians,
  - » City Government structure displayed online
  - » Policies and procedures (any) available online
  - » Contact details (of any municipality official) available online
  - » The budget is online
  - » Legislation is online (availability of legislation online)

- ➢ Tools 2.0
  - » Blogs on municipality website
  - » Web forums / on-line bulletin boards on municipality website
  - » Online newsletter on municipality website
  - » Social networking: Facebook on municipality website
  - » Social networking: Flickr/You Tube on municipality website
  - » Social networking: Twitter on municipality website
  - » One-stop shop portal for citizens to interact with the municipality
  - » Mobile services

- ➢ E-consultation
  - » Internet petitions
  - » Reputation systems
  - » The Mayor has his own website
  - » The Mayor website has a contact e-mail address or feedback form
  - » The Mayor website responds to user requests
  - » Elected officials have their own website
  - » Elected officials (aside from the Mayor) have a contact e-mail address on his website
  - » Elected officials (aside from the Mayor) website respond to user requests.

- ➢ E-Decision Making Process
  - » Evidence to show that the municipality considers the opinions of citizens in decision making processes (eg: e-voting system, online polls)
  - » Evidence to show that the municipality informs its citizens on what decisions it has arrived based on consultations (eg: publication of online polls/e-survey results and subsequent action taken)

42 Web portals of the MCE members have been evaluated in the period march-may 2010. The analysis and rating of the web sites was based on two fundamental criteria:
- Immediacy in traceability
- Systematic (as opposed to sporadic) presence of the information.

The results are as follows:

- ➢ Average CWEI in considered websites measured over an ideal maximum rating of 100 is 37,8
  - » Average CWEI on e-information: 74
  - » Average CWEI on tools 2.0: 23,21
  - » Average CWEI on e-consultation: 32,4
  - » Average CWEI on e-decision making process: 8,30

> "TOP FIVE"
>> » Trikala
>> » Hamburg
>> » Wien
>> » Venice
>> » Tel Aviv

These are the main conclusions of the survey:

- Substantial immaturity of web strategies
  > Still focused on organizational responsibilities
  > Not focused on the demand of citizens' empowerment;
  > Need to assume a role of active partner for citizens'

- Low penetration of 2.0 tools and strategies
  > very limited diffusion of mobile applications

- Correlation of CWEI and public and free Wi-Fi availability in the "top five" cities

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Q&A

After those presentations the moderator invited the speakers and the audience to participate to a debate.

The first question which emerged from the audience was directed to the chancellor of Geneva. The question from the audience was whether the e-voting solution from Geneva could be used by other Cities or States.

The Chancellor replied by explaining that there are already 3 States in Switzerland who signed an agreement with the State of Geneva. Geneva organizes for those States the entire back office in order to allow their Swiss citizens living abroad to vote. Each State has expatriates. The e-voting system of the State of Geneva allows them to participate in the election concerning these Swiss States.

According to the Chancellor there are many other Local Governments that are interested by the Geneva systems but none for the moment have acquired it. The chancellor insists on the fact that the system is easily adaptable.

The solution has been used for 16 different voting sessions without problems. The solution will be used for several elections in 2011 at Local and maybe at the federal level.

Tom Wilkey explains that EAC has a cautious approach on the e-voting implementation. The priority for EAC is the implementation of the MOVE ACT which aims to facilitate the vote for the US expatriates.

EAC is currently establishing standard guidelines and best practices to use the e-voting at Local and State level. There are only 2 companies in the USA in the e-Voting industry.

According to Mr. Wilkey, it will take some time before States and Local organizations will be really focusing on e-voting implementation. For Tom Wilkey, the impulse will come from the will of the expatriates to participate in elections but it will take a while.

D A Y 1 – A F T E R N O O N – P A R A L L E L S E S S I O N

Collaborative Government

As an experienced **moderator**, **HUGO KERSCHOT, Founder of IS-Practice**, Belgium, welcomed the panellists and briefly introduced the session's topic. He then led the participants through the session with great ease and inspiration.

It seems that as far as infrastructure is concerned, we are well served for the moment, even if there are some announcements of infrastructure that are not well used until now. We are also well served as regards software and when there is a problem, in a minimum of time there is a new application to solve this problem. Collaborative government, however, is about human ware and the panellists will present successful eGovernment projects.

JEREMY MILLARD, Senior Consultant at the Danish Technological Institute, Denmark, led off the panel and delivered an excellent and stimulating discussion on

Everyday eGovernment

Everyday eGovernment describes new types of services and new business models developing these eGovernment services.

eGovernment take-up by citizens is only about 30 percent in the most advanced countries. This figure remains stable over the last 3-4 years, despite massive investments. Most of the existing top down administrative services (such as tax, applying for permits etc) are serving the needs of governments, but -- even if they are really important – they are not really addressing the everyday needs of the citizens.

Public services are all around us and could be used constantly – services that are really valuable in people's everyday lives (health, education, care, transport, infrastructures, utilities, clean and safe environments, congestion and pollution watch, culture, leisure, sports, security and crime watch, weather, participation, etc). But there are not really up-to-date services in these areas, yet

These everyday services are often very location specific, depending on where you are, maybe who you are, and what you are doing. They are also very personal. eGovernment would move from a concept of one-size-fits-all (top down administrative services) to precisely-my-size services.

And the technology that would deliver it is the smart mobile phone with GPS and maybe digital TV for people in their homes. It is location-based /place-related, real time, augmented reality. People can get offered appropriate services as they walk down the street (opening times of schools and libraries, is there a special art exhibition somewhere, my kid on the backseat needs a toilette -- where can I find it…). This already exists for commercial

services, so why not for eGovernment? Location or event creates real time opportunities for content, engagement, participation, but only a very small percentage of the 100,000 iPhone apps are for public services.

Two examples that could be everyday eGovernance were given: In the London borough of Lewisham, people are allowed to use their mobile phones to take pictures of rubbish in the street, graffiti, broken paving stones, abandoned vehicles etc. and send it directly to the public office. Then, some action is taken about that. This information with the geolocation is being given directly to cleaning service on the street so they can in real time organize their work load. They are equipped with handheld devices – which they are allowed to use also in their free time at home.

Another example is a slum of Nairobi where 50 volunteers started a survey with the aim to map specific features of the area, such as schools, blackspots, low crime zones etc.

There are at least five policies needed to pursue these everyday eGovernment models: First, release public data – it's ours not the government's -- and in the medium term include data from other legitimate sources (e.g. citizens and communities themselves, private sector, technical operations, Internet of things, etc.). Safeguards and ground rules are needed. Second, make it easy and provide incentives for non-government actors, including to develop standard building block apps, but do not get in the way and regulate only against illegal or misuse of data. Third, empower the civil servant! Actually, s/he is an even bigger asset for government than citizens as they are there, on the frontline, professional and dedicated. Fourth, privacy, data protection, very robust conformable security, mitigate misuse and exploitation. Fifth, probably there is a need for some neutral trusted third parties – to hold the ring and protect interests (government is just one actor with own interests), ensure data quality as well as quantity, data protection, privacy, traceability; provide moderation, etc., etc.

MADELEINE SIÖSTEEN-THIEL, Senior Program Manager Services & IT Implementation Department, Swedish Governmental Agency for Innovation Systems, VINNOVA, Sweden, summarized with her usual clarity and enthusiasm

R T D   e G o v e r n m e n t

One important question when realising an eGovernment project is how to involve all different stakeholders? Cooperation is key for the success of a project and in Sweden; every actor in the innovation system has to be involved when carrying out an eGovernment project: National agencies, local municipalities, regional councils, research organisations to ensure knowledge transfer from different disciplines, as well as the industry.

Still, most eGovernment projects do not take into account the strategic project collaboration between public administrations, researchers, business and users.

The last call for proposals in Sweden "Innovative users in an interacting e-government" focussed on new cooperation models, organizational solutions and digitized service supplies.

A condition of all the projects asking for funding was the participation of real users. 9 projects received funding for the period 2008-2011 (VINNOVA 3 million euros, total budget 6.5 million euros).

One of these projects is ISSI - Citizen Centric Public Service in Sparsely Populated Areas. Its main goals are to achieve a major improvement of the level of services from the public administration, and e-service literacy for citizens and SMEs in the sparsely populated municipality of Örnsköldsvik in northern Sweden.

Örnsköldsvik is situated in the middle of Sweden approximately 500 km north of Stockholm. The municipality covers 6,380 km2 and has a population of 55,000 (8.7 inhabitants per km2), 35,000 live in the municipal centre, the City of Örnsköldsvik.

The projects provide computers and teach parents and grandparents on how to use them. They are now building a virtual mall for the SMEs in the region. If people are getting used to use the Internet in general, there are also more wiling to use eGovernment services.

The next step that has just been financed by VINNOVA is a project dealing with the question of how to commercialise these eGovernment services and experience.

GUIDO MARINELLI, Managing Director of Nestor and Lecturer at the Tor Vergata University of Rome, Italy, [www.nestor.uniroma2.it], outlined with great clarity and skill

Electronic Credentials and eID

Nestor is a research laboratory involved in large scale projects involving complex business processes between thousands of independent public and private organizations, dealing with privacy, security, data protection and preservation, eID, and multimedia. Nestor's research and project experience results in international publications, patents and is integrated into standardization efforts.

For an individual, his/her identity is the most important thing in his/her life. User identification is the first step to assure e-Government or e-Business services -- but what is the "identity"? The "legal" identity is given at birth and stated in the birth registration. Moreover, each individual is characterised by number of attributes (address, married or not, etc). Each of these attribute gives access to different rights. Identification is the process of identifying a person using personal data and the attribute associated to that personal data.

However, attributes change during a lifetime (due to address change, marriage, immigration, age, and many more). How to distribute personal attribute updates? The citizen is in charge to communicate all changes in his/her life to the service providers.

If an individual wants to use an electronic credential to access a service, s/he needs the service provider to link the information of the individual's credential with their own archives. If the archives are not updated, the link is not correct and the service can not work.

Therefore, there is a need for a cooperation system. In Italy, there is the Security Cooperation Backbone, developed by Nestor, that can recognise the updates of an individual's data, where the updates are done and share the updates with other services providers interested in those individual's updates. A common index maintains the link between an identifier and the attributes and services. The Security Cooperation Backbone recognizes and distributes personal data and attribute updates in a certified and secure way. Assigning to an identity an common index maintains the link between an identifier. However, a single electronic credential for several online services is challenging task.

Personal data archives and attributes are continuously updated and coherent. It is possible to accurately link an identity certified by a credential (eID, others) with attributes known by the organization that supplies the e-service: identification, authentication and authorization. Interoperability means a standardized method to understand the security level of the different credentials, a common and coherent set of personal data among the parties, and a common interoperability and cooperation standard (organizational and technical).

BRIG. GEN. PASQUALE LAVACCA, Gen. Head of III Reparto (Technology Department) Headquaters, Arma dei Carabinieri, Italy & **GIANLUIGI ME, Major, Arma dei Carabinieri**, Italy, presented with great knowledge and insight a large back-office project of the Italian Carabinieri:

eLogistic Governance – The Carabinieri SILAC Project

The Italian Carabinieri are composed of about 6 000 departments all over Italy. This means that the staff is very widespread and it is necessary to provide a large number of different assets to every department all over the country.

The main purpose of the presented project is to manage different assets, such as vehicles, electronic equipment, or weapons all over Italy and to monitor at the different levels the cost in order to save the hidden cost and to reengineer and rebuild procedures and processes. The intention is to save money in order to reinvest.

The logistic phases comprise the acquiring, usage and dismission of assets. The project figures out the scenario to best manage, for instance, a single part of an engine in order to understand the cost of this single part and if it is convenient in the future to change and to switch to another kind of engine or to maintain this kind of technology or even to approach in a different way the maintenance of this kind of device.

The goal is to save human and financial resources and to manage the assets with the help of a good monitoring process. The project has another benefit, which is the standardization of the procedures for all departments.

Process impacts are phasing out paper from the organization and thus cost reduction, shortening time to completion, reducing branch office's work centralizing data and the standardization of interfaces.

The project leads to a reduced TCO due to the fact that it enables a much deeper control over the cost and expenditures in the different assets. Furthermore, as regards future purchasing, it enables a tailored use of equipment as it helps evaluating past expenditures thus providing a better understanding of future needs.

2 examples were given of how the cost saved can be employed to provide new services to citizens: An application for iPhones allowing people to find the nearest department with respect to their location and a virtual operator who answers questions related to crime and enables online filing of a complaint, online lost and found and open competition applications. The benefits of the project are enhanced governance, cost monitoring and savings, optimal resource deployment, a posteriori metric for evaluating large projects in terms of effectiveness and hidden costs, and improved decision quality.

Reports providing most important information, such as the average active maintenance time and cost, are easily build on the fly for the management and daily updated. The project is running since 2009 and savings close to 1 million euro in just one year have been realized due to the SILAC project.

SAMIA MELHEM, Senior Operations Officer at the Global ICT Department, World Bank Group, delivered an enthusiastic and thought provoking presentation on

The World Bank's Involvement in eGovernment Projects

Each 10 percent increase in tele-density contributes to 0.6 percent of GDP growth. Recently done studies on broadband penetration showed that each 10 percent increase in broadband usage also supports another 1 percent increase of GDP. Once a country is totally connected with phones, broadband, with new services created, such as eGovernance and eBusiness, etc. it could be up to 16 percent of the country's GDP.

Some developing countries, where the government started with a very clear vision of an ICT national strategy, eServices etc., made visible progress. In Tunisia for instance, the contribution of the ICT sector in 2000 was purely telecom and a bit less than 3 percent of the GDP, today it is 10 percent. The same for Vietnam or even Rwanda.

As regards the investment in ICT infrastructure, there is a shift from investments in pure telecom to so-called soft ICT infrastructure, like skills, software needs, licences, jobs that did not exist before (e.g. specialists in digitization), software and customer support, or eSecurity. There are concerns in many developing countries where the academic system is not yet fully developed to create such skills – hence the need for partnerships with universities and think tanks around the world.

The clients of the World Bank changed: The World Bank usually deals with Ministries of ICTs. There are still Ministries of ICTs and telecom regulators, but some of them have merged with Ministries of Public Sector Reform, some of them have merged with Ministries of Information. There is a shift and in many countries, the clients of the World Bank concerning eGovernment are the Ministries of Finance or Ministries of Public Administration.

Not every country wants eGovernment – some governments of the countries the World Bank is working with are very satisfied with the status quo. The challenge is to push for the demand for good governance – and here, the most important asset is the educated youth. It is not enough to have citizens connected, because there is no culture of writing on the Internet, posting feedback or blogging. There is a big difference between urban centres and rural areas: Citizens in rural areas only ask for very basic services – they do not even have the notion of that their voice could or should be heard. It is important to create an enabling environment, knowledge transfer and linkages to success stories in order to avoid that these countries have to reinvent the wheel and waste money.

There are a number of governments thinking that they can do it all by themselves. This is practically impossible and the challenge is to help governments involving the private sector. Another challenge is to convince these governments that they do not have to develop software from scratch today. As specific as their needs are, there are so many good practices that can be imported. This is where the World Bank counts on coalitions and social media to let their client governments know what already exists.

A lot of projects of the World Bank in the last years have seen the number of ICT components increased. The portfolio of the World Bank in ICT has increased and concerns ICT applications in all sectors: ICT in public sector reforms, in finance, trade facilitation, SMEs, human resource management, urban management systems, environment and natural resource management, ICT in health, in education, in the social sector, or capacity building. Recent projects also concern cloud computing.

The World Bank finances large eGovernment projects, for instance, in Vietnam, Ghana, Kenya, Mexico, or Rwanda. For example, within the eRwanda project a 10 million credit has been granted to finance 18 telecenters, 4 ICT busses to help rural kids to get their "ICT driving licence", access points, content, government websites, and G2G applications.

ROBERT BELL, Executive Director of the Intelligent Community Forum - ICF, USA, presented with great know-how a particularly smart approach of a community to overcome economic decline:

Collaborative Government, Case Study

The Intelligent Community Forum studies how communities can use ICT to increase prosperity and to solve social problems or strengthen their local cultures. The ICF focuses on the good practice exchange between communities. As an example, the community of Dundee, Scotland, has been presented, where ICT became the focal point for all forms of transformation as well as the enabler.

Dundee in Scotland is a small coastal city of 142,000 inhabitants. The city was proud of its industrial past as "city of jute, jam and journalism". However, as in many other cities around the world, between 1960-80 de-industrialization literally destroyed thousands of jobs, caused outmigration, and it seemed that Dundee was in a terminal decline.

As a response, Dundee formed the Dundee Partnership to forge a new economic development vision. The distinctive feature of the Dundee Partnership was that it started with mid-level, front-line staff who built trust over years of collaboration. It represents the kind of "human infrastructure" required for such ambitious initiative. The Dundee Partnership is a joint venture among city government, Scottish Enterprise, universities, community groups and the business sector.

After attracting and investing funds to rebuild the waterfront, the Partnership turned its attention to the knowledge economy. Research revealed that Dundee's university sector was driving job creation in publishing and scientific research but also in such new fields as software, animation, computer games, film and television. In response, the city, universities, institutions and the Scottish government collaborated to fan the flame: the city and universities launched programs to provide e-business training to SME, introduce computer game degrees, and develop graduate business incubators. Dundee reformed their IP policies encouraging spin-offs. A Digital Media Park opened to provide space for new media companies, and two marketing partnerships – Interactive Tayside for digital media and BioDundee for life sciences – began supporting these fast-forming local clusters.

Dundee did a great work in eGovernment with the introduction of a citizen relationship management system called the Citizen Account. It is linked to a Dundee Discovery Card, which replaced 10 separate card-related services in the city, for everything from bus service and parking to social services and student accounts at the university. One of the outstanding

benefits of the Discovery Card is that it eliminates the social stigma attached to social services cards for low-income residents.

An i3 Group will deploy a fiber network through the sewer system for free. Financing for the network is entirely private. i3 agreed to fiber subsidized social housing first. The Fiber City business plan calls for an open-access architecture in which the company will light the fiber and provide transport-layer services but other service providers will deliver IPTV, Internet, voice and data. The company looks on social housing as a valuable market, since low-income residents consume both television and Internet.

However, manufacturing job losses continued: there was a loss of 3,000 manufacturing jobs in the past 3 years. But, at the same time, there was a gain of 1,000 jobs in growth sectors of the future. And when NCR moved 800 jobs to a new lower-cost location, the company kept its R&D Center in Dundee.

Dundee has also become the home of an annual Dare to be Digital competition that brings talented young developers to the city to showcase video game prototypes. Dare to be Digital is a contest for students from throughout the UK and, increasingly, around the world. They submit ideas and designs for new video games to the Dare to be Digital contest. The finalists come to Dundee for 10 weeks of intensive development with Abertay instructors and games industry professionals, at the end of which they have a finished game that is unveiled to judges and the public at festival. Dundonians of all ages attend to play the games and vote on their choice for best game.

With his usual lucidity, **ALAN SHARK, Executive Director, Public Technology Institute - PTI**, USA, provided a brilliant comment on

How are Small and Medium Sized Cities Embracing e-Gov Services and Beyond?

In a study carried out recently, PTI found that 70 percent of US local governments, cities and counties, are engaged in some form of citizen engagement, in some kind of social media. So far, eGovernment was discussed in a rather generic manner. However, the definition continues to shift and continues to change – probably for the better.

We are now moving from eGovernment, that focuses on transactions, making things easier for the citizen -- basically administrative functions, towards something called citizen engagement. This shift is occurring very suddenly but dynamically. The big words today are citizen engagement or citizen empowerment and these are not the same. They have enormously different implications.

Citizens are angry. We have never seen the anger that we have seen today in most democratic nations. The question then becomes, what can public administrators do about this, how to catch this anger and make it easier to understand? People have less trust in their governments than ever before. Therefore there is a new imperative to figure out better ways to truly engage – not just in the administrative functions, but to move into the next round which is engagement.

We have gone from posting, to transacting, to reacting, to interacting. Each one of these steps is quite different – each one has a different set of technologies and expectations. We have moved from a telephone environment, to a cell phone environment, to a web portal and

now to a mobile device. This migration, which is very significant, means that for the first time we are moving away from a merely web based services to mobile applications, which is actually different. In many cases the local government has no control of the mobile application – in some cases they do.

It offers new opportunities to develop these mobile new applications that may be outside the domain of a governmental website. The game change is 4 billion devices and there is no such thing as a dumb device. They are all smart. Some are smarter than others and every generation is going to continue to get smarter and is going to put greater pressure to deliver greater services. With over 30,000 applications in just one format alone -- this is not going to change but to grow and a significant number is growing in the area of government operations.

There are many examples with location based services, e.g. in the public safety arena with crime report applications.

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DAY 1 – AFTERNOON – PARALLEL SESSION

Collaborative eProcurement

Executive Summary
(by Angela Russo, Consip S.p.A, Italy

The session was introduced by a keynote speech, during the keynote session, delivered by **MR BROGGI, CEO of Consip**, describing how ICT and eProcurement can bring benefits both to public authorities and industry.

The Session was structured into a round table among government procurement agencies representing the USA, Italy, South Korea, Chile and Romania, who deal with public procurement and use eProcurement systems.

The aim of the session was to provide an answer to a main key question: What has really changed since citizens, businesses and public authorities may use eProcurement platforms to perform their purchases?

Since the countries represented by the speakers share many similarities and challenging goals, the answer to the question allowed each country to outline the advantages and critical success factors emerging from the use of electronic tools.

Historically the Global Forum dealt with the issue of eCommerce and eProcurement as one of the topics within the frame of other sessions. This year represents the first attempt, of the Global Forum, to dedicate an entire session to eProcurement. Thus, it is difficult to assess the evolution of the discussion, but it seems interesting to highlight the evolution of the panel topic itself. It was firstly introduced in Paris, during the 2006 edition, with a short speech on the Italian electronic marketplace. In 2007, in Venice, the impact of the use of ICT in the procurement field was touched during the session on the collaborative knowledge society. In 2008, in Athens, a presentation on how eProcurement facilitates SME's participation to the public procurement market was delivered and in 2009, in Bucharest, the positive role played by eProcurement for economic recovery was highlighted in the session on smarter governments.

The growing visibility of the topic, at the Global Forum, goes along with the growing importance that eProcurement has gained worldwide, having become a fundamental issue of the Governments' digital agendas, of the European Commission, the OECD and United Nations.

The 2010 panel on eProcurement only involved speakers from public institutions since the main goal was to make a concrete analysis of the benefits deriving from eProcurement by sharing existing practices from governments and procurement agencies.

Representing the US were Kathleen Turco, Associate Administrator Office of Governmentwide Policy-General Services Administration (GSA) and Debra Woodard, Director Logistics Systems, US Department of State (DoS).

Representing Asia and South America were Chong-Suk Kang, Procurement Consul, Public Procurement Service (PPS) of South Korea and Dora Ruiz, Head of Monitoring Department of ChileCompra, Chile.

Panellists from Europe included Gian Luigi Albano, Head of Research and Development in Consip, the Italian Public Procurement Agency and Radu Bogdan Savonea, Director of the Office of State of the Romanian Ministry of Communications & Information Society. Our Chairman was Francisco Garcia Moran, Director General of DIGIT, Directorate General Informatics of the European Commission and the moderation was held by Angela Russo, head of International Affairs in Consip, the Italian public procurement agency.

As said, this year's agenda was based entirely on a question and answer format. Each panellist was subject to the main key question addressed by the moderator and to providing and answer to the potential questions coming from the floor.

Mr **GARCIA MORAN** set the scene by introducing the state of eProcurement in the European Commission. He started by describing the eProcurement transformation (more savings, efficiency, sustainability, strategic sourcing and innovative contract management) and then moved to the description of the major benefits of eProcurement, highlighting the benefit of less work, more money and more free time. Strategic sourcing plays an important role, together with the funding of large scale pilots such as CIP, ISA, Stork and Peppol. He concluded by describing the ePrior platform, deployed for the exchange of structured eProcurement documents between the EC and its suppliers, which represents DIGIT's contribution to eProcurement.

Ms **DEBRA WOODARD** briefly outlined the Department's mission to create a more secure, prosperous, and democratic world for the benefit of the American people. She further presented the ILMS (Integrated Logistics Management System) at Department of State, to show how eProcurement has been the case for change. ILMS is an entirely electronic process and has replaced the previous procurement and logistics process, within Department of State, that was very complex, time consuming and paper-based. She concluded by highlighting some of the major benefits of eProcurement.

Mr **GIAN LUIGI ALBANO** touched on how to measure created value through public procurement. The main goal of procurement usually is to achieve VFM- value for money. In the case of public procurement VFM embeds broader issues, arising from strategic policy choices. Consip has adopted different procurement tools which are all able to increase VFM for the Italian Public Administration. Despite many ingredients of the created value are hard to measure since they are intangible, Consip succeeded in measuring its "created value", the sum of the single savings achieved by unit price, process costs, dematerialization and green procurement.

Mr. **CHONGSUK KANG** discussed on how the KOSEF, the Korean eProcurement system, has tremendously innovated public procurement. KONEPS processes the entire procurement procedures through the 4 major sub-systems: e-bidding, e-contracting, e-payment and the online shopping mall, enhancing efficiency and transparency through savings and more transparent business environments. He concluded by listing the major benefits in terms of positive impact of KONEPS, such as extended coverage and increased productivity.

Ms **KATHLEEN TURCO** noted in her presentation that GSA's mission is to use expertise to provide innovative solutions to customers in support of their missions and by so doing foster an effective, sustainable, and transparent government for the American people. She briefly described GSA's eProcurement tools and then focused on the HPPGs - Administration High Priority Performance Goals. One of the major HPPGs is sustainability. In order to ensure policy making embodies sustainability goals, GSA will modify government-wide policies trying to reduce more and more the environmental impact of the federal government (zero environmental footprints - ZEF).

Mr **RADU BOGDAN SAVONEA** was able to offer a perspective on the SEAP, the Romanian public acquisitions electronic system and its procurement portal. He made a brief description of the system models and of the major benefits achieved, such as greater transparency and efficiency in the entire procurement process. He concluded touching on future perspectives and goals, mainly consisting in the increase of online transactions, integration with the Romanian stock exchange platform and interoperability with analogous European systems.

Ms **DORA RUIZ** gave a thoughtful overview of the Chilean public eProcurement system, created as a window of opportunity to enhance transparency in public procurement. The reform was based on a standard and simple new regulation for public procurement, including a web based marketplace for every agency and local government in the country. Today the major achievements are represented by a tremendous increase in offers per tender, an efficient use of the marketplace also in case of procurement for emergencies (recent earthquake), thus a big consensus from public opinion and stronger institutions.
The panel conclusions very brilliantly made by our Chairman.

Mr. **GARCIA MORAN** concluded by the fact that the eProcurement process has been transformed. eProcurement allow a reduction of cost for both the suppliers and the buyers.

The cost saving can be impressive such as the example of Korea exposed by Mr. **CHONGSUK KANG**. eProcurement process increase transparency and regularity and allow to avoid corruption.

The DIGIT directorate push for Digital Agenda on order to achieve a true interoperable and cross-border platform to connect all data.

Mr. Garcia concluded that it would be profitable for all Europeans.

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Telecom and Internet Regulatory Challenges and Opportunities

Executive Summary
(by Andrew Lipman, Bingham McCutchen, USA)

Panel # 5 of the 2010 Global Forum was entitled 'Telecom and Internet Regulatory Challenges and Opportunities" and constituted the Forum's traditional Regulatory Panel. The Regulatory Panel has been a consistent panel for each of the 19 Global Forums. The Moderator and others noted how dramatically the topics on the panel have evolved over the years. Historically, the Panel addressed market opening issues, such as whether local competition should even be allowed and if so, whether the incumbent carriers should be required to unbundle their facilities and offer interconnection. Today, local competition, both wire line and wireless, is a given and largely taken for granted in the countries represented in the Panel. Today's discussion turns primarily on wireless, as opposed to wire line. And, the discussion further turns almost exclusively on broadband as opposed to narrowband applications. Regardless of whether the speakers were from a Telco, cable, satellite or edge service company, the common thread was broadband and the incessant need for more broadband. That is true both in the US and Europe, and elsewhere.

The Panel, as usual, was incredibly diverse both as to location and as to technology and application. There were also a fair and equitable balance of private sector and public sector representatives. Representing the US were Brent Olson, Assistant Vice President of AT&T, Patricia Cooper, President of the Satellite Industry Association, Julie Veach of the Federal Communications Commission (FCC) General Counsel Office, and Rick Whitt of Google. Panelists from Europe included Sébastien Bachollet, Vice Chairman ALAC, Honorary President, ISOC of France, Maria Tsakali, Scientific Officer, DG INFSO D 3, Software & Service Architectures Infrastructures, European Commission, and Reinhard Wieck, Managing Director of Deutsche Telekom. Our Rapporteur was Jean Pierre Chamoux, Professor, University Paris Descartes.

Unlike in prior years, where the speakers presented set presentations, this year's agenda was based entirely on a question and answer format. Each panelist was subject to at least 4 questions, not including some back and forth between and among the panelists. The lead question turned on what was the most pressing, hot-button issue before their respective regulatory agency and why was that the case.

Mr. Olson gave an excellent overview of the state of US regulation and AT&T's key role in terms of rolling out more bandwidth. We discussed AT&T's plans for both wireless and wire line bandwidth as well as the incentives for AT&T to accelerate that initiative. We also discussed several regulatory impediments and other factors which AT&T needed to overcome to achieve that goal. Mr Olson touched on a considerable number of regulatory

issues and developments. He further discussed a variety of cross border telecom and Internet issues and challenges.

Ms. Cooper discussed the particular role of satellites in deploying broadband in the US and the regulatory issues and developments at the FCC and elsewhere impacting satellite. Satellite providers were among the successful winners in the Obama Stimulus Program implemented by the US Rural Utility Service and the National Telecommunications and Information Administration. In particular, Ms. Cooper demonstrated the cost effectiveness of satellite in providing service to rural and underserved areas, as contrasted to terrestrial based services. She anticipates greater investment in satellites and their playing a larger role in offering universal service. Her primary concern was that US Government policy in this area not discriminate against satellite and that satellite have a level playing field with terrestrial services.

Ms. Veech, as the representative of the FCC provided an outstanding overview of the FCC and its likely agenda over the short and mid term. In particular, she discussed the FCC's famous National Broadband Study, which was released earlier this Spring. As she described the Plan, it is an amazingly short document for all the ground that it covers. Also, it is not a law or a rule, but a Plan or an agenda. Its a Staff recommendation, endorsed by the Fact Chairman and not self executing. All recommendations in the Plan are likely to be addressed soon. She discussed how the Plan came about, its FCC and next likely steps. A cornerstone of the Plan is to encourage universal broadband and especially the identification of 500 MHz of spectrum over 10 years (and 300 MHz over 5 years) to repurpose for 4 G Wireless Applications.

Ms. Tsakali noted in her presentation that the European Union will pursue its digital agenda, making Europe "cloud ready" and that cloud providers need net neutrality. these will be goals of the EU. She added that European Commissioner for Digital Agenda Neelie Kroes agrees with the FCC in its approach to Network Neutrality and has added two more network principles to those espoused by the FCC: the ability of national regulators to ensure a minimum level of service and transparency measures to assure that consumers get what they pay for.

Mr. Wieck was able to offer a unique perspective as he is familiar with telecom and Internet regulation in both the US and Europe. He helpfully provided several comparisons and contrasts to US and European regulation in this sector. Notably, he said that two areas in technology policy in which Europe is somewhat ahead of the US are efficient use of the spectrum and privacy considerations. He specifically noted that European regulators generally enforce policies against spectrum warehousing by forcing spectrum licensees that are not efficiently deploying their spectrum to return it. We discussed contrasting views in the US and Europe on this topic, but recognized that there is common increasing need for wireless broadband spectrum.

Mr. Whitt gave a fascinating and thoughtful overview of the new regulatory issues impacting Google. Among other issues are Network Neutrality and White Spaces. Mr. Whtitt also pointed out the need for the US Government to accelerate its efforts to provide new broadband wireless, on both a regulated and non regulated basis. He provided insights into Google's efforts to advocate for new spectrum, as well as identified some of the problems in achieving that goal. Significantly, he said that the increasingly important role of the Internet doesn't necessarily generate new issues, but, rather, casts new light on existing issues. Other speaker agreed with that perspective.

Mr. Bachollet was our final speaker and his discussion turned on the interesting and complex topic of Internet Governance. He was especially focused on enhancing the role of the end user, as opposed to carriers and device manufacturers, in establishing and advancing concepts in Internet Governance. In discussing recent developments, he identified progress in achieving that goal, at least in France.

Many speakers also mentioned the need for cross border cooperation and coordination in establishing Telecom, Broadband and Internet Governance.

Our Rapporteur, Jean-Pierre Chamoux provided an excellent overview and summary of the Regulatory Panel. Notably, he said that the tension between rapid change in technology and business and slow change in government is the problem that we always cope with in technology and telecommunications. that provided a perfect ending to this year's Global Forum Regulatory Session.

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With his usual eloquence and insight, the session's **chair** and **moderator**, **ANDREW LIPMAN, Partner and Head of Telecom Group, Bingham McCutchen**, USA, set the scene for this Regulatory Panel of the Global Forum.

It is very appropriate to have this panel in Washington: Besides being the settle of regulation in the US, it is the settle of many telecom businesses. The reason for this was once summed up by the longtime chairman of the MCI, Bill McGowan: Somebody asked Bill McGowan why he moved MCI from New York to Washington years ago. He answered; we have to understand that MCI is basically a law firm with an antenna on the roof. What he meant by that, is that so much of the business for at least US regulated telecom companies has to deal with interacting with the government. It impacts marketing, long-term vision and strategic planning. That is even true today, in a more deregulated environment.

The Regulatory Panel has been a consistent panel for each of the 19 Global Forums. The moderator and others noted how dramatically the topics on the panel have evolved over the years. Historically, the Panel addressed market opening issues, such as whether local competition should even be allowed and if so, whether the incumbent carriers should be required to unbundle their facilities and offer interconnection. Today, local competition, both wire line and wireless, is a given and largely taken for granted in the countries represented in the Panel. Today's discussion turns primarily on wireless, as opposed to wire line. And, the discussion further turns almost exclusively on broadband as opposed to narrowband applications. Regardless of whether the speakers were from a Telco, cable, satellite or edge service company, the common thread was broadband and the incessant need for more broadband. That is true both in the US and Europe, and elsewhere.

The Panel, as usual, was incredibly diverse both as to location and as to technology and application. There were also a fair and equitable balance of private sector and public sector representatives.

Unlike in prior years, where the speakers presented set presentations, this year's agenda was based entirely on a question and answer format. Each panelist was subject to at least 4 questions, not including some back and forth between and among the panelists. The lead question turned on what was the most pressing, hot-button issue before their respective regulatory agency and why was that the case.

The first question about the general overview of US regulation and key agenda items was addressed to **BRENT OLSON, Assistant Vice President - Public Policy, AT&T**, USA, [www.att.com].

In his answer, Brent Olson gave an excellent overview of the state of US regulation and AT&T's key role in terms of rolling out more bandwidth. He stressed that the current focal point in the US is broadband. The adoption gap in the US is much bigger than the availability gap. Those who have broadband available to them but chose not to take is a larger percentage than those without any broadband options. There are initiatives to get broadband to rural areas, but the primary issue is really getting people to adopt it.

The FCC issued the National Broadband Plan back in March this year and what we are seeing now is the beginnings of implementation. Perhaps most importantly, even if the FCC was the author of the plan, there is recognition that it is not just the FCC being involved, it is a kind of a multi-stakeholder plan -- a plan that engages all government agencies. One great aspect of the plan was to get everyone involved and now there is a kind of intergovernmental task force implementing the plan from across the Federal Government. The plan engages the private sector because much of what is driving broadband in the US is private sector investment and the plan recognises that. All energy today is focussed on getting broadband out there. Moreover, the communication industry is one of the few health industries and can help overcome economic recession.

Being asked, what are the impediments for AT&T deploying broadband and what are the regulatory obstacles, Mr. Olson answered that AT&T is deploying broadband all over the US, both mobile and fixed facilities. On the fixed side, AT&T is deploying a fibre to the node network with the goal to reach over 30 million households. The network enables customers to get multiple services over a single network infrastructure and will be the first of its kind. On top of that, the company is investing a lot in the mobile network, in 3G and LTE. The company invested over 17 billion dollars in Capital Spending last year and plans to spend between 18 and 19 billion this year. The area where it is very difficult to build is hard served rural areas, because at the end of the day these networks have a scale and scope issue and the denser the population, the more likely it is that an investor can get the necessary Return of Investment.

PATRICIA COOPER, President of the Satellite Industry Association - SIA, USA, was asked about her perspective of the FCC landscape and whether the US government really recognizes the importance of satellite to serve those rural or underserved areas.

With great knowledge, Ms. Cooper discussed the particular role of satellites in deploying broadband in the US and the regulatory issues and developments at the FCC and elsewhere impacting satellite. Broadband is a huge issue for the satellite world. Partly because the satellite community is involved at three different levels: Satellites have always been a part of backbones, delivering middle mile connectivity for rural communities and the over 200 satellites around the world are used regularly by ISPs, and Telcos, and television companies to reach rural and remote communities but also to deliver content from one point to multiple points. This is a constant that satellite regularly provides.

For broadband it is no different. Satellites are used to get Internet to remote and hard to reach communities but also to geographically difficult communities. That business role of extending the edge of the communications capability to more locations has been added to by the satellite community by a handful of companies in the US and increasingly in Europe and around other parts of the world, such as Australia, where the satellite infrastructure is also being augmented with a retail service. Satellite companies do not just deliver content but are also retail providers. In the US there are about 1 million subscribers. It is a relatively small part of the overall broadband world but if the policy goal is to reach most Americans with the National Broadband Plan, it is difficult to see how those hard to reach and remote communities will be served from an economic perspective. The FCC in one of its early statements had estimated that it would cost 22 billion dollars to serve those last 5 percent of Americans – that is a lot of satellites.

There is a role for satellites in the retail business. It is a relatively new role for satellites: There are two US satellites that were put up three years ago and which are already almost full with customers and the two companies that deliver those services. That investment is part of the dynamic of mentioned earlier and of innovation, too, in terms of speed.

Whether the US government has recognized the importance of satellites or not is difficult to say. The primary concern of the satellite industry is that US Government policy in this area will not prevent and regulate against an industry that is investing and innovating and that satellite have a level playing field with terrestrial services.

Having been asked about the FCC's regulatory landscape today, if there is policy beyond the Broadband Plan and how to materialize it, **JULIE VEACH, Office of the General Counsel Federal Communication Commission – FCC,** USA, provided an outstanding overview of the FCC and its likely agenda over the short and mid term.

The way the US got to the National Broadband Plan is unique. The Commission had never really tried to come up with a national plan on its own. In part because they were seeing relatively stable deployment and increase in both deployment and subscribership of broadband. But also because coming up with a really meaningful broadband plan would have taken FCC resources away from other matters.

When the US congress passed the Recovery Act back in 2009 it included a mandate that the Commission develops a National Broadband Plan within one year. As soon as the chairman of the FCC, Julius Genachowski, came on board in late 2009, he made this the Commission's top priority and both marshalled existing resources and broadened additional resources to come up with this plan. The mandate was extremely broad: Beyond just asking what can the FCC do to improve deployment and subscribership, it asked for how to leverage the use of broadband in many areas like energy, health care, or education. The FCC brought on board specialists in those areas to bring their expertise into the Commission and to come up with that document, which is a roadmap for how the country, including its federal agencies as well as the states, could go about universalising the deployment, access to and utilization of broadband for the benefit of all of these different purposes. The plan was released in March and contains hundreds of recommendations about half of which are directed at the FCC and the other half are directed at other agencies or the congress itself.

One of the interesting features of the broadband plan is that that it is not law. It was not voted or adopted by the FCC Commissioners. It is a staff recommendation. One which the chairman has embraced, but still just a staff recommendation. Moreover, it is not self implementing. What the FCC is doing now, is embarking on many individual proceedings to address the recommendations of the plan.

For instance, one of the recommendations of the National Broadband Plan was to increase the availability of broadband that is supported by universal service money to schools and libraries and make that broadband that is in the schools and libraries accessible to the general public. So, the FCC is in a separate proceeding just on schools and libraries' issues addressing these recommendations. For the most part, the Broadband Plan recommendations are going to be addressed one at the time or in groups that are aligned like addressing a series of universal service recommendations or a set of spectrum recommendations.

It will take some time but the process itself is very informative: At the moment the Commission is preparing to seek public comment on very difficult issues, like the deployment of broadband to that last portion of Americans that do not have access or the question of how to increase the adoption of broadband.

A cornerstone of the Plan is to encourage universal broadband and especially the identification of 500 MHz of spectrum over 10 years (and 300 MHz over 5 years) to repurpose for 4 G Wireless Applications.

RICHARD S. WHITT, Head of Policy at Google, USA, gave a fascinating and thoughtful overview of the new regulatory issues impacting Google when being asked to about the general overview of the telecom landscape today and how it has changed in recent years.

Google is generally very supportive of the FCC's National Broadband Plan. The FCC was put in a difficult situation when the congress directed them to come up with the Plan within the course of a year. In the prior administration, the notion of gathering data to help understand better the policy implications of a landscape was not exactly supported, and as a result, the Obama administration and the FCC were faced with a kind of empty records upon which to base the policy views.

The best way to figuring out a policy solution to a perceived policy problem is first to gather the data to figure out what is really going on out there. A good example is the notion of the need for 500 MHz of spectrum, which may well be the case, but at this point the US still lacks a spectrum inventory to really know what is available and what the real need is. The Commission lacks that data, even if they did the best that they could to come up with some proxies. The second step, once you have the data, is to develop the policy; and then, the third step to do, is to spend the money.

At the same time the National Broadband Plan process was under way, the beta-grants were being dealt with by the Department of Commerce. Again, in that situation they lacked the data but they also lacked the policy behind the money. Ideally, first you have the data, then you have the policy and then you figure out what is the best way to supplement market forces by targeting areas where the need is greatest.

The Commission did a rather good job. However, it would have been preferable if the situation preceding the adoption of the Plan would have been better. The Plan is a plan, not just prescription, and there are so many proceedings necessary to implement it. But until there are actually resolutions of those proceedings in terms of actual rules of the road, or in some cases no need for rules, but just the Commission monitoring the market marking sure that things are going into the right direction, it will not really be possible to know whether the plan was a success or a failure or something in-between. It will require very hard work by the dedicated people at the Commission over the coming months and years to make this happen.

In terms of the general landscape, there are two different sets of issues the Commission has to rustle with over the next several years: One is new networks versus old networks. This concerns the idea of moving towards an IP/broadband future but in many ways because of policies and other things we are being held back. E.g. as long as there is a sort of cash register sitting on top of the TDM networks, where people can make money per minute, it is not as efficient as it should be to have a true future proofed network. It will be necessary to figure out very fast how to transition from old networks to new networks.

The other set of issues concerns networks versus users – in the sense that over many years the notion was, whether one speaks about a broadcast or telephone or any other network, much of the value was linked to the service provided over that network. With the advent of IP that largely become no longer true. The value is no longer necessarily coming from the core but coming from the edge.

The following question concerned the proposition of a US privacy bill and how privacy legislation impacts Google. Mr. Whitt stressed that other than Europe, which has privacy directives in place since several years now, the US had not yet had such a global set of directives around privacy. If such a legislation will be put in place, it needs to be a set of discussions that go beyond the online world. Much is happening in the offline space involving private data (e.g. payments by credit card etc). Privacy legislation needs to be a much more global uniformed viewpoint than just focussing on the online world.

REINHARD WIECK, Managing Director at Deutsche Telekom, USA, [www.t-mobile.com], helpfully provided several most valuable comparisons and insights to US and European regulation.

Having been asked how he sees the US regulatory landscape from an EU perspective, Reinhard Wieck answered that US policy has always been a kind of blueprint for European telecommunications policy. US telecommunications policy existed when there was none in Europe. The most prominent feature was to privatize state monopolies, then, to bring full liberalization to the market – which was unknown in Europe before, and third, introduce some kind of legislation. The European regulatory package was very much inspired by the 96 Telco Act.

Other topics discussed in the US, such as the discussions about Net Neutrality, swept over to Europe. Transparency and non-discrimination is already part of the EU regulatory package. Every EU Member State and its regulator can and does impose on non-transparent and non-discriminatory measures etc. One question that remains is: How do regulatory regimes deal with differentiated pricing, differentiated qualities etc?

There are two areas in technology policy in which Europe is somewhat ahead of the US: These are efficient use of the spectrum and privacy considerations. For instance, there will be the first test stage for LTE in Germany as a result of a very valuable auction of the Digital Dividend.

European and in particular German Regulators are very keen to look at the efficient use of resources and in particular spectrum. European regulators generally enforce policies against spectrum warehousing by forcing spectrum licensees that are not efficiently deploying their spectrum to return it. For instance, two German companies, that have been auction winners of a almost 50 billion euro auction in 2000 and who do not use the spectrum, had to give the spectrum back. The enforcement of the efficiency of user spectrum is a very important point in Europe.

The next question addressed to Mr. Wieck concerned the feeling that many European countries seem to be beyond the US in terms of local loop unbundling and providing incentives for competition.

Mr. Wieck stressed that one has to differentiate between unbundling and incentives. Europe quickly adapted to that in 1998 and some Member States have been very successful in unbundling. For instance in 2002, Germany had 75 percent of all unbundled loops in Europe. The question then the came up whether this was really an incentive and experience showed that unbundling of the local loop was not really an incentive for investment in infrastructure. Most EU and US ecometric studies rather considered local loop unbundling as an disincentive. The solution was a more light-handed and fine tuned regulation with a whole bunch of ex-ante regulated access products. There will also be an unbundled fibre product. There is an investment gap of 300 billion euros in infrastructure in Europe and the question is, what will be the best regulatory model for that.

The next question was addressed to **LEONIDAS KANELLOS, President of the EETT – the Greek National Regulatory Authority**, Greece. He provided a very clear and concise overview of the priority in Greece from a regulator's point of view, especially regarding the challenge of austerity in terms of using of telecommunications as a locomotive for driving the economy.

Digital 2020 is a major initiative organized under the auspices of EETT seeking to draw a roadmap towards a digital economy in 2020. This is in line with the EU Digital Agenda. The initiative addresses the seven pillars: shaping the public administration, e-Entrepreneurship, education, research and innovation, digital inclusion, security and trust, interoperability and open source software together with ultra high speed infrastructure.

The initiative has identified several guiding principals as regards investment: investment in ultra fast broadband infrastructures, which is considered as the absolute prerequisite for broadband development, and the complementary use of wired and wireless infrastructures – which is important as Greece has a lot of Islands and Highlands and thus, many remote and underserved areas. The third principle is the accessibility and affordability for all principle as broadband should be treated as a public good. However, broadband is not a goal for itself but a means for delivering services. It is considered as the only way to experience the true benefits of broadband and reinforcing growth and boosting competitiveness. Competition is considered as the vehicle that drives investment and innovation and therefore has to be at the core of every broadband strategy.

The fixed telecom landscape in Greece is characterized by a lack of alternative infrastructures. Greece is a one platform country resulting in the dominance of the incumbent's copper network. The Greek incumbent OTE is managed by Deutsche Telekom.

Competition is heavily depending on the unbundling of the local loop and to a lesser degree on other wholesale services, such as bit stream. EETT is in the process of defining the availability and provision terms of pricing of all those products. Decisions are based on a market analysis which is dictated by the EU law. There are seven separate markets. First a market is identified, then a market analysis is carried out to identify the operators with significant market power, in order to finally impose some wholesale obligations.

EETT is currently discussing with OTE Deutsche Telekom trying to find the right balance with the investment needs of the incumbent operator. EETT is willing to discuss a risk premium for the investment in NGNs not to grant regulatory holidays.

The Greek mobile market is rather competitive. There are three operators, one is the subsidiary of the incumbent (44 percent of the market share); Vodafone (32 percent) and Wind (24 percent). It is important to monitor the mobile market in terms of market failures, such as regarding the regulation of termination rates to individual mobile networks but also the effective use of the radio spectrum. This relates to the developments of the digital switch over and the reframing of the 900 MHz band and the upcoming need for renewing spectrum allocation in the 900 MHz band as the relevant license of two of the Greek operators expired in 2012.

Greek operators are planning to deploy LTE in 2013/2014 and the deployment of 4G is considered as an important driver for mobile broadband. The third axe of intervention is the protection of consumer interest. EETT is very active in protecting consumer rights in terms of access, pricing, of services like premium rate services and also invests in transparence and quality of services. Furthermore, a service has been developed which allows broadband users to measure the qualitative characteristics of their access service by using tools running on the Measurement Lab platform which has been developed by AT&T, Google, the Max-Planck Institute and the Athens Polytechnic School. A new web based application for personalized statistics is currently under development.

Being asked how that macroeconomic environment in Greece has impacted the EETT, Mr. Kanellos explained that the EETT has budget autonomy getting funds from granting rights to use the commercial spectrum, numbers and domain names. But as a matter of fact, the economic downturn has influenced the development plans of operators and of the government. The Greek Government had an ambitious fiber to the home project, which is now delayed due to restrictions in public spending. However, the ICT and the electronic communication sector are not the ones that have suffered from the economic crisis. Broadband continues to raise and Greece has a penetration of about 19 percent (Europe: 26 percent) . Investing in broadband is considered as a way to help overcoming the crisis. And the government gives incentives to the operators to deploy broadband – both wired and wireless.

MARIA TSAKALI, Scientific Officer at DG Information Society and Media, unit D3 "Software and Service Architectures and Infrastructures", European Commission, was asked to give her view on the regulatory landscape at the EU especially with regard to cloud computing. In her answer, Ms. Tsakali provided a most interesting insight in how the European Union will pursue its digital agenda to make Europe "cloud ready".

Cloud computing is a mechanism for innovation. It is an enabler for competition in the IT industry and an enabler for start ups and job creation in Europe. Cloud computing provides elastic on-demand computing resources, bringing forward the promise of computing power as a utility. Individuals or organizations can scale up and down and pay for what they use. Cloud computing is a trend that will have a long term impact on the market and industry structures. If cloud computing is going to become mainstream for the provision of this computing power, it will also impact the retail industry in hardware and software, software packets producers, providers of telecommunications infrastructures and their suppliers, as well as ISPs. However, there are problems and the current limitations are the lack of transparency for users, or in the distribution of personal and commercially sensitive data, the inability to achieve interoperability across clouds or the lack of data portability.

The EU Commissioner for Information Society Neelie Kroes is preparing a cloud strategy for making Europe "cloud ready" by providing the right regulatory and policy framework. This strategy is part of the EU's Digital Agenda, the flagship initiative under the Europe 2020 vision.

Policy areas that are relevant to cloud computing are communication infrastructures, broadband – without broadband infrastructures, cloud services can not be deployed, data protection, governance, privacy and security, standardization and interoperability, green IT and international cooperation.

Actions in progress in terms of those areas that are considered as the main challenges: A Telecom reform was adopted on 4 November 2009. This reform substantially is going to strengthen competition and consumer rights in the EU telecom market, facilitate high speed Internet broadband connection to all Europeans and also to establish a EU body of telecom regulators to complete the single market for telecommunication networks and services. In addition to this, as part of the Digital Agenda, further measures are undertaken: A Commission's recommendation on regulated access to Next Generation Access networks (NGA) that requires National Telecom Regulators to ensure an appropriate balance between the needs to encourage investment and to safeguard competition. Furthermore, there is a Commission's proposal for a decision to establish a five year policy programme for radio spectrum and a Commission's communication on how to increase public and private investment in broadband networks.

Cloud providers need Net Neutrality since it ensures that telecom carriers can not search for bigger customers and therefore drive up prices for cloud offerings.

SÉBASTIEN BACHOLLET, vice Chair of the ALAC; Honorary President ISOC, France, was then asked to give a general overview of the Internet governance issue in France and Europe.

In his answer he explained, that end users will simply get lost in the current discussions about Internet, cloud computing etc. Internet governance can not be done just by the suppliers, the regulators or other government representatives. End users have to be active part of the process.

If the Internet has become what it is today, it is due to the involvement of more and more people using the Internet as a tool. Internet has changed the rules. Users are not just waiting for a TV show to come, but are also coming up with their own show. This has changed the way one has to discuss this issue.

There are already difficulties to have broadband in some parts of the US or Europe, but what about Africa, South America etc? It is not just the healthy countries that need to be connected to the Net. It will be important to think about how to connect everybody across the globe. If we do not achieve to provide connection for everybody in the next few years, the resulting divide will be difficult to handle. We need these people to participate because they have something to teach us.

Having been asked if there are specific measures the government has taken that actually damage Internet governance, Mr. Bachollet stressed that decisions giving more power to the suppliers, such as the adoption of the French Hadopi law, will not help the end user to

become more involved in Internet governance. However, at the end of the day, users will find another way to get involved.

At the same time, there are plenty of things that have to be done. For instance, IPv6 will be mandatory for the future development of the Internet and the involvement of the users.

Also the Domain Name System: It will be very important that end users have their voice in this. It has to become clear that it is not just a market set up by providers and people with money but something for the benefit of communities or groups of end users.

The session's **rapporteur**, **JEAN-PIERRE CHAMOUX, Professor, Université Paris Descartes**, France, provided an excellent overview and summary of the Regulatory Panel. Notably, he said that the tension between rapid change in technology and business and slow change in government is the problem that we always cope with in technology and telecommunications. Such statement provided a perfect ending to this year's Global Forum Regulatory Session.

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Green & Beyond

The **moderator** of the session, **ALAN SHARK, Executive Director of the Public Technology Institute - PTI**, USA, welcomed the panellists and set the stage for the panel presentations with an insightful commentary on "what is green?"

What is green? Many people have made different attempts to define this or to capitalize on it. Green does mean different things for different people. But when it comes to ICT, green is really leading by policy, law and example. We have purchasing policies, we have usage policies and we have disposal policies. Every government entity has to deal with these three things. Every cooperation has to deal with them.

When it comes to dealing with these issues, we are dealing with data centres, making them greener. We are dealing with fleet management, in terms of experimenting with different sizes and different fuels. We are dealing with green buildings in terms of how they can be better equipped and smart buildings, which is how they are managed. We are also dealing with renewable resources such as solar and wind energy. We are dealing with different forms of lightning which can be for instance LED lightning. And we are dealing with recycling and reuse as the provider of less resort when others failed to take up this responsibility.

These are just a few big picture items governments and corporations across the globe have to deal with every single day, both together and singlely. It is a real huge topic that has many dimensions. It is all about the definition and where you stand, but one thing is clear: green is not going away and it is more than a colour.

RICHARD LECHNER, Vice President Energy and Environment, IBM, USA, [www.ibm.com] summarised with great inspiration and clarity the aspects of

Sustainability on a Smarter Planet

Maybe the hype over green during the last three years can be considered as the fireflies before the storm of what can be characterized as sustainability and the opportunity to leverage the notions of a smarter planet.

If we can embed intelligence into the way the physical infrastructure of our cities and our organisations, whether it be data centres, buildings, vehicle fleets or manufacturing systems, -- if we can integrate those systems together and analyse the data in real time, they change operational behaviour. It is about harnessing information to change operational behaviour and individual behaviour in real time. It is about integration of different systems, it is about optimizing all aspects of an organisation – whether it is public or private sector organisation, distribution, manufacturing, product design, packaging or workforce management. And it is

about the integration of those processes and systems with the externalities in which every organization exists, both the human made systems, such as urban infrastructure, power, sewer, or transportation infrastructure, as well as the natural system around us, such as water resources, the weather etc.

Over the course of the past few years IBM together with its clients had the opportunity to leverage these capabilities and to do three tings: One, fundamentally to improve the efficiency of the design of these systems/ of their assets. To make them more energy efficient, more water efficient, to have a smaller footprint. Secondly, to increase the utilisation of assets. People speak about data centers and driving up the utilisation of IT assets by making data centres more efficient by design. The same principles apply to buildings. Not only making the building more efficient in terms of its energy efficiency or lightening systems or windows, but the efficient utilisation of assets: efficient space planning in having a smaller number of square foot per employee or per occupant – not just a smaller energy use per square food. And it is about changing the behaviour of individuals, whether that be through displays on hybrid vehicles or providing energy use dashboards in people's homes or in businesses.

And not only by improving the efficiency of the physical assets of the building, the structure of the building, in integrating all the lightening systems and security systems and air-conditioning systems so that the building is aware when occupants are there and only lights and heats as necessary, but also providing this dashboard to every occupant and allowing the occupants to compete with each other. No one wants to be the least efficient law office or the least efficient real estate company within the building. Similar projects are going on in communities, e.g. in California, where water utilisation is compared among residents of a neighbourhood. This idea of behavioural change is of critical importance as well as harnessing the data in real time to allow that to occur.

PETER THOMOND, Senior Consultant at the Imperial College, United Kingdom, delivered a very incentive presentation on

Enabling Technologies for Environmental Sustainability

The organisations and companies of the "low carbon coalition" came together united around three observations: First, technology will not create a low carbon economy, but a low carbon economy will not happen without technology. Secondly, by definition this will require a transformative change or a so-called disruptive innovation, but neither businesses nor policy makers have a particular good track record for driving disruptive innovation. And third, the ICT industry feels generally that policy makers are not necessarily always well aligned with driving technological development and adoption.

So given this, the organizations forming the coalition came together and develop projects. The projects have two main objectives: The first one is to develop a toolkit for businesses, policy makers and academics which goes one step beyond carbon measurement type tools but also look at adoption and barriers to adoption. An secondly, to build some more detailed case studies that go beyond just the carbon abatement effects of ICT but also the kind of barriers the ICT industry faces to driving carbon abatement with technology. Clearly, many of the participating organisations have big practices of open innovation.

The coalition spent the last 6 months looking at about 250 different technologies and ICTs that can have an enabling impact upon carbon abatement. This is a hugely complex

landscape -- complex because different countries have different energy mixes and different policy and social environments. The 250 different technologies are forming two buckets: The coalition looked at transformative change around infrastructures or new disruptive infrastructures. Secondly, the group looked at new types of consumer products and services. The distinction is really important. One application of smart grid might may have a huge impact, whereas one implementation of a simple monitoring device in one home will not have a particular large impact, but across millions of people it will.

The common thing when it comes to driving transformative change, whether it is about infrastructure or around consumer products and services, is that technology is not really the issue. There is no shortage – a fabulous technology is out there which may have a huge impact in terms of carbon abatement. These supply side uncertainties are actually reasonably low. What we see, are some real significant demand side uncertainties – also around policy and business practice uncertainties. Organisational leaders do not necessarily have the right strategies in place to drive disruptive change -- and equally policy makers do not either.

Disruptive innovations transform industries by introducing technological and business model innovation generally in low-end or, or new 'niche' markets first. Often businesses and public sector oversupply people with functionalities and services they do not need. Then, at the low end, new entrances are coming in starting at niche markets. An example is Ryan Air and easyJet who transformed the airline industry in Europe, entering at low end while Air France and British Airways over-served clients with service functionalities they did not need.

Equally, disruptive innovation is happening as new market disruption where an organisation brings a technology to market in a new business model and creates a whole new niche market on the periphery of an established market. With growing this market it attracts customers from the established mainstream. Usually disruptive innovations do not involve particular sophisticated technology. It is normally existing straight forward technology recombined in a new business model. Disruptive innovations normally do not offer what established core markets want.

In order to approach the goal to develop a standardised toolkit, the low carbon coalition has developed a 5-step process to systematically analyse specific products, services or infrastructures applied in specific countries.

The example of how cloud computing can enable carbon abatement was given: A considerable amount of time is spend on defining the scope of cloud computing. Then, the question is analysed what impact cloud computing will have when widely adopted. In a next step the feasibility and the kind of barriers to adoption are assessed. In a last step, recommendations on actions to overcome technological barriers and barriers to adoption are published.

By going through this process in an iterative way, by sharing data and engaging in discussions with the members of the coalition, a series of case studies for different European countries will be developed – in order to end up with a validated business tool.

THIERRY VAN LANDEGEM, Vice President Global Operations, Alcatel-Lucent Bell Labs, USA, [www.alcatel-lucent.com], provided a bright presentation of a great initiative:

Green Touch™ Initiative:
A Five Year Quest to Achieve Sustainable Networking

The amount of carbon emissions is tremendous. Industries are responsible for a huge part of carbon emissions. ICTs only provide a small part of these carbon emissions -- however, it is a tremendously increasing part for several reasons: ICT is becoming more and more a part of every industry, since every industry uses ICT to become more efficient. At the same time ICT itself is growing tremendously with the evolution from voice over data technologies to video. And there is also an enormous explosion of wireless. All of this makes that telecom networks become bigger and bigger. Hence, carbon emissions are increasing massively.

At the same time, all telecom manufacturers are doing a lot of research in order to make their products more energy efficient. If we assume they succeed, a rather moderate increase of carbon emissions could be realised. However, the idea of Green Touch is to go one step further: Green Touch is about collaborative disruptive innovation bringing partners together to make ICT networks energy friendly. It is like avoiding having over 50 million additional automobiles!

Based on research conducted by Bell Labs, we know that today's networks have the potential to be 10,000 times more energy efficient than they are today. Green Touch is about achieving a 1000-fold improvement in energy efficiency by driving a radical redesign of communications networks. Assume you take the power you need for one day of communication network operations needed today – that power will allow you to power communication networks for three years!

The project is about realizing efficiency improvements significant enough to offset future carbon emissions from ICT by more than 250 million tons a year, and accelerating efforts to reduce energy consumption and mitigate the impact of growing consumption.

How this mission will be achieved? The idea is to bring brilliant minds and leading experts together. Every stakeholder – all those participating in ICT – are invited to participate: service providers, communication and component providers, equipment vendors, universities, research institutes etc.

Green Touch tries to work towards a new architecture that is optimised for energy. Past architectures were too much focussed on providing bigger networks, more bandwidths and higher speeds. It is also about a holistic approach. It will be important to take into account every single factor. It is not only about equipment but also about components. Green Touch is also multi-disciplinary and a clear objective.

The initiative was launched in January 2010. A governance board has been established and an organizational structure was set up. Membership guidelines have been defined and Intellectual Property principles to be applied between the partner have been discussed and technical goals are clearly defined. The consortium opened to new membership in June this year. In early spring 2011, the Green Touch project will already provide a first technology demonstration. A common reference architecture will be established and primary research targets defined. Green Touch is an open and international initiative providing an international forum for cooperation and exchange of ideas on energy research topics.

INGRID GÖTZL, Head of Cabinet of the Executive Councilor in the Rank of Regional Minister for Urban Development, Traffic and Transport, Austria, delivered a noteworthy presentation on

<center>The Green Digital Charter</center>

Vienna was elected chair of the Knowledge Society Forum, the forum working on issues related to ICT of one of Europe's major city networks comprising 113 cities.

The Green Digital Charter has been elaborated by this Knowledge Society Forum and started one year ago. The Charter is already signed by 25 cities, which may not seem a lot, but regarding what the Charter is about, this really means something. The signatory cities are cities from all over Europe, such as Manchester, Birmingham, Tallinn, The Hague, Vienna, Zaragoza, Nantes, or Gent.

The signatory cities agreed on an inter-city partnership on ICT and energy efficiency to decrease the direct carbon footprint of the city ICTs by 30 percent by 2030, and to deploy five large scale ICT pilot projects addressing the EU climate objectives by 2015.

The Green Digital Charter is on Green IT, but it is also on IT for Green.

One can say that Vienna was already green even before signing the charter, but without knowing it: Already in 1996, Vienna realised a telework pilot project with the explicit objective of reducing traffic for those people who work at home and do not go to the office. Two years later, Vienna launched, as one of the first cities in Europe, real e-Services, which made Austria to one of the most advanced European countries in terms of e-Government. Vienna took the lead of many of the Austrian e-Government projects. Both of the mentioned projects aimed at reducing carbon emissions by reducing traffic.

Another specificity of Vienna is that the city does not really have a Green IT strategy, but carries out a number of projects:

The data centre of Vienna with about 460 employees will move to a new location by 2013. Already in 2005, a rather large scale virtualisation of services has been carried out: 11,000 service systems are running now on approx. 650 physical servers, which corresponds to a ratio of utilisation of 43 percent.

By those measures that Vienna has already undertaken in the data center, the average electric power consumption by server decreased from 205 Watt in 2008 to 180 Watt in 2010, which corresponds to a decrease of 10 percent.

As of 2013, the focus of the new data centre will be on centralising the rest of the hitherto decentralized services. Just by centralising and virtualizing services energy savings closed to 9 percent are expected.

Vienna also thinks about consolidation and homogenisation. New technologies and products allow 2 to 3 times higher output at the same energy supply that exists today. A new data storage architecture could help further.

However, there exists a certain dilemma between ecology and economy. Green IT postulates in most cases higher investment costs and a longer time for amortisation by reduced operating cost. The decision for Green IT is also a political decision, since administration in

Austria is required by law to act corresponding to the principles of economy and cost effectiveness. There is no word about ecology.

Among other "green" initiatives, Vienna applies since several years environmental friendly criteria for the use of fax machines, ink printers, computer equipment, mobile phones etc. and also applies ecological criteria for maintenance and other service contracts.

Another initiative is the Eco Business Plan Vienna, which among other projects for SMEs, supports Green IT for business uses: SMEs get an experienced IT consultant to find out whether and how far they could turn their IT into Green IT. This service is financially supported by the city of Vienna.

There is also a City of Vienna Ecology Award for a simulation model "Green Dynamics", a computer based tool for raising awareness among decision makers on energy consumption in ICT. It's a virtual demonstration for CO_2 emissions – as an answer to the question "how green is your IT?"

The solar potential cadastre, a service offered to Vienna's citizens, shows all the roofs in Vienna that can be equipped with solar cells.

One of the over 20 eco traffic projects is the CareLog project. Within CareLog, intermodal tour planning is addressed for the first time in the context of an urban (public) transportation network, in order to compute efficient tours for nursing staff while considering multiple transportation means and modes.

STEVE EVANS, Director of Corporate Services, Newcastle Upon Tyne City Council, UK, delivered an inspiring presentation on

Newcastle: A Green Case Study

Newcastle Upon Tyne with 284,300 inhabitants is one of the 20 largest cities in the UK, with CO_2 emissions of 6.8 tons per capita. The city is at the forefront of economic growth in the North-East of England, as part of a change from heavy industry to the knowledge and service sectors. The second year running, it has been voted the UK's most Environmentally Sustainable City.

The national agenda is to reduce carbon dioxide emissions by 34 percent in 2020, and 80 percent by 2050. Newcastle Upon Tyne has its own ambitious Citywide Climate Change Strategy and action plan and developed its own carbon reduction scenario - despite a serious lack of robust data concerning nationally produced carbon emissions data.

Taking the role as community leaders very seriously, the city addresses a number of issues, both in terms of educating the citizens and creating a low carbon high tech economy.

Carbon Routemap is a pioneering project realised in conjunction with the Newcastle University as part of the Science City Partnership. It aims to understand energy and carbon profiles at a building level. The project will help to understand remaining and future potential interventions and identify the suitable buildings. The city gets funding from the Central Government for loft and cavity insulation to 45,000 homes, through a public, private and voluntary partnership. Newcastle Upon Tyne also looks for its own Green Fleet Strategy, retrofitting buildings.

Changing the behaviour of Newcastle's citizens is another important point in Newcastle. This is done via traditional means such as education at school but also by innovative measures, like encouraging residents to borrow smart meters from libraries to allow people to evaluate their own carbon footprint.

Moreover, the city of Newcastle runs a district heating scheme in Byker which powers almost 1,800 homes and a pilot project in Walker to show how social housing can cut energy demands by up to 80 percent. A 1.7 million pound sterling project is initiated to link 4 tower blocks in Riverside Dene to a biomass system, estimated to reduce carbon emissions by 40-80 percent.

The next step is to use IT innovatively and to understand, both at a special level and the household level, how to reduce the carbon footprint within the city (e.g. changes in temperature/rainfall, vehicle routing, and spatial distribution of heat, gas and electric use). This will underpin a number of areas, including economic modelling for a district Heat Network, reducing climate impacts on services, and mitigating carbon emissions from fleet transport.

One area the city is looking at is designing a web portal to let residents and businesses unlock municipal data – to let them check if their buildings are suitable for solar photo voltaic/thermal, grants, and see anticipated bills. Newcastle is currently rolling out 1,000 domestic photo voltaic installations and connecting to National Grid ("greening the grid and being paid for it").

As a city, Newcastle Upon Tyne wants to be known as a high tech and very innovative city. 3.9 million pounds of R&D money have been put in a project to develop 35 types of passenger electric vehicles in conjunction with Newcastle University and regional partners. Moreover, the city just started installing 700 electric vehicle charging points.

Across the city about 400 million pounds are spent every year on goods and services alone – carbon values are embedded into procurement and investment decisions and the procurement processes have been very much "greened".

In order to deliver efficient network architectures and reduced energy consumption, the city merged the wide-area networks, reduced server hardware from 540 servers to 208 further reduction to 10 servers over the next 3 years, installs a power management platform and is working in partnership to consolidate regional data centres.

KEVIN KAMPSCHROER, Director Office of Federal High-Performance Green Buildings, Office of Governmentwide Policy, U.S. General Services Administration, USA, provided a most interesting insight into

High-Performance Buildings as Federal Priority

The first thing that the US government has decided to do, is to lead by example. When President Obama signed his Executive Order on Leadership in Energy, Environmental and Economic Performance, he set the challenge not only to measure but also do significant reduction on greenhouse gases, water reductions, improvements in indoor environmental quality and balancing all of that with significant changes in human behaviour. The overall goal is to participate more robustly in a clean energy economy. It is also a sort of breaking

with the tradition of having a across the board kind of reduction. Each agency within the Federal Government was charged to develop its own targets and the net result of this kind of collaborative competition was the government overall set the target that was higher than anybody anticipated beforehand.

The US government contributes 2 percent of the total energy consumption, which is about the equal of all of the data centres of the US. Buildings in the US are 40 percent of the total energy consumption and 70 percent of electricity. There is a tremendous opportunity to deal with building stock and about half of it is commercial and half of it is residential. There are tremendous opportunities here and particularly GSA is focussing on the commercial area but is also looking at developing standards that can trickle out into the economy as a whole. As regards the development of standards, the Office has adopted generally speaking a consensus based approach with the private sector. One particular example that is extremely noteworthy and relatively new is working together with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) to develop the first code language for the US for green buildings. ASHRAE standard 90.1 is something that government agencies are already adopting and it is actually being adopted in states and municipalities across the country as well.

The key difficulty with standards is that they set minimum performance and the challenge for anybody in this business is that one has to change the direction of the curve, one can not just do a little bid less bad -- one has to move towards good. Which means that minimum performance standards are necessary but will not achieve that. From that point we are going towards challenging people on how they can really get further than the minimum performance standards. One way is through experimentation and a role of the government in R&D is testing. GSA is developing a green proofing ground to carry out "beta-testings" of products before putting them into practical application. It will test and at the end of the day the results will be published. That then influences future procurement.

Smart buildings and smart grid is clearly a case where one needs to look at the interrelationship of buildings with their neighbours, at interconnectivity and interoperability, and get towards aggregated demand. The setting of goals, that are both internally clear as well as published and public, is important, with emphasis on openness and transparency. Both are cornerstones of the American Recovery and Reinvestment Act. There is a policy shift towards investing in exiting infrastructure.

Finally, there is need for a significant shift in measurement. We have been measuring energy intensity for a long time – it is time to change that kind of thinking. Until we can relate the actual functionality of the building to what is happening inside to the purpose of the building, we are not really measuring the right thing. And until it is possible to relate the throughput to what is going on, in the building you really do not have a great measure of how the building is working in production.

Another important aspect is getting away from the building as an entity towards recognising that it is part of a neighbourhood, part of a community and part of an urban landscape. Only getting the whole community view of what is going on, green initiatives can be effective.

TIMOTHY MILES, Associate Director, Office of Technology and Electronic Commerce, Manufacturing and Services, US Department of Commerce ITA, USA, answered with great clarity the question

Why is Green Important?
Impact of ICT on the Environment and Energy Use

The objectives of the Green ICT efforts of the Office of Technology and Electronic Commerce, Manufacturing and Services are to improve the US industry's competitiveness with foreign firms, to deal with global warming and to reduce US dependence on fossil fuels.

Why is Green ICT becoming a significant concern for US industries? An international survey carried out in 2009 showed the most pressing issues motivating them to adopt a Green ICT strategy: Not surprisingly, the top reason was the cost of energy, followed by the growth in IT infrastructure.

It is important to understand the role of ICT both as an energy consumer and as an energy efficiency enabler. According to the American Council for an Energy Efficient Economy, the ICT energy paradox is one of which more attention is paid to the energy consuming characteristics of ICT rather than the broader energy saving capacity that emerged through their widespread and systematic application. ICT has played and will continue to play a crucial role in reducing energy waste and increasing energy efficiency throughout the economy.

Global ICT infrastructure has grown substantially over the past 12 years, with an explosion in the number of Internet users, and the demand for and use of desktop PCs, portable computers, mobile phones and servers. This growth has had an enormous impact on global energy consumption and released greenhouse gases into the atmosphere. This trend will continue with the increasing number of telecom networks and handheld devices, such as smart phones, e-readers or tablet PCs.

In terms of its environmental impact, some studies indicate that just the manufacturer and use of ICT currently produces 2 to 3 percent of the world CO_2 emissions.

The ICT global carbon footprint nearly doubled to 1.3 Gigatons by 2020 based on a business-as-usual projection made by the Climate Group. PC and associated products and printers will account for 47 percent of this ICT footprint, followed by telecom infrastructure and devices at 25 percent, and data centres at 18 percent in 2020.

According to a study on the annual electricity use of ICT in 2007, ICT equipment makes up about 5.3 percent of the global electricity use and 9.4 percent of the total US electricity demand. As regards the ICT carbon footprint, PCs and monitors consume far more electricity than data centres and communications equipment.

The International Energy Agency predicts that the energy consume by ICT worldwide will double by 2022 and increase threefold by 2030 to 1700 TerraWatt hours. This will equal the combined residential electricity use of the US and Japan. This consumption will require the addition of nearly 28 GigaWatt new generating capacity between now and 2030 presenting a great challenge to electric utilities throughout the world.

But ICT is also an enabler of energy conservation and efficiency source. Referring to a presentation made by the Japanese Ministry of Economy, Trade and Industry, the role of ICT in terms of the green of IT corresponds to the introduction of IT devices, systems and

software into the ICT infrastructure to improve its energy efficiency. Green by IT corresponds to the use of IT solutions to achieve energy savings throughout the economy in homes, individual businesses, industries and transportation.

The Climate Group's SMART 2020 study identified savings of 7.8 Gt CO2 that could be delivered by ICT solutions in 2020. This savings would amount to five times the sector's footprint and 15 percent of global emissions.

ALYSSA QUARFORTH, Program Manager Commercial Properties ENERGY STAR Buildings Program, U.S. Environmental Protection Agency - EPA, USA, provided a most interesting insight in

ENERGY STAR® for Data Centers

The US represents 5 percent of the world's population but emits 19 percent of the world's carbon dioxide (CO2). However, in the last two years there was a tremendous growth in the number of energy efficiency legislation in a number of states and cities across the US. In many cases they have mandated benchmarking of building performance and in some cases they have gone a step further to disclosure performance.

There was also a continuous rise in electricity cost both on the commercial and residential sides of the US market.

Data centers with respect to energy consumption represent a small portion of the US market of one looks on all types of commercial building sector: 1.5 percent of the total US electricity consumption. But the national energy consumption by data centers are estimated to nearly double by 2011.

How do "we" as market participants solve the energy puzzle and how do we stay competitive in an evolving market?

Smart decision making is based on the information available. Energy Star is trying to bring a standardized way of looking at information across buildings or products so that people can make informed decisions. It is like being on a diet and going through a grocery store: People will look on the nutrition labels of the products to make informed decisions. The same can be true for buildings and energy efficient products. The idea is to create a competitive advantage with information.

ENERGY STAR also has a commercial buildings and residential home programme since over 10 years. After benchmarking and demonstrating superior energy performance, building managers can earn the ENERGY STAR. Buildings that earn the ENERGY STAR save 50 cents per square foot on average, consume 35 percent less energy, having a huge impact with respect to bringing down carbon emission.

From a data center perspective, ENERGY STAR is coming out from three different fronts: One from labelled products side, which is the IT equipment in the data center, but also with creating a building metric helping data centers to measure their energy performance relative to others on the market and finally, ENERGY STAR's the Low-Carbon IT Program.

ENERGY STAR will bring three new specifications to the market for IT equipment and data centers: computer servers, data center storage and uninterruptible power supplies. From the building side, ENERGY STAR for buildings has really become a standard and a number of

global and national companies are using ENERGY STAR as a way to measure their building performance. The same thing has been done for data centers. ENERGY STAR just released last year an energy performance rating for data centers. It is an 1 to 100 rating where people can enter data and operation characteristics of the data center – it is an easy identifiable and easy-to-understand metric. The national average score is 50, 75 percent and higher signifies superior energy management.

Information is a key component of both the ENERGY STAR products and buildings efforts. This has led to the creation of a "Nutrition Label" for data centers. Power and Performance Data Sheet is being incorporated into efforts for servers, storage, and UPS. They communicate key efficiency, configuration, and operational information and assists with purchase comparisons and IT product research. The Statement of Energy Performance is the "Nutrition Label" for buildings and data centers in particular.

Sustainability is a survival strategy and data center operators have the opportunity to reduce energy consumption, costs, and greenhouse gas emissions. It is important to develop a long term plan and phase in over time. For developing a lon term strategy, emphasize should be put on collaboration and learning to identify, measure and track –before investing in "technology". ENERGY STAR provides tools and information that can be used to make decisions resulting in reduced energy consumption and costs.

RICHARD LECHNER, Vice President Energy and Environment, IBM, USA, [www.ibm.com], added some notable remarks to the presentations by underlining the importance of taking an integrated holistic view. There are multiple systems and infrastructures whether it be data centres, air-conditioning systems, lightening etc. that have to be integrated together with the operational processes of the organization -- whether that be asset management or workforce management or just take some planning manufacturing with the externalities, in order to optimise across all of that.

IBM is working with clients in both the public and private sector, with cities and private sector organizations to give them a dashboard to allow them to make energy trade offs and optimize energy (but also water and carbon and raw materials like copper) across all aspects of their operations so that they can take this integrated holistic dashboard view – not only of their own operations but of all the systems around them they depend upon.

It takes a combination of technology – and there are technologies in the data center space where liquid cooling is used on the processor level, or atomic level cooling techniques, like injecting layers of air between the layers of silicon in a processor to allow to dissipate heat rapidly to technology that makes dissemination more energy efficient and a more commercially viable opportunity for cities and countries around the world. But as important as technology is, the secret source is taking all that data and analyse it in real time to optimize the operations – and understanding that this is not individual behaviour but the way entire industries and societies work.

Singapore for instance is lowering congestion and carbon emissions by influencing traffic patterns on a city scale. The city is developing one of the world's most sophisticated, smart transportation systems leveraging road pricing; integrated fare management; and deep analytics to predict and avoid traffic congestion up to an hour in advance with 85 percent accuracy.

Another example is COSCO, the China Ocean Shipping Company, which is consolidating distribution centers to reduce emissions by 15 percent and fuel costs by 25 percent. After analysing its operations across product development, sourcing, production, warehousing and distribution, the Chinese shipping giant consolidated its distribution centers from 100 to 40 to prevent 100,000 tons of emissions each year.

CALVIN BRAUNSTEIN, Chairman & CEO/Chief Research Officer, Robert Frances Group, USA, delivered a captivating talk on

GreenWay Collaborative:
Knowledge Base and Research Report

GreenWay Collaborative started working in 2005 focussing on dater center energy efficiency. The partners have recognized for quite a while that energy efficiency is a proxy for best practices and resource optimisation, so that if you really do that, it is not just about being good and green, but about cost containment within the data center and any organisation. There are real cost benefits of all of this.

According to the European Commission, the total energy usage of EU data centers in 2010 is 1.25 percent of all power consumed in the EU. This will increase to 2.7 percent by 2020 if we continue doing business as usual.

However, it is possible to ban the curve and there are things that can be done both by users and vendors: If we take a look at the range of what people are spending on the power in cooling components within the data center as a percentage of all the money being spent, it is quite a broad range: It is ranging from 8 percent more of what it takes to actually drive servers and networks and storage, up to greater than 200 percent. The average is about 90 percent and that is multiple billions of dollars being wasted just driving the supporting infrastructure around the services themselves.

And if you look at the average server, if it is not well virtualised, is running under 10 percent and these servers really can be driven greater than 30 percent. So it is possible to triple the value of what you are driving within a power envelope and not increase that significantly.

The same thing is true for storage: It is running around 30 percent and can be run greater than 60 percent without enlarging the footprint. That footprint over the time is also shrinking, with new emerging technologies.

Energy usage can be viewed as a proxy. It is the tip of the iceberg. One can say that for every dollar saved in energy there is the possibility to save anywhere between 10 and 15 dollars. It is a huge saving overall. It is not all in the hardware but also the software that is associated with that and the people costs. What people tend to do, is they continue to scale out and as the scale out rather than scaling up and taking advantage of the equipment that is driving up costs without providing the relative gains.

If we are doing this change, we are not just taking about changing the servers and how they are used, but about changing the whole business model within the data center and also the job description and the way people operate.

There is a balancing act between the costs, the resources, the financing and the business to do that, but there is a methodology that people can use to drive all this change and free up

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capital for innovation. That is to take look at the lifecycle of it. You are going to do the monitoring, gather the insight, take the control and actions and cycle through this on an ongoing basis.

And if you are doing that, you are really saying that you want to understand what is going on: the trends on the market, not only what you are doing but what other data centers are doing. If you can measure it and you can monitor it, people pay attention to it and more action is taken. If you have the insights into the best practises you can drive additional changes.

Workload is really the differentiator. The Report published by GreenWay Collaborative provides different curves for individual workloads, so that people can take a look at their type of workload and see what their cost structure should be. It is by the workload, by industry, by geography… People can do their own modelling, they can look at the benchmarks that are out there and define what metrics are relevant to them, so that they can actually measure against that and continue to make the enhanced improvements. These tools can be used to go into their actions for planning insights and to look at all the alternatives that are available to them.

Aging is a very important issue: servers for example have a dual aging peak, for 3 years and for 5 years. This usually has to do with people buying or leasing it. And when they brought it; they want to retain it longer. But with retaining it for 5 years, people are not saving money, they are loosing money. If you have 1,000 four year old servers, those servers can be replaced by less than 250 new servers. The cost of financing these 250 new servers is less than the cost of the energy of the old servers. Now you can reduce the number of people, cut out software costs etc.

To conclude, there are a couple of things people can do to reduce carbon emission to ban the curve: Measure and monitor power consumption and reduce the number of servers and increase utilization of virtual servers and storage. Eliminate over-provisioning and optimize refresh cycle, cut waste, improve capacity planning and employ power management. And optimise the airflow, temperature, humidity -- all the operational infrastructure that is out there. And lastly to constantly benchmark -- to look at what you are doing and what peers are doing and make sure that you are following that because the state-of-the-art and state of the possible does continue to keep rising on an ongoing basis.

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Executive Summary
(by Prof. J.-P. Chamoux)

Under the leadership of Mrs. Madeleine Thiel from the Swedish national Innovation Agency VINNOVA, this early morning session started with an elaborate issue paper presented by Commissioner Tom Rosch from the FTC of the US (refer to slides). Commissioner Rosch first stressed that major market changes are due to the growing shift from wired to wireless access in most communication networks, a trend recently introduced worldwide. Technologies now allow lower pricing of wireless media as well as higher functions so that almost any consumer on Earth is able to use thanks to a highly diversified set of services, from entertainment to social networks and from online gaming to daily news on top of voice and electronic messages delivered through mobile devices.

Each of these fast glowing services seek to monetize their offer as quickly as possible; in the present world, the key for success is that sales must quickly meet solvent demand whenever it shows and where consumers are ready to use it. Hence their effort to attract consumer's attention almost by any mean: free emails, *Google's* many free services, *Facebook* subsidies of viral marketing, *Apple's* access to over 300.000 applications etc. This commercial behavior raises many law enforcement questions dealing with fair competition and open trade issues. A real challenge for regulators including the *Fair Trade Commission* of the US. Governments, he said, as well as other regulators and the Judiciary. All of them are bound to contemplate their potential intervention on the market and the legal background required to justify that an independent body like the FTC be involved on all these matters.

Mrs. Beatrice Covassi, recently appointed at the EU delegation in the US to take care of the 'digital agenda' recalled the single European market target which, she declared, needs trust, security and standards interoperability to stay alive over the EU continent. As a matter of fact, Robert Morin of the Canadian CRTC regulatory Agency referring to Marshall Mc.Luhan famous wording, said our "Global Village" is growing fully digital which requires not only an extended broadband infrastructure but also new facilities adapted to this share of our population with disabilities and access deficiencies, limited mobility, poor reading ability etc. The CRTC, he said, is looking for those devices which may help all consumers, including less able persons, to conveniently use all services accessible over the net.

Ulf Dahlsen, adviser at the DG Info of the EU Commission in Brussels also insisted on the role the public sector of all member States may have in taking care of the public concerned by the 'digital agenda'. Industrial solutions are needed, he thinks, based on a comprehensive understanding of our people's needs.

This understanding of people goes beyond State services to include Healthcare said Dr. Kohn of the IBM Corporation. The trend would soon involve patients in the Healthcare design process much over beyond institutions like the General Hospital for instance. Effective IT systems are under trial in various places to redesign care around the "patient", to reshuffle former reimbursement systems and to handle patient's data under a new paradigm of healthcare centered on the patient himself rather than on the various institutions in charge of treatments or illnesses suffered by the patient. Things are hence quickly changing and open huge avenues for electronic services to sustain better care of people in a much wider context than person to person communication devices!

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The session was a journey around in and out of the New Digital society enhancing new business models and anti-trust policy. There were different views from both American and European standpoints. The Digital Society embraced Competition- was a word used here, not only to give the idea about competition in industry, but how to protect the consumer or the user in the new Digital Society. Health analyses are also vital in the Digital Society. So this leads us to the conclusions that the Digital Agenda for the Digital Society also has to empower its customer. Competition leads further to Innovation and user-driven innovation as a tool for the Information Society 3.0.

MADELEINE SIÖSTEEN THIEL, Senior Programme Manager, Services & IT Implementation Departement, Vinnova (Swedish Agency for Innovation Systems), Sweden, started by thanking the organizers for being invited to take part in the Global Forum 2010 and for having the opportunity to chair this session with such high-level persons. She explained how the session would progress: short presentation from the keynote speakers followed by questions.

Commissioner THOMAS ROSCH from the Federal Trade Commission, FTC, US

ICT and Some Consumer Protection Issues

Tom Rosch gave an interesting overview of ICT and telecommunications and the evolving competitive landscape. The usage of Internet for different purposes rises quickly and by this follows evolving business models. He gave interesting examples from Google and Facebook.

Commissioner Rosch started by thanking the organizers of the Global Forum 2010 for being invited to take part in it. According to the FTC commissioner in the past 5 years there have been 2 major and revolutionizing changes in the ICT related to the competition:

1) Evolution of the access to the Internet from wired to wireless network:
We passed from computer using DSL and cables to mobile telephone and in particular smartphones like the iPhone from Apple or Google's Android, Microsoft's Window phone, Rim's Blackberry. All those devices use wireless networks. This evolution or revolution in devices is the first major changes that occurred.

These changes occur for 2 reasons: Mobile phones have a greater functionality than stationary devices and can do thing like take photos and indentify a user's location by GPS. It is cheaper to use than devices than are dependant to wired landline.

2) From use of the Internet as a means to transmit documents to its use to transmit information which are use for a social or entertainment purpose.

The information access is simplified notably by Google but there are others such as AOL. The growing importance of the social network's function is best illustrated by Facebook but in this case too there are another examples such as MySpace, Twitter or Microsoft's agreement with Facebook which allows the Microsoft search engine Bing to access information from the Facebook network. The entertainment function is best illustrated by Apple 'Apps or application which are accessible on its online store which allows for a small fee to buy applications like games on iPhone.

The Commissioner pointed out that each of those firms have a common point: Those firms have to monetize their offering in order to pay for them as well as for their employees. They have to make money in order to support their offering and operating costs.

Those firms are selling advertising to the advertisers. To be sure that the firms obtain revenues through licensing or through the sales of applications on their mobile devices.
In the long run, the firms have to continue to depend on the advertising revenues. Advertising is a key to monetize their platforms.

In order to attract advertisers and to justify charging them substantial fees for advertising, each of these firms must make their offer attracting for the customers. The more "eyeballs they are," the more advertisers will pay. Each of those firms are trying to enhance the attractiveness of their offering to eyeball, put they are advertizing in different ways.

Facebook as well as Microsoft business models, try to leverage a large number (more than 0.5 billion of subscribers for Facebook). Those subscribers can talk to their "friends", they also represent a huge potential base in which advertisers can engage in viral marketing. It means that a subscriber recommends a product or service to his "friend", these "friends" do the same to their friends and so on.

To illustrate his point, the FTC Commissioner takes "Nike" which last summer for a few million dollars, put a 3 minutes commercial on Facebook at the occasion of the Soccer Worldcup. That commercial was seen more than 9 million times. Nike doubled its Facebook fans passing from 1.6 million fans to 3.1 million fans over a single week-end.

Goggle business models tries to attract eyeballs and thus advertising by offering users a huge amount of free information and services. This includes an ever expending search engine, extensive mapping services, a photo uploading service Picasa, a website to watch, upload and share videos -Youtube; online pluger, a free email service Gmail which serves advertisers based on keywords in the users email messages.
Billion of people today google to access information As a result advertisers where attracted by the Google's offering even before the explosion of Smartphone. Google is considered as the leader in interactive advertising. According to the last report Android as also taken the lead in this field.

Apple business models tries to attract eyeballs and thus advertisers by putting a vast array of applications including games. The iPhone users can download games for their devices. Recent press reports that Apple currently offers nearly 300 000 applications on its store and adds 1000 applications per days. Virtually Apple drives all its revenues from selling the iPhone itself but advertising represents a continuous revenue stream which does not depend on the technological advances of the iPhone.
According to press report Apple has more Applications developers in its stable than Google for Android or Rim for its Blackberry.

The questions which arise is how and where is the place of the FTC which is the guardian of a competition market.

After this impressive and enriching presentation, the chair of the session asked Commissioner Thomas Rosch to identify 2 fundamentals laws enforcement that confront the FTC.

Commissioner Rosch first explains that some people think that the FTC has not to face this kind of cacophony. For the Commissioner, those firms are the same as they rely on continuous revenue from advertising as part of their core business models. But the business model for attracting eyeballs and render advertising attractive is different. The challenge is to define how is this new markets are evolving, what is ultimately each firm's market share and if one of those firms can dominate this market.

The second issue that the FTC has to face is whether this development is so swiftly that the government intervention may be futile or even harmful for the changes which are occurring. Maybe the governments have to not intervene and step aside.

This approach raises a question despite the rapid occurring development; these markets may tip to one competitor to another and after stay concentrated for a long period of time after some merger. The FTC Commissioner thinks that the FTC has to intervene with cautious.

BEATRICE COVASSI, Counselor for the Digital Agenda, European Union Delegation to the United States of America. She explained deeply the

European Union Digital Agenda

which is the new Commission flagship initiative to develop the information society in the European Union. The Digital Agenda will be implemented in the Member States and it includes seven main pillars, from high speed internet, to research, the digital internal market and Cyber Security. http://ec.europa.eu/information_society/digital-agenda/index_en.htm

The Digital Agenda has been recently adopted in Europe. With her presentation Beatrice's objective is to reflect on 2 things: The major shift of attention in policy making today which is actually trying to address users, customers and citizens. Empowerment of users.

"Every European Digital" from Commissioner Neelie Kroes refers to the fact that the digital society has to be an inclusive one; ICT has today a strong and important economic impact and improves daily lives of citizens and businesses. More than 50% of the productivity growth of Europe stems from efficient and innovative use of ICT.
Now is the time for innovations that will drive the European economy and address the societal challenges the European Union is facing.
If Europe does not invest now, it will miss out on up to 50% of its possible growth – Europe need actions at all levels to take advantage of the full potential of ICT.

This is the first time that the Commission has launched such a comprehensive and horizontal strategy. It encompasses a whole range of actions which will be carried out across the Commission and EU countries.

Why Europe passed from an approach which viewed **ICT as interesting** to **ICT as hugely important and a key driver of growth.**

Europe must address the challenges of the digital world and embrace the full range of possibilities that ICT can offer before it gets left behind other economies. Global competition has been strengthening especially in the ICT with new powerhouses emerging in countries such as China, India and Brazil. Europe needs to meet these challenges by being innovative. To remain competitive Europe has the choice to work harder, longer or smarter.

The objective of this Agenda is to chart a course to maximise the economic and societal potential of ICT, in particular the internet, as a vital medium for economic and societal activities: for doing business, working, communicating, playing and expressing ourselves freely.

The Digital Agenda for Europe is about generating growth, by simulating a virtuous cycle of removing bottlenecks to new services and innovation, to stimulate demand and increase incentives for the new investments in infrastructures and our capacity to innovate. In other words – Europe needs to make the virtuous circle work. Attractive content and services stimulate demand, which create the business cases for investments in faster networks.

They are seven pillars in the Digital Agenda for Europe. These areas were chosen because they address the main ICT related challenges which businesses and citizens face today. They are also the areas where coordinated efforts at EU level could have the greatest impact.
Europe needs a trigger to growth otherwise it will decline and Europeans will see their levels of wealth falling year by year.

The Digital Agenda concerns all, SMEs, citizens, consumers, doctors, authors, researchers...
If the Digital Agenda succeed, all Europeans will benefit from it, if it fails everyone will suffer.

The Digital Agenda for Europe could profoundly impact the access to the internet, the way to do business, how we build and protect our families and communities. The main aims of the Digital Agenda are:

Frist, to create a single Digital Market with online access to legal content; 50% shop online; 20% buy cross-border.

At the moment there is one Union, but 27 different digital economies. Consumers are losing out. The Digital Agenda for Europe could give a massive boost to the economy: achieving a true digital single market could alone boost the Europe's GDP by 4% (some €500 billion) over the next years according to some experts. The Digital Single Market must become a reality for cross-border e-commerce, European services and digital content.

For example, the case of music downloads and access to music services. Often you might not find or not have access to legal offers/services and this might lead users to download illegally. One of Europe main goals is to enable people to purchase music online legally from another EU country, just as easily as they would from a music shop in a physical world. This would bring new business opportunities to the creative and music industries and give EU consumers legal access to a wider range of music or films online.

A series of different actions are proposed:
In order to open up access to legal online content, the Commission will work towards simplifying copyright clearance, management and cross-border licensing.
Action in this area also includes making electronic payments and invoicing easier and simplifying online dispute resolution or review the EU data protection regulatory framework.

Second, toward Openness and interoperability: Recognize and create more and better standards in Europe. Make better use of these standards, and ensure interoperability even in absence of standards

The internet is a great example of interoperability - numerous devices and applications working together anywhere in the world. Europe must ensure that new IT devices, applications, data repositories and services interact seamlessly anywhere – just like the internet. the Digital Agenda can only take off if its different parts and applications are interoperable and based on standards and open/common platforms.

The Digital Agenda identifies improved standard-setting procedures and increased interoperability as the keys to success –The more openness the more freedom for citizens to avoid lock-in to specific applications and devices. That is why there is a need to improve the framework conditions for standard settings, promote a better use of standards in particular for public procurement and coordinate our actions to enhance interoperability, between public services, and even when no standards exist.

As part of the review of EU standardisation policy, EU plans to propose legal measures on ICT interoperability already in 2010 to allow for the formal recognition of deliverables and increase transparency regarding disclosure rules for essential intellectual property rights and licensing terms and conditions in the context of standard setting.

Third, online trust and security: 88% EU eShoppers feel unsafe (Only 12% of European web users feel completely safe making online transactions). Additional threats such as malicious software, online fraud and spam unsettle consumers and dog efforts to promote the online economy. Increased trust brings increased use. The Digital Agenda proposes a number of practical solutions, including a coordinated European response to cyber-attacks and reinforced rules on personal data protection.

Fourth, Internet for all: In Europe, it has been made great progress in terms of first generation broadband and mobile take-up (Europe leads the world). This is falling behind now on the new challenges such as ultra high speed and wireless broadband.

New services such as high definition television or videoconferencing need much faster internet access than generally available in Europe. To match world leaders like South Korea and Japan, Europe needs higher speeds. By 2013, all EU citizens should have access to basic internet connection. In ten years time, everyone should have access to speeds of 30 Mbps or more. And half of the European households should have access to speeds of 100 Mbps or more.

The Digital Agenda aims to turn this ambition into reality by stimulating investments and proposing a comprehensive radio spectrum plan.

Fifth, ICT research and innovation: Currently, EU investment in ICT research is still less than half US levels. To attract Europe's best minds to research, world class infrastructure and adequate funding are crucial. To reach the 3% target on Research and Development, it is necessary to take practical steps to lever more private sector investments into ICT research and innovation.

The Digital Agenda seeks to maintain Europe's competitive edge through increased coordination and focus of Europe's fragmented efforts.
Adequate funding is needed:
- It should be leveraged more private investments through the strategic use of pre-commercial procurement and public-private partnerships, by using structural funds.
- It should proposed measures for 'light and fast' access to EU research funds in ICT, making them more attractive notably to SMEs and young researchers.

Coordination is a key requirement i.e reinforcing the coordination and pooling of resources with Member States and industry.

Sixth, digital inclusion: As a result of the 100% broadband coverage that EC is aiming for, many people will go online for the first time, who might not otherwise get connected It is important to increase regular internet use from 60% to 75%, and from 41% to 60% for disadvantaged people.

In order to help Europeans to participate fully in the digital society, it is needed to do more – help people to get the skills they need to use the internet in a proficient way, improve both basic digital literacy of all EU citizens and address professional skills shortages. This will fill jobs in a dynamic tech sector and it will help create new ones throughout the economy.
To this end, more targeted funding is needed. Member States sould make digital literacy and competencies a priority for the European Social Fund and fund projects accordingly, addressed in particular to young people and women.

For people already using ICT skills and working in the technology sector, the Digital Agenda will help identify and recognize the competences of IT practitioners, through a EU-wide certificate for e-skills which follows the EUROPASS CV classification. Indeed, the Europass CV is a common and agreed tool across Europe. We need a similar tool for ICT skills.

Seventh, digital public services: The European Commission will work with Member States to make eGovernment services interesting and available to citizens and businesses. The target is to rise from current 38% to 50% of citizens using on line services. And more than half of those should return filled in forms online.

Cross-border public services: Member States need to agree on the list of publicly available services by next year (2011). And these services must be available in all the Member States by 2015 the latest.

Healthcare is also an important part of digital services - investing more in eHealth can dramatically improve the range and quality of care available. Telemedicine and portable devices can offer a revolution in freedom of movement for patients – while saving everyone money.

By 2015, it is important to provide Europeans with a secure access to their online medical health records not just at home but also when they are travelling anywhere in the EU. This would facilitate the work of doctors and enable patients to get the best help if they are seeing a doctor at home or in another EU country.

ROBERT MORIN, Secretary General, Canadian Radio-television and Telecommunications Commission – CRTC, Canada. In his speech Robert Morin talked about the global village is going digital in a hurry. The backbone infrastructure is part of this. Other critical factors are Digital literacy and digital skills. The public and private sectors must work in a more coordinated way to enhance the accessibility of communications services for people with disabilities.

No one left behind-Digital Society.

I'm glad to be here today as we discuss strategies and policies that will shape our digital future. As you heard yesterday, many countries have set ambitious goals to connect their citizens through extensive broadband networks. In the United States, for example, the Federal Communications Commission has developed a National Broadband Plan that calls for all homes and businesses to have affordable access to download speeds of at least 4 megabits per second by the end of the decade.

The global village is going digital in a hurry. All this talk of investments in broadband networks is encouraging. But in doing so, we are only talking about one aspect of the next generation of information and communication technologies—the backbone infrastructure. For citizens to fully participate in the global village, to reap its many benefits, they must be able to use the products and services that connect to the networks. Just as importantly, they must be able to make the most of the digital tools and content at their fingertips.

Digital literacy and digital skills are critical pieces of the larger picture. But on a more basic level, the way communications services and products are designed is just as important. Let me give you an example. Many of you probably start your morning the same way I do—by checking your smart phone. You might read an e-mail as you head out the door, make a quick phone call or watch a news video.

But what if you were visually or hearing impaired? Would you have access to services and devices that are adapted to your special needs?

Changing demographics, changing needs. Roughly one in seven Canadians is presently over the age of 65. This proportion of the population is set to grow as baby boomers approach retirement. Some will devote their time to volunteer activities; some will travel the world; and others will embark on new careers.

A few years ago, I left the public service for a time to start a consulting business. So I speak from experience when I say that their lifestyle and communications needs will change. Sometimes you need more technology in your post-retirement life than you did before.

At the same time, more than 4 million Canadians, or 14% of the population, have some form of a disability. These numbers will likely rise as our population ages over the next 10 to 15 years. But it's important to remember that anyone can find themselves living with a disability, from seniors to lawyers to business owners to students and youth.

These demographic trends are not unique to Canada. Most developed countries are noticing a comparable trend.

We live in a world where technology is evolving at such a fast rate that it's sometimes hard to keep up. Who would have thought 10 years ago that we would be able to access the Internet from almost anywhere on our cellphones, laptops, netbooks and other mobile devices? People of all ages and backgrounds are interacting with each other on social networks. And

yet a significant proportion of the population may face obstacles in accessing and participating in the economic, social and cultural dimensions.

Making communications more accessible. Over the years, the Canadian Radio-television and Telecommunications Commission (CRTC) has issued a number of decisions to facilitate access to communications services. Given that regulation evolved over time, we decided to review the measures we had put in place. And because the CRTC is a converged regulator, we looked at telecommunications and broadcasting services at the same time.

As part of our proceeding, we held a public hearing. We heard presentations from major telecommunications and broadcasting companies, organizations such as the Canadian National Institute for the Blind and the Council of Canadians with Disabilities, and concerned citizens.

In June 2009, we announced several new measures to enhance the accessibility of communications services for people with disabilities. For instance, we required that wireless service providers offer at least one type of cellphone to serve the needs of people with disabilities. Those who are blind or have mobility impairments can choose from cellphones that have larger buttons and screens or voice-activated functions.

By the end of the year, we will have rolled out a national Internet Protocol relay service. For people who are deaf or hard of hearing, an operator will convert text messages into voice calls, and vice versa, using any Internet-enabled device.

We also asked the telecom industry to conduct market trials for video relay services. These services allow a person with a disability to place a call using a video telephone. The conversation is then relayed in real-time by a sign-language interpreter. Trials are also underway to see if it's possible to communicate with 911 operators by sending a text message.

We will be monitoring the results of the trials with interest. Our hope is that we can implement certain solutions without burdening the industry or consumers with unreasonable costs.

On the broadcasting front, we are working with broadcasters to improve the quality of closed captioning. We also require most broadcasters to offer at least four hours of described-video programming each week. Described video is added during pauses in dialogue to provide information on visual details, such as the settings or the actors' costumes and body language.

Role of the private sector. While governments can play a leading role, they obviously cannot do it alone. The private sector must also carry part of the load, for instance by developing products and services tailored to every segment of the population.

In their rush to bring communications services and devices to the market, companies sometimes overlook the fact that they may not be addressing all potential segments of a growing market. These situations could be capitalized upon by hiring engineers and other employees with disabilities and involving them early on in the design and testing stages. Another good practice would be to consult regularly with disability groups.

When you consider that many seniors have children and grandchildren who will purchase products and services for them, it's evident that there are tremendous opportunities to serve this market. This is not only a question of market potential, but also of social responsibility.

To conclude, the more technologically dependent we become, the higher the risk of isolation or social exclusion. The public and private sectors must work in a coordinated fashion to create an inclusive digital society for all. Given the opportunities before us, the investments we make today will benefit our countries for generations to come.

Thank you. For your attention, I think we need to eliminate social deficit and we can do it through this process".

After his brilliant presentation Robert Morin was questioned by the chair about the fact that the CRTC is engaged in accessibility issue and the CRTC is working with the users, how do they do that? Workshop? Mr. Morin replied that for this public hearing process which is one of the CRTC front force principles as transparency. The CRTC use this type of hearing to bring these issues forward. Before those public hearing the CRTC send questions to those who will come and intervene and asked them to address the questions we won't address in order not to only address the question that they want to answer to. This process goes well across Canada. The CRTC is not holding workshops; it asked the industry and certain government organizations to hold workshops, with all of the associations. It is impossible to make a good policy if there is not a clear definition of the issues and how there are handled practically.

MARTIN KOHN, Associate Director, Healthcare Analytics, IBM, USA, [www.ibm.com].

Empowering Healthcare Consumers

Marty Kohn is engaged in looking into how empowering and engaging patients can produce value. In addition he also talked about the obstacles t hat exists in engaging patients. He referred to the WHO Report 2008 in which were stated: Put people at the centre of health care. Marty Kohn pointed at that health care spending and health status   have to be balanced and the solutions

Healthcare is one of the persistent and dominating issues around the world. Almost all governments have to face the concerns regarding the quality, access and cost of healthcare. Even the countries who spend a relatively little fraction of their GDP for health are concerned about the acceleration of the increasing rate of healthcare costs and the ability of their population to access to healthcare.

The challenges that eHealtcare have to face are so important that it is not about improving but transforming healthcare. In the many models that are proposed for the transformation of healthcare, it is recognized that involving the patients in the process of healthcare more actively, making the patient part of the decision process, improving the relationship with the healthcare providers is a key part of this transformation.

For Mr. Kohn as the theme of the conference "ICT for an empowered society" suggests that ICT is a tool to involve the patients more actively and support healthcare transformation.

George Halvorson, CEO of Kaiser Permanente which a large American healthcare organization has described the US healthcare system as a non-system. It means that the US system is expensive, uncoordinated, isolated and suboptimal. In it particularly true in the

USA where there are a lot of problems in healthcare because of the US healthcare system evolution. However the USA are not alone in this case.

The World-Health Organization 2008 report identified several of the same issues that plague the USA in others countries. The problems are probably worse in the USA. The need for primarily care, universal access integrating public health in primarily care, the concept of including the patients in the center of healthcare are issues throughout the world. In a similar report the World-Health organization identified a series of requirements to address these issues. One of which is effective use of information technologies to an improving coordination of care.

How can we use effective information technologies to achieve this goal? In a summary of a study of few years ago which compare the healthcare systems in 5 developed countries,. the results showed that in each of those countries, there were several issues that were found in common. The last two common issues were the faulty patient-physicians communication and poor care coordination.

For instance in the USA, the report estimated that for elderly patients with 3 or more chronic diseases, they may have 17 different physicians resulting in faulty care. None of the members of the healthcare provider's team aware of each one of them was doing or able to coordinate or share information. It leaves the patient confused and isolated.

One of the thrust of the healthcare reform is moving healthcare from the reactionary phase that we are now in most countries where i.e dealing with patients that have diseases and have symptoms and then respond to them. The thrust is to move from the reactive cure-care mode to prevention and wellness; it requires the engagement of the patients. Sharing information with the patients about how they can act on the risk of their diseases, healthy lifestyles, access to educational information and the ability to ask questions in exchanging of information with their team of healthcare providers to support this value base system. One of the models recommended to address this issue is called "the patient centered medical home". "Home" does not refer to a physical location; "Home" is just the focal point for the patient.

Studies throughout the world show that in the countries where these models have been adopted, it allows to create a strong relationship with the patients and their primarily healthcare providers. Healthcare costs decrease and the quality improved. These experiments are lead around the world both at the national or local levels. This requires cooperation, innovative reimbursement structures. In many of the western countries, physician healthcare providers are in the following mode " the more they do the more they get payed".

The desire is to change the reimbursement so that care givers and patients are rewarded for good outcome. That requires information, setting standards for healthcare. There is a need to find metrics so that we can measure the outcomes.

This definition of the long term comprehensive relationship of the patient-physician is empowered by the right tools. By improving their communication with their care providers it helps them to make the decisions that are essential for a good management, help patient to be better self manager of healthcare.

In order to accomplish this, the Healthcare sector has to deal with the information. Patients information can be spread all over the world. Patients who travel can have healthcare

However merely giving access to the information may not be very valuable. You can huge amount of data about patients that you can access electronically, but if the patients come in an emergency state you may not have the time to compile each information. Part of empowering the patients is not only giving access to information but having an analytical tool that processes the information, takes out the information that are not relevant to the situation and presents the information to the persons, patients or providers in a format which is useful for the situation or the decisions needed to be made. That includes not only clinical information but also economical one. If we want to be able to control the acceleration of healthcare costs, it is clear that patients will have to participate in the economic decision, what is of value for them.

This will not be possible without the ability to collect information, analyze it, process it and present it to the patients and providers in a useful format. IBM offers a solution which can read the analyze and process it in a useful way. Without processing information in a useful way, we would not have accomplished anything.

The patients is empowered when they understand what is happening, when they have access to the information, when they can ask questions to their providers and get information that they can understand, participate in the follow-up of their chronic disease by home monitoring with devices at home and report that to their providers in a coordinate and organized way participate in the improvement of the healthcare management.

Information Technology is not a solution, it is a tool that empowered the patients and the healthcare providers to move to a more effective, fair healthcare system that improves outcomes and decrease costs.

After this very enriching presentation, Martin Kohn was questioned by the chair if the session about the value of empowering citizens.

Martin responded that the value have been documented, for instance within IBM which have 600 000 patients covered under IBM plan. There is a 10% decrease if the healthcare cost thanks to information exchange, improved communication with the physicians.

ULF DAHLSTEN, Principal Advisor DG INFSO & MEDIA, European Commission

User-Driven Innovation of New Products and Services

As an introduction Ulf Dahlsten showed research push and market pull-but there is a missing link in-between. Ulf Dahlsten pointed at different phases from research to commercialization of products. He also mentioned the benefits of pre-commercial procurements, for example in the UK and the Netherlands. The purchasing power of the public sectors in the US and in the European Union is very big, changes can be made to introduce a new model for procurement.

The Public Sector should identify its future needs and use its substantial procurement power to drive innovation of products and services which do not yet exist.

For the innovation process, it is not enough to look only toward researches. To get up in the market, you have to get a Solution Design, Applied R&D up to prototype then Applied R&D up to first test product and finally you can proceed to the production of commercial volumes of product/service. It is only starting at this last phase that you are in the territory of free trade, before that you are in a territory in which, cities, countries, European Union, USA and China, and others are competing. This not only through companies but also on a geographic level on the way R&D and the climate for innovation are organized.

There is a focus on the research push and lately many institutes and countries are on IT, Bio- and Nanotech, Robotics, leading Clusters involving companies and local authorities in this. However, there is a risk that the market pull mainly goes towards already commercialized products and services. This research approach is mainly what public procurers are told to do. "Do not buy anything risky, buy something which has been tested, something that you know works and if you do not do this, you take a political or administrative risk that you are not supposed to do".

The result is that you obtain a sort of "No man's land" where there is a no researches and solutions to issues that are judge as not rentable. The answer to that is to let the market pull go further down, down to the level of solution design and there are instruments for doing that:

First, pre-Commercial Procurement: It means that you identify your needs and go on the market saying your needs. You ask a number of companies to develop a solution, they design that and you keep the best solution and develop a prototype, for the best prototype you choose 1 or 2 companies to develop 1st test product. And then you obtain a product ready for the commercial market.

Second, Forward Commitment Procurement: It means that companies may have come to the a phase when they have a very interesting prototype that actually a public procurer knows that he needs so he can commit to buy this first series and do that through a forward commitment that will enable the company to take the risk and be financed to develop the last phase to get for the market to do it. Then you have to be ready in principle to buy what you have producted but this of course does not cover this "no man's land"

The US and the European Public Sectors have an enormous purchasing power which is around the same size 2000 billion euros. In Europe only some 3 billion € is used for procuring the research and development of new products and services. The USA spent in 2004, 50 billion $, mostly on defence, but still four times as much as Europe in areas as health and energy. Those figures are small compared to the total procurement.

There are many examples of successes such as the supercomputers. The approach has been different forms of Pre-commercial and competitive multi-suppliers procurement. The stakeholders involved were many, the US Dept of Energy, the DARPA. The supercomputers led to a breakthrough in technology and many companies included in this project have been beneficing a lot from this development and got a global leadership due to it. Right now while the Chinese learned from Europe and the USA, China has just completed the development of the biggest supercomputers. China learned to do this and Europe is starting to awake a little bit to addressing the opportunities. It is part of the European 2020 strategy.

Some events such as dike burst in Wilnis in Holland (August 2003) caused by dry period that weakened peat dike; leak in the dike in Spijk (January 2004) caused by broken water pipe inside the dike along Juliana canal showed that Europe needs new techniques for real time visual dike inspection and early warning systems.

The answers to that were pre-commercial type procurement (SBIR) directed towards small companies and the entry of procurement into a number of new parties from other sectors and start-ups. 5 companies were selected for the phase 1-solution design-, for the phase 2 & 3 only 2 companies were allowed to continue and they have developed services that are already procured to Deutsch and US authorities.

The Healthcare domain is an important one in which enormous spending can be made, the United-Kingdom has just started to learn to make Pre-Commercial Procurement. UK only spends 300 million £ and the effect is fantastic compared to that costs.

Value to NHS: The innovation improves the quality of the patient experience and generate potentially significant cost savings to the NHS (£236m). Value to the economy: Innovations driven by NHS have been able to attract significant funding (£290m).

Public sector should identify long terms needs, there are a lot of challenges: climate, energy, transport, health and security. The public sector must identify those needs and use the procurement power to drive innovation of new products and services that can help to address the needs of tomorrow. Innovations must allow firms to pass from just being researchers and developers to being first actors in the market.

Open Innovation: Strategy & Policies

The session's **moderator**, **JAY E. GILLETTE, Professor of Information and Communications Sciences, Center for Information and Communication Sciences, Ball State University**, USA, welcomed the panellists and introduced the structure of the session.

Modern Open Innovation in Many Voices

Dr. Gillette provided a most inspiring introduction based on the comparison of this session to a great multi-choral work of Thomas Tallis, "Spem in alium," a 40-voice motet for eight five-part choirs from the European renaissance.

As the Harvard Business School Professor, Henry Chesbrough, put it in his book "Open Innovation: The New Imperative for Creating and Profiting from Technology" (Harvard Business School Press), open innovation is "a new vision of the innovation process. This vision eagerly seeks external knowledge and ideas, even as it nurtures internal ones. It utilizes valuable ideas from whatever source in advancing a company's own business, and it places the company's own ideas in other companies' businesses." (2003, p. xxxi)

According to Chesbrough, there are five key elements in the new innovation process: 1. Networking; 2. Collaboration involving partners, competitors, universities, and users; 3. Corporate Entrepreneurship, corporate venturing, start-ups and spin-offs; 4. Proactive Intellectual Property Management: to buy and sell intellectual property and so create markets for technology; and 5. Research and Development for competitive advantage on the marketplace.

Gillette closed his introduction with a quote from the session's chair, Bror Salmelin: "We would like strongly to communicate a more modern view on open innovation. We need to go far beyond, towards crowd sourcing, co-creativity and collaborative open innovation ecosystems." (2010, personal communication)

The **chair** of the session, **BROR SALMELIN, Adviser to the Director -- ICT addressing Societal Challenges, DG INFSO, European Commission**, briefly outlined some notable reflections on the EC's point of view concerning:

Participative Innovation for Collaborative Society

When looking at the original models of open innovation, it was merely a cross-licensing scheme between organizations. Now we need to go one step further to see how to decompose that in order to really capture all the innovativeness possible and filter out the best for all the players in the ecosystem. It was not presented in the original models how to capture the creative commons/ societal capital to really develop new kinds of relationships between all the players, both businesses, public sector, NGOs and citizens in the innovation landscape.

One of the big challenges for organizations in the new innovation landscape is to capture the fourth "P". We have spoken of Public Private Partnerships but have forgotten the Public Private People Partnerships to capture the best potential around us. The challenge is how to capture the innovative potential and make a synthesis of the best ideas, which are not necessarily within any formal organization, and how to make the synthesis and integrate that in development and innovation processes and businesses.

ICT is largely enabling this new capturing and synthesis of the creative commons/ societal capital as an integral part of the innovation process itself. It was not possible before, now we emerge to have those kind of tools.

One possibility to look at the issue is to change the perspective from vendor to the user, to turn around the innovation process to serve process as citizens. We could have a look at service convergence as in one case based on our life events. Everybody is likely to be born once, but it happens millions and millions of times a year. So we get repetitive processes. We get different kinds of services merging, submerged, converged in a very personalized way. Why not looking at the service offerings fulfilling our needs and not necessarily the needs of the vendor?

Based on an idea of Bill Mitchell, MIT, Europe has created a network of Living Labs. They are for the moment regional sites, where there is a merging and growing commitment to the fourth "P". The intention is to use this kind of open environments also for addressing the new innovation processes – again taking the citizen as a subject to the process, not as an object.

From a public sector perspective innovation is a boiling kettle, where you put the framework right, where you put the ingredients in, hire a very good cook and really see what comes out. A public sector player can not necessarily exactly predict the taste, but the public role is to create the framework, including putting the fire. The pre-commercial public procurement can be a very powerful fire in the new innovation system.

ANTHONY DIMASO, **Vice President Strategy, Development & Planning, Verizon Communications**, USA, [www.verizon.com], outlined with great clarity Verizon's

Concept of Innovation

Verizon basically provides Intellectual Property in an aggregation and a distribution format. Verizon works with a lot of innovative companies and its role is to take that innovation and bundle it into products and services that are useful and distribute it.

When we buy, we have to lean money out and when we sell, it has to be valuable to someone -- and if it is not, those two do not match and a company becomes unprofitable. Thus, the whole concept of innovation is critical to our well-being and it drives who we are and how a company evolves.

Moreover, innovation is not something that is packaged into products and services. Innovation is a mindset, a paradigm. It is a way of approaching the world. Human beings are inherently creative, but they are also inherently controlling. The fundamental balance to strike is how to manage the creative portion of what we are seeking with the desire to control that, to limit it to what we have to our priorities. That is always the balance we struggle with.

In any big institution, whether it is a government or a big company, it is important to keep resurrecting the innovation gene in the gene pool, because the natural instinct of a large entity in a corporation is to control everything, and to drive it with its own DNA and to resist anything that comes out. Innovation can not be done inwardly, it has to be the result of being engaged in an ecosystem one is involved in, whether the supply ecosystem, the customer ecosystem or the peer ecosystem.

Verizon had done that well in the wireless environment. The company has been successful here, because it has integrated handset manufactures and applications providers and created a platform for services that users can invent their own environment. A cellular phone is the closest thing in technology to a personality statement: It reflects your personality in ring tones, it reflects your personality in what device you use, what types of applications you download, what you create and what you send.

Where the company did less good as in the area of VoIP. It essentially tried to resist the move to IP technology and IP voice and is still paying the penalty for the loss of landlines and land services. Fundamentally, in both cases Verizon invested a lot of money, but in one case the company has been close to its customers in the ecosystems. When doing it well, a business model rides the wave of innovation instead of fighting it. In business, you have to reinvent your company consistently, so that you are benefiting from this transition and not battling it, because you will loose fundamentally.

There are costs and benefits -- profit and loss. A lot of the innovations are about social benefits and somebody has to light the fire under that and keep it going. Which means there are investments that have to be made. Those can not to be looked at as something that can be given away – they have to be looked at as something we want to honour and continue to incent.

KENT BAKE, Vice President and Director of Standards and IPR, Government Affairs, Qualcomm, USA, [www.qualcomm.com], presented a great example of

An Open Innovation Model

Open innovation has a different meaning whether it is in Asia, India, the US or in Europe. It takes on a different meaning, just like R&D in an academic setting is much different than R&D in a commercial setting.

One can talk about its social benefits, but the best thing that can be derived from an open innovation strategy or policy is creating meaningful work for people and trying to solve some of the today's issues.

The Qualcomm business model is heavy in R&D. By producing the R&D, it enables Qualcomm to sell chipsets and software. The company has a robust licensing programme, which if you do not want to use Qualcomm's chip, you can design your own using IPR from the R&D. If you want to solve a problem using Qualcomm's technology, even using the products that is made based on that technology, the company help you do this. These are all innovative solutions that are then feed over to the operators, the companies that work and the e-retailers on the Internet, it supplies manufacturers who are able to build products and the software and application designers. Qualcomm provides a platform and if you want to use its technology, the company provides a toolkit called Brew to design your application. All

this is to spear SMEs get into the game with minimal start-up cost. It is not necessary to invest billions of dollars into the R&D to make fundamental technology work.

How does this benefit the subscriber? The subscriber can drive what it is they want on the product, what it is they want on the phone and the R&D responds to it. The social needs such as the depletion of fisheries, the apps and services division can work with the local governments to go ahead and develop programmes. They work on a wireless device, they go ahead and feed real time information back on what is happening with the depletion of the fisheries instead of just guessing.

Microeconomics -- the lowest level of individual to reach -- the person is lucky to have clean water, or even shoes to wear. There are examples of that microeconomic model working by delivering a communication device into the village to enable them to be able to get the product outside their village.

This is what open innovation can drive and one business model that enables it. Those incentives from the subscriber and the consumer who purchases the product feeds back into the SMEs and the developers, who then pay Qualcomm – it goes back in the R&D. 20 percent of the company's revenues are spent on R&D.

Three take-aways on open innovation and market creation: R&D efforts and investments are aimed at developing core technologies and new peripheral products plus support and development. Enabling licensees to avoid making same R&D investments, thereby saving licensees significant expenditures: lowers the cost of entry, accelerates time to market and allows more companies to enter the market. Licensees can focus on their strengths and value-adds, not reinvent core wireless technology. Together, these efforts drive down SME costs and increase choice of features and functionality for the end consumer. And last but not least: Disrupting -- goes against traditional vertical business models.

CHARLOTTE BROGREN, Director General Swedish Governmental Agency for Innovation Systems, VINNOVA, Sweden, delivered a marvellous presentation of

Open Innovation from a Swedish Point of View

Innovation is conversion of some type of knowledge into value. It is not just the academic scientific knowledge but knowledge in a broad sense, which can come from a large variety of the society. It is also not the inventor itself who decides if an innovation is creating value -- it is the surrounding, the environment, and the customer.

There are often a lot of "technical breakthroughs", but many of them are not innovation because these breakthroughs are often things that end in the laboratory.

Where will innovation mainly take place in the future? Over the last century there has been many developments in the society. They have added a lot of value but also created new issues affecting the globe. These issues are often called the "grand challenges". Solving these grand challenges is not just a must from the perspective of the society but also a real opportunity for innovation and businesses.

In Sweden, four priority areas have been defined, which are sustainable cities, competitive manufacturing, the sustainable Information Society and future health and care.

The first thing is to foster innovation, and especially to drive open innovation, is to put the user in the driver seat. In order to do that we need to move our laboratories out of the traditional academic scene into so-called Living Labs where new ideas can meet and be tested under real conditions and with real people. It is the behaviour of people that will be key in deciding whether something will be used in the future or not.

It will also be necessary to develop new management skills, new organisational set-ups and new incentives schemes, because it will not be possible to run companies as it has been done in the past when a company owned most of the innovation or R&D existing within the organization.

Open innovation is key to success in order to solve the grand challenges. There is no single organisation or single government that can do this by themselves. There is a need for new types of collaboration between the public, the universities and the commercial sites. The winners of tomorrow will not be the ones who develop everything themselves but those who are able to combine knowledge and put it out on the market.

MARGOT DOR, Director Partnerships & EU Affairs, European Telecommunications Standards Institute – ETSI, France, made an excellent presentation on

Standards and Open Innovation

There is something mysterious with innovation – usually, its products are not planned. It is very much as Stephen Jay Gould put it for evolution, "we should consider evolution as a series of events, both perfectly logical and likely to be rigorously explained in retrospect, yet absolutely impossible to predict and not reproducible."

Standard making is a very good place to observe this alchemy of innovation, because the role of standards is to be an enabler and catalyst for innovation. The chain in which we used to operate has evolved. It is becoming more complex and less predictable. It is very much network, open and user oriented. The question we have to ask ourselves is, what can we do in order to be ready to catch the ball, when the ball will eventually come to us.

ETSI wants to produce as many open platforms so that users and innovative ideas can plug into the standard platform, wherever it will come from and to make sure that standards do not act as a barrier to innovation. They must be produced in a timely manner and they must support, enable – and certainly not prevent innovation.

This includes a number of processes to put in place. Intellectual Property Management is a very important part of this equation and ETSI is looking at this very seriously and in a constant manner, in particular with its IP Committee, which tries to be as fine as it can when it comes to IP Management.

When it comes to policy, there is in Europe a major reform of the standardization system ongoing. ETSI is working with the policymakers to make sure that the tools available will be able to integrate innovation, including innovation that comes from other standard-making organizations, into the "ETSI factory". There are rules that are being defined right now, very important points, and ETSI is working on this with the Commission to make sure that this happens in the right way.

One has to be aware of words that seem to be simple and we think we all understand. "Openness" is one of these tricky words. There are closed systems built on open standards and open source: For instance, FaceTime of Apple includes a series of open standards. Yet FaceTime can only be used to make video calls to another iPhone version 4 (previous versions won't do) on WIFI (cellular won't do).

ERIC LEGALE, Managing Director of Issy Media, City of Issy-les-Moulineaux, France, shared some excellent reflections about

What Does Innovation Mean for a City Like Issy?

Issy-les-Moulineaux is a medium sized city closed to Paris, France. Today, there are many IT companies based in Issy -- none of them was in Issy 14 years ago, when Issy started its ICT strategy.

For Issy, being innovative means to be able to change minds, to be able to change the community and to have a strong political vision – and Issy has the chance to have a Major with a strong vision of the modernization of his city --, but also to be able to change the spirit of the community and the spirit of its civil servants.

This is why 14 years after the launch of Issy's ICT-strategy, there are so many companies in Issy (most of the large high-tech and media companies, e.g., Cisco Systems Europe, Orange, Hewlett Packard, Microsoft Europe…) and why the city has such a dynamic economic fabric today. Issy-les-Moulineaux has only 63 000 inhabitants, closed to Paris with its 2 million inhabitants and in the heart of the Paris region with its 12 million inhabitants, but Issy is the most dynamic and richest city in this region. Issy is the only city where the local taxes are today lower than 14 years ago!

To be innovative is also having a global vision about what when to do and a good – and sometimes different – organization. The Major is supported by the semi-public organization Issy Media, which serves as a task force from technology watch to management for implementing the ICT strategy. Issy focuses on four priority areas: modernizing its public administration, but also to provide a large spectrum of new services to the population, fostering digital inclusion and promoting a local democracy and citizen participation to support political decision making based on dialogue and consultation.

Innovating means also being able to create new services sometimes against the bureaucracy of the French administration. For instance, Issy is the only city where the population can pay their parking fees using their mobile phones. However, the French Law does not allow such service because it hurts the principle of equality: People who are paying cash pay their parking fees for a certain number of hours – if they leave before, they lose the money. People paying with the mobile will pay exactly for they time they used the parking.

In two weeks Issy will introduce another service: The city will help people finding a free parking pace in the city thanks to the mobile phone. Given the fact that someone who drives a car loses one year of our life just by looking for free parking places, this is a rather important service. Moreover, people in Issy can register to the electoral roll online and the city is one of the rare French cities using electronic voting machines. The city is represented on facebook, and is part of the European Network of Living Labs. Issy is also member of the Global Cities Dialogue and is partner in several European cooperation projects, such as the European platform for innovative cities using cloud computing.

DENIS ROUSSET, Director Public Affairs Department, ST-Ericsson, France, gave a very interesting and innovative demonstration of

An Open Innovation Approach
as an Enabler for new Business Model in ICT

In 20 years, the wireless industry went through dramatic changes. During the same period a paradox came up: Computing power increased, price decreased and a totally new usage of the mobile is today common sense. We moved from a single purpose device (telephone) to an unlimited purpose device, where imagination is the only limit. Another phenomenon pushes the limit: The global interconnection of global consumers, who want to buy their phones anywhere and want to use them anywhere.

ST Eriksson is a joint venture between ST Microelectronics and Eriksson. The company is world leader in the development of wireless platforms. Eriksson has the vision of 50 billion interconnected devices by 2020. All consumer, all phones, and things will become interconnected. Tomorrow, the mobile phone, as mobile Internet device, will have a completely different shape.

It is important to keep this innovative aspiration and the challenge to manage complexity. No single company can provide enough innovation to trigger these 50 billion devices in multiple segments and multiple usages. The consumers will have to decide what they want or need. The industry has to take care of the interface and the world-wide interoperability.

There are three different ways to collaborate, to create interoperability and to innovate with other companies and partners: First, the industry partnerships and alliances, which are the so-called Open Source initiatives, such as Android, Linux etc.

Second, standardization bodies and associations: Standards that express the state-of-the-art facilitate interoperability and competition between new and existing products. Standards are providing to the consumer trust in the safety and performance of new products. The development of standards is necessary to accompany the emergence of new markets. Without new standards, it is not possible to create new markets. The introduction of complex systems, the extension of the Internet and the use of standards contribute also to the diffusion of knowledge and facilitates the application of technology.

Third, global collaborations and clusters are now becoming global and "clusters of clusters" are today gaining interest to lead new business opportunities and innovation.

BRUNO LE DANTEC, Representative EIT ICT Labs Paris Node Manager, INRIA, provided a great presentation of a very ambitious project:

EIT ICT Labs -- The ICT Innovation Catalyst for Europe

There is a need for new types of collaboration. The European Commission felt that there is the need for a new instrument – something comparable to the MIT. MIT is doing a very appropriate job in the US by creating a lot of innovation and business. How can Europe try to avoid a break in that chain? Europe is doing very good research, it has good universities, and is very good in high quality products, but unfortunately Europe is not able to capitalize on that.

Within the framework of the Barroso initiative, it was decided to create the EIT ICT Labs (European Institute of Innovation and Technology). This is a pure new creation – a project that is supposed to create innovation and new business on the ICT field.

The project is composed of a consortium of five countries and the idea is to build the EIT ICT Labs on five very strong hot spots in five cities: Helsinki (Finland), Stockholm (Sweden), Berlin (Germany), Eindhoven (The Netherlands) and Paris (France). These are the spots where the EIT ICT Labs is going to build new activities in order to create innovation.

EIT ICT Labs deploys a carefully selected set of innovation catalysts comprising the entire process chain from the creation over the transition to acceleration of new business. The first idea is to create a new entrepreneurial ICT top talent. Europe has a rather good entrepreneurship but it seems that something is missing. The intention is to tune or change a little bit the higher education programme by injecting some knowledge on how to become an entrepreneur. There is a need to train students on this as well as to the kind of spirit of entrepreneurship that exists in the US.

The second idea is to speed up ICT innovation. To do that, EIT ICT Labs will help putting people together people within a European network of innovation. In every of the five hot spots there are universities, industries, SMEs and regions -- all these will have to be put together. This is not new and the US is already doing that. Thus, it will be necessary to take care about mobility programmes and to make sure that these people have some dedicated spaces, so-called collocation centres, where they can go and work together. The hope is that at least two very strong hot spots in Europe will attract people rather than see people leaving Europe.

The third idea is to generate world-class ICT business. EIT ICT Labs is in contact with big companies and the idea is to make sure to get the essence of their results. These companies have their own results and other results and the intention is to transfer these other results, as well as the R&D of the EIT ICT Labs, to SMEs, which are part of the EIT ICT Labs network.

SOFIA ADJAS, European Affairs Manager Universcience – Cité des Sciences et de l'Industrie, France, provided a very clear insight in

Ways Science Museums and Science Centres are Opening Up to Innovation

Science centres and museums are always considered as places for leisure or places for preservation of the cultural heritage. In facing the emergence of technologies and globalisation, they tend to find new ways to open to innovation. Science centres and museums are now exploring the ways how to find the opportunities to educate in science through informal science environments.

Informal learning and education in science is a very important point in science museums like the Cité des Sciences in Paris. This is especially a challenge for future generations.

How science centres and museums can innovate in the next decade: First, it could be interesting for science museums to develop models in linkage with science and society issues to promote scientific vocation, environment, art and innovation.

Second, they can innovate in developing new education increasing cooperative practices and collaborative work.

Third, science museums and science centres should take into account the deep changes in the ways to interact and learn by mixing formal and informal learning. Which seems quite important when targeting the future generation.

In order to get into the innovation processes, science museums or science centres should provide new ways to dialogue and interact with the public and create new areas for dialogue and collaborative interdisciplinary programmes, such as think tanks or large-scale forums.

SLADJANA CABRILO, Ph.D, Assistant Professor University Educons/ Faculty of Business in Services, Serbia gave a very distinguished presentation on

IC-Based Innovation Gap Assessment For Future Knowledge and Innovation Driven Economy

The main question for organizations, governments and societies around the world is how to drive innovation potential towards a better future.

First, open innovation and intellectual capital (IC) concepts are strongly related, overlapping and both future oriented. Second, IC measuring and reporting could be the basis of innovation gap assessment. IC-based innovation gap assessment might be used as a step towards the creation of an effective open innovation strategy based on organizational, regional or national levels. Third, at a national level, IC-based innovation gap assessment might be used for the creation of an effective national open innovation strategy for the future innovation driven economy and IC- based society.

IC might be the foundation of open innovation systems, but it could be also quite the opposite. IC and open innovation could arise from each other shaping the future together.

Three years ago, a broad study on intellectual capital in Serbia has been carried out in order to define adequate IC reporting models for Serbia and some Serbian industries. It was not only concentrated on measuring and numbers but also on managerial control and decision making. This research has indicated identifiable strengths and weaknesses of human, structural and relational capital which together represent intellectual capital. The main conclusion of this research has been that IC measuring and reporting could be the basis of innovation gap assessment. Furthermore, IC-based innovation gap assessment might be used as a step towards the creation of an effective open innovation strategy.

There are four steps leading from IC reporting to an open innovation strategy: First, to analyze intellectual capital, then to assess IC value drivers. The third step could be to assess innovation gaps related to the IC value drivers, and finally to define an effective innovation strategy based on the identified innovation gaps.

On the national level, decision making has to be based on adequate indicators showing whether and how much our economies actually successful entered new business reality. Thus, research of national intellectual capital could contribute to a more comprehensive assessment of a national innovation performance. IC-based innovation gap assessment at a national level might be used for the creation of an effective national open innovation strategy for the future innovation driven economy and an IC-based society.

ADRIJAN BOŽINOVSKI, Assistant Professor at the University American College Skopje, Macedonia, presented revolutionary developments:

Brain Machine Interface: A 21st Century Dynamic Technology

Brain-Machine Interface is a technology that allows people to control devices using only the signals from the brain – no use of hands, speech or muscles to control external devices.

It is a very hot topic in computer science, especially in the prosthesis section. Among others, applications so far include movement of the cursor, hands-free typewriter, wheelchair movement, or robot arm (prosthesis) movement.

The first worldwide experimental proof was achieved in 1988 in Macedonia: a physical device, a mobile robot, was controlled using EEG alpha rhythm. However, real worldwide interest was shown in 21st century.

Open innovation is something that is broadly accepted by many people without most of them really knowing where it has originated. Open innovation means gathering information from various sources, "compiling" that information into an innovation – a product or an idea, and then sharing it with the world. Sources can be conferences, Internet forums, blogs, social network sites etc.

One type of open innovation are new paradigms, such as the Brain-Machine Interface, that was controlling a robot using brain signals alone. This was the new paradigm that somebody had thought of and suggested as an idea and many researchers gave their ideas on the topic – some were successful, some were not. This is what innovation is about: Everybody adds ideas and the public then decides which is the most successful one – not the innovator her/himself.

Then, there is the optimisations' part. Open innovation can concern optimisation; a classical example being the computer itself: Since its inception the computer had been optimized many times. And all of this came seamlessly.

The prerequisite for open innovation is a challenge to be overcome. Open innovation can not happen without a challenge to overcome. In the context of the Brain-Machine Interface, the next challenge would be to control a robot arm with many motors using brain signals alone. Another example for a challenge in the context of the Brain-Machine Interface would be cortical blindness.

The **commentator** of the session, EDITH CRESSON, **Former French Prime Minister**, France, delivered an excellent conclusion of the session:

The problem is how to capture innovation. The public sector can only light the fire in order to bring up some sort of way to mix things together that then leads to new discoveries, new ways of living, new ways of consuming, or new ways of having relations between people. This means that innovation in this ICT area is something that can completely change the society. It will not be done without the society and it also has an effect on the society. It reacts on both sides.

Innovation works like an ecosystem. It will modify the society and will also contribute to change the mind of people. It will lead to a kind of evolution, not only of the habits of people but also on their way of thinking, which is extremely important at the long term.

"Open innovation" has a different meaning in the EU and the US. The words "free" is not exactly the same in Europe. Something can be "open", but people have to pay to get it, or it can be "open" and it can be "free" which means that people do not have to pay.

Money for R&D is difficult to find. Big companies are investing large amounts of money, but small companies, very often with smaller investments, can be those companies that bring something very important to the market. Working with small companies can be a big challenge for big companies.

There should be a common European industrial policy. Even if the attitude of the EC with regard to this question is more positive than it has been in the past, things are moving very slowly.

If we want to prepare the future, the youth has to be educated to science, which in school is not enough. There are other places, such as museums, or other ways to approach science, to get interested and curious to learn more. The intelligent capital is shaping the future. It is extremely important to do that. It is not only research and innovation in science, but also managing and having relations between people. New applications in innovation have to be shared with the world.

It seems that, owing to new ICT, there is a new world in preparation, which is not only research and not only industries, but probably shaping a new world.

In his conclusion, the session's **chair**, Bror Salmelin, European Commission, thanked the moderator for orchestrating the session. He referred once again to a piece of music by highlighting that orchestrating is an important word in the context of open innovation, because open innovation is about conducting something with different disciplines, different maturities, different kinds of ideas for one composition, which then is transmitted to the audience.

Disruptions and surprises make music interesting. Voices are reinforcing each other – they are coming from different directions, but at the end they are converging to the same goal. Orchestrating is a softer term than managing. Managing goes very much in the old type of controlling instead of catalysing. We ware moving into a new world, which will definitely be a richer one, if we capture the essence of it.

Citizen Centred e-Health

The session's **chair**, **ELENA BONFIGLIOLI, Director Corporate Citizenship, Legal and Corporate Affairs, Microsoft EMEA**, Belgium, [www.microsoft.com], welcomed the participants and eloquently introduced the panellists and the session's topic.

The **moderator** of this session, **DANIEL HAMILTON, Austrian Marshall Plan Foundation Professor; Director of the Center for Transatlantic Relations; Executive Director, American Consortium on European Union Studies,** USA, shared his most valuable expert view with the Forum's participants:

From IT to ET: "The Enabling Technologies Project"

Europe and the US may have very different ways of funding health, but they have much in common, too. A new program, called Enabling Technologies, is exploring what both might learn from each other.

The scope of the project scope is to position technology as a key enabler for economic growth and societal benefits across the sectors health services, environmental sustainability, education, and efficient government. But also to develop empirical evidence and rationale for government authorities to increase investment in technology deployment and innovation and to promote a policy framework that supports innovation (focus on emerging/enabling products, services), and to raise awareness on Cloud Computing and its benefits.

Developed in the framework of the Enabling Technologies Project, the TEMPEST Model, which now covers 12 EU countries and one region, is a research-led measurement and evaluation tool. TEMPEST works across the categories of Technology, Economic, Market, Political, Evaluation, Social and Transformation.

TEMPEST provides a roadmap for translating eHealth policy into practice. The goal is to move from an Informational (IT-driven) to an Transformational (Enabling technology-driven) healthcare system, focused on prevention and wellness rather than diagnosis/treatment and sickness.

It is a toolkit for businesses and policy-makers to understand the potential impact of specific technologies and systems and the barriers to achieving this impact and how these can be overcome by industry or by governments

PATRICE CRISTOFINI, Vice-President Partnership and Strategic Alliance, Orange Healthcare, France, gave an illuminating speech on

Mobile Health

e-Healthcare is a concept and the patient is at the core of it. Not the technology is the problem but how people will use it. Mobile e-Health applications can be found in three different categories:

First, services for health professionals (doctors, nurses, care givers, etc): This category concerns the exchange of medical information between health professionals. One could imagine mobile devices for care givers or mobile access to hospital information or clinical systems.

Second, health management (remote monitoring, tele-assessment, data collection telemedicine, etc): This category concerns the transfer of data coming from a patient to a healthcare professional. The patient can be at home or on the road and the idea is to enable the transfer of data from the patient to the healthcare professional at every time and everywhere.

The third category is prevention and wellness (education and awareness, personal emergency system, tracking, etc.): This will probably become a key topic in 10 to 15 years.

mHealth is a kind of telehealth application using mobile devices. However, it is not the same in the North and the South. The problems are not the same: In Europe or other developed countries, one can image mobile health in chronic disease prevention and wellness. Here, m-Health is more focussed on how to reduce the cost expenditure and give access to new services. But in Africa or the Middle East, the idea behind this kind of application is how to facilitate the access to the care system. This is not the same approach to m-Health at all.

Mobile health is an e-Health solution. Medical data from a patient need to be pushed to a healthcare professional. For an industrial player, this represents a very complex system and the need to build partnerships all along the value chain -- starting from the patients, over device manufacturers, telcos and software industry to the healthcare ecosystem. It is very difficult to build a mobile health solution alone. There is the need for partnerships and a professional methodology. Without this kind of methodology, you are doing something that is not replicable.

mHealth is about efficiency but also about access to health. In the future, mobile Health will play a key role in the three above mentioned categories and will represent more than 50 percent of the revenues. The role of m-Health in emerging countries is to help reduce the economic and health divide. The economic models are not the same in developed countries and emerging countries. In emerging countries the profits must be shared between the shareholders and the market, this is not the case in developed countries.

mHealth is not a dream but a technological solution. Key factors of success are first of all healthcare data standards (e.g. DICOM, HL7) to ensure interoperability. Another key issue concerns large scale data hosting and healthcare data protection. The European common regulation of data storage, hosting and circulation is another important factor, as well as labels and standards on health content quality especially for mobile applications.

As Descartes put it: "It's not enough to have a good mind, the main thing is to use it".

LINDA ZECHER, Corporate Vice President Public Sector, Microsoft, USA, [www.microsoft.com], delivered a captivating presentation on

Citizens Want Access to Their Health Information

Conversations about health are very similar all around the globe. From a health perspective, every country is dealing with the same issues: an aging population and a more expensive healthcare management; how to go from curing diseases to trying to help prevent diseases, and, in that process, how to provide better information?

All governments are realising that although the solutions are local, their citizens are becoming more global: Citizens now want to know that they can have access to their healthcare information if required, the same way than they can have access to their ATM card with their financial information when they need to get money. It is interesting how countries are dealing with both the privacy issues and at the same time how they are dealing with access to information.

When working with countries to help solve those issues, Microsoft tries to look at a kind of connected health eco system. How to help them, from a technology perspective; do things faster, better and cheaper so that they can have access to the information. How to help them from a prevention standpoint predict and help them understand what health issues they might have, rather than dealing with that after the fact and looking for a cure. And how to provide from a technology standpoint the empowerment to the patient and to the healthcare professionals.

During a recent conference on breast cancer, all the women that had gone through breast cancer told the same thing: They went to the Internet and instead of waiting for their doctors to tell them what to do, they started doing their own research about possible prevention, different options to look at etc. Technology had very much become part of their cure. And they wanted access to that information. But the doctors also were talking about how they want access to that information.

Technology has become a way for people to share information more quickly. For instance, a new type of treatment is found in France that works. A doctor in Slovakia would like to know that so he can have his patient have access to this information very quickly.

People are worrying about privacy and governments are worrying about privacy of their data, but when it comes to people's own health - the moment they have a problem - privacy goes out the window and they want access to information and want to be able to share.

Microsoft has developed a cloud based computing product, a free application, called HealthVault. HealthVault is an Internet-based platform to store and share an individual's health information. Using HealthVault, people can store copies of their health records from providers, their health plans, pharmacies, schools, government or employers; upload data from home health devices such as blood glucose monitors and digital scales; provide data to healthcare professionals, coaches and trainers; and access information, products and services to help improve their health.

The idea is being able to collect information, being able to think preventatively rather than just after the fact, and also being able to decide who gets access to your information and how they can access it.

But technology is also going in another direction. It is trying to cross the lines of how surgeons or doctors can think more broadly on how can they use technology in the operating room. An example is the gaming product "Connect". It started as a game, but due to new applications developed, the product can be used in the operating room, e.g. to navigate a 3D image of a brain just by saying something while operating. There are many applications like that. Mobile is another example.

Technology is something that is going to be an enabler but it is driven by citizens wanting access to their information.

CATALINA IONESCU-DIMA, Policy Officer, ICT for Health Unit, DG INFSO, European Commission, presented with great know-how and enthusiasm

EU eHealth Agenda and Transatlantic Cooperation

For the EC it is clear that the patients should be at the centre of eHealth services. This is reflected in the EC's research and policy activities.

The EU roadmap for eHealth in terms of research started with linking all the points of care. This was about connectivity and electronic health records. Then, research has focussed on connecting individuals with Health Information Networks – which was, for instance, about wearable personal health systems, health status monitoring and chronic disease management. Today, European research is focussing on the virtual physiological human trying to get a full picture of the individual's health status for preventive medicine, safer medical operations and personalized treatments.

DG INFSO is investing in R&D in eHealth for over 20 years. This has resulted in some notable advances, but R&D alone can not change the world. It is necessary to enable innovation by bringing together many more players, budgets and gaining wider acceptance and trust. Innovation is key for getting Europe out of the many crisis it is facing today -- above all the economic crisis, but also climate, energy, security and demographic crises.

Thus, Europe 2020 calls for action to tackle societal challenges and through them to create new market opportunities and economic growth. The Europe 2020 initiative calls for 7 flagship areas where cooperation is required to achieve concrete benefits for the citizens.

Two Europe 2020 flagship initiatives have been adopted so far: The Digital Agenda provides a unique opportunity to move the eHealth agenda forward bringing major benefits for patients across Europe. As far as eHealth is concerned interoperability is the key, because when systems talk to each other it means quicker, better and safer care. One key action in the context of eHealth will be to propose a recommendation defining a minimum common set of patient data for interoperability of patient records to be accessed or exchanged electronically across Member States by 2012. This will be done through the epSOS project.

Standards and interoperability testing and certifications are essential steps to the fragmented eHealth market and to ensure transparency and growth. Moreover, interoperability will enable better competition on a EU scale, leading to higher quality and safer eHealth solutions at a lower price.

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eHealth is about empowering patients, ensuring that they have the knowledge to be properly informed about their health. For this reason, one of the key actions of the Digital Agenda is to equip Europeans with secure online access to their medical health data by 2015.

Telemedicine is one of the key drivers of an efficient economical patient centric eHealth system, for this reason the Digital Agenda intends to achieve widespread deployment of telemedicine services by 2020 in the EU. This online access and telemedicine services could provide a simple and effective way for patients to access their own health records, make an appointment, get a second opinion, learn more about managing their conditions and taking preventing measures to stay healthy.

The European Innovation Partnership (EIP), adopted on 6 October 2010, is the second flagship initiative of Europe 2020. It represents a novel concept of the Commission to tackle societal challenges through linking research and innovation and uptake and turn them into opportunities. The EIP on Active and Healthy Ageing was announced in the Commission's communication in October launching an Innovation Union. This initiative aims at improving the framework conditions for research and innovation in Europe to ensure that innovative ideas can be turned into products and services, to create growth and jobs and to address societal challenges.

The partnership will pursue a triple win for Europe: It will enable people to live a healthy and independent life while aging, it will improve the sustainability and efficiency of social and healthcare systems and it will boost and improve the competitiveness of the markets for innovative products.

MICHÈLE THONNET, e-Health Official Representative of the French Ministry, France, outlined some great ideas concering

eHealth in France

Privacy is a top functionality. France is very aware of this and all actions undertaken in the healthcare sector are governed by this. It is important, not only to ensure privacy of the patients but also of their families.

What people are focussing on depends very much on their role. People are citizens, but they can also be a relative, a patient, or a healthcare professional. The easy use of health should be able to give an insight in and to distinguish the different roles. That is the reason why trust is very important. Technology is a very good enabler for trust in healthcare, but it is only a necessary condition, not a sufficient one. The discussions about healthcare have to take into account all the different stakeholders' perspectives.

Coordination and continuity of care is very important and electronic health records are important to exchange data – but before thinking about the exchange of data, one has to think about the access to these data. And in this context it is of highest importance to ensure to clearly identify and authenticate all actors -- not only the patients but also the healthcare professionals. Healthcare professionals who access their patients' data have to be sure that these data are the right, updated and validated ones.

In 2002, France adopted the so-called "loi Kouchner", dealing with the fact that data belong to the patient and each usage of these data has to be based on the freely given consent of the patient. To be sure that these data are really validated, France proposes some kind of

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certification of the website in order to ensure the quality of the health website -- not in the sense to be sure of the content of the data, but to be sure that the process in which the data was collected was transparent to the users.

First, there is the concern of the quality of the data, then the access and authorization process, and then the exchange of data. However, the exchange of data is not the same as sharing data. If you share data you have to have the same concept and understanding of the data than the sender.

Semantics is a very difficult but mandatory area. There are different international, national or regional and repositories of data and discussions on an international level will be necessary to enable international cooperation.

Interoperability is not only about semantics, but also about standards. Especially in Europe each county has its own national legislation for healthcare, which impedes to a certain degree the mobility of patients, not only inside a country but cross-boarder.

Smart Open Services for European Patients – epSOS is an Open eHealth initiative for a large scale European pilot of patient summary and electronic prescription.

The goal of epSOS is to develop a practical eHealth framework and ICT infrastructure that will enable secure access to patient health information, particularly with respect to basic patient summaries and ePrescriptions between different European healthcare systems.

Another cooperation project France is participating in is the EU Thematic Network CALLIOPE, which stands for "CALL for InterOPErability" with the focus on eHealth.

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Q&A

The first question was addressed to **PATRICE CRISTOFINI**, Orange, and concerned the issue of how to create a business model that makes mobile health work. Patrice Cristofini answered that it seems necessary to begin with pilots, probably at a regional level.

It will be indispensable to carry out an analyse on possible business models because the key question is: Who will use the mobile health application and who will pay for it? Is it the user/ citizen who will pay for the mobile application? And, if the citizen does not pay, who will pay for the citizen? Public insurances, private insurances?

As far as telehealth applications are concerned, the demand comes from the industry. The cooperation between Orange and Sorin, a provider of cardiac defibrillators, was given as an example: Sorin Grouo asked Orange to develop a solution to monitor cardiac defibrillators (from patients to the cardiologists). This solution is currently deployed in France. The initial demand came from the device manufacturer and players like Phillips, Siemens and others are interested in launching such service because there is an economic model.

However, as regards prevention and wellness, Orange runs a portal providing innovative mobile services, such as giving patients access to the to their vaccination cards, finding a doctor or nurse etc., but the question is: who will pay for that. From an economic point of view, there is a huge ROI only if there is a mass market,

The following question concerned the balance between enabling individuals to work on their own health – no matter where they are – and the issue of privacy concerns with different jurisdictions and regulations.

LINDA ZECHER, Microsoft, answered from a security standpoint: When governments are looking for ways to become more nimble and more cost effective in the context of healthcare, the cloud is an environment that allows them to do that. But it is not an environment that forces them to use technology in a way that is not secure. There are two aspects to it: There is the security standpoint and making sure that all applications and data are secure. And there is the policy side, which concerns the question where data reside. People are constantly debating about the public cloud and the private cloud and what does that mean. Governments have to parse this. Imagine a healthcare application in the cloud: That is probably something where government privacy laws can be an issue. The EU is grappling with that right now. They are trying to figure out what is that level of collaboration and cooperation that they need at the same time securing privacy. But the other side of this is that there are some applications that you do not need.

Allowing individuals to access their own data, wherever they are in the world, while their data are residing in their home country, is a great way to access and utilize the cloud. But as a country looking at this, there is the constant concern where the citizen information reside.

It is a very challenging process governments are currently going through. However, citizens just want solutions. Citizens are less concerned about where their data reside as long as they know it is secure. The same way people go on the Internet and use their credit card to buy something over the Internet when it is secured. It is a new paradigm for governments. Citizen movement and the desire for information sharing will drive policy concerns.

CATALINA IONESCU-DIMA, European Commission, added some reflections on privacy and data protection from the EU perspective:

The EU has the data protection directive, which allows the free movement of data within the EU. However, in practice - when Member States have implemented the directive -, there are still some differences in the level of protection between the Member States which could hamper the free movement of data. The directive is currently under revision and this is one of the topics addressed. As regards the exchange of data between the EU and the US: It is more difficult than within the EU but not impossible if some criteria are respected.

In the context of security of data, the Commission is supporting privacy enhanced technology, really including in the technology features that allow to see that data protection regulation are being observed.

MICHÈLE THONNET, French Ministry, stressed the fact that there is a difference between mobility of patients and citizens and the mobility of data, even if the data tries to follow the patients or citizens.

As regards security, security is sometimes seen as a very crucial issue by citizens and healthcare professionals. It is different when speaking about patients, because it is true that when a patient looks for immediate care, the patient does not worry so much about the security of the data – but as a citizen, the individual or healthcare professional might not want the disclosure of data.

The European data protection directive was not interpreted in the same way in different countries. Data could be shared even nationally or regionally only if the individual gives the consent that his or her data can be at least accessed. This consent is supposed to be given Freely but people have to be informed before. There was no other element and the way in which this can be implemented technologically very diverse.

Not only the patients are moving but also the data of the patient, and we have to go into the discussion on how to be sure that we have secure rules in order to share data cross border. There is no exact solution yet.

France has adopted a national law for the internal exchange of medical data. This law says that the data could be stored outside a hospital or the cabinet of the medical doctor only if it is stored in special conditions defined by the law. Furthermore, a neutral institution has to certify who cared about Certificates this provider as well as the process in which the data is stored. This might be a solution for the European cross border exchange of data.

The next question concerned the level of synchronisation with the policy makers in the ecosystem that has to make all that happen. Another question was about the fact that eHealth in most of the countries is a public services. How to ensure that does not become some kind of privilege.

MICHÈLE THONNET, French Ministry, stressed once again the importance of citizens, patients and their relatives in the different eHealth measures. This is why France focuses first of all on quality – not only websites, but information for health and well-being. As much as people are aware and educated they can use the new tools by having in mind some kind of rules in order to judge themselves if an information is trustworthy or not.

It s the role of a GP to listen to their patients. Technology will not replace this. Education and awareness are important,

LINDA ZECHER, Microsoft confirmed that education and health are really key. In poor areas, when mothers are educated, they end up having educated children but they also have healthier children. Education and health are very tied together.

The Internet is not the answer to everything. One has to be very careful about that. If looking at areas like sub-Sahara Africa, they are just trying to get clean water. People being involved in technology over the time often assume that it is ubiquitous and everybody is utilizing it. That is not the case. It is not about the Internet but about information sharing. This can be the Internet, mobile technology, or literally mouth to mouth. There are different communication mechanisms and technology hopefully can become an enabler to provide

that capability in as many different means as possible. However, it is important to make sure to provide the information so it is available to all by a variety of means – not just one.

CATALINA IONESCU-DIMA, European Commission, explained that in the context of policy making, the EU starts with research. The outcome of research then goes through deployment pilots and then it becomes policy. For instance, 20 years ago, the EU started with research on electronic health records and today there are large pilots on electronic health records and a recommendation on the interoperability of electronic health records.

In the context of cooperation with the stakeholders, the EC has a stakeholders group on eHealth, composed of users (patients and professionals), and also an industry group. They come together in the i2010 subgroup on eHealth, where representatives of the EU Members States meet. There is a regular dialogue between policy makers and stakeholders in eHealth.

Concerning the question of telemedicine being a privilege, for the moment both industries and governments see the added value of telemedicine, but there is a need to raise awareness on the professionals' side.

PATRICE CRISTOFINI, Orange Health, added the industrial's point of view: It is not possible to successfully launch an eHealth project without analysing the level of change management needed – both for users and healthcare professionals. When launching a project, a budged line for this has to be foreseen. Moreover, it is not the role of an industrial to analyse the content of the information. Industrials do not decide about the content but need to be what kind of good practises and information has to be provided.

The next questions concerned the issues of how to get from niches to larger deployment in health care and how is informed consent a managed healthcare system like in the US managed?

CATALINA IONESCU-DIMA, European Commission, pointed to the fact that evidence is the most important aspect. Governments do not take decisions without evidence. There is an EU Communication on telemedicine stating that telemedicine can be beneficial, but it is not up to the EU to tell its Member States to implement telemedicine – this is a Member States driven decision.

MICHÈLE THONNET, French Ministry, added that in 2004 France proposed some kind of framework in order to facilitate the deployment of such services trying to base the definition of telemedicine on a consensus of all stakeholders. Then, in 2008/2009, a second step was done with the reform of the healthcare system. The last step was done some weeks ago, when telemedicine was recognized as a real act of medicine, with some concrete quality criteria and the possibility of reimbursement by the insurances. This process was prepared by a large number of national pilots.

LINDA ZECHER, Microsoft stated that informed consent is an issue with technology or without. The interesting thing about technology is that innovation always proceeds policy and innovation always forces policy. This is part of the issue the EU, the US and many other nations around the globe are having, because innovation is going very quickly and governments are always try to figure out, what does that mean and is there enough protection for the citizens. But it is interesting to see how this evolves whether it is citizen driven, policy driven, whether security becomes and enabler or an inhibitor for people wanting to share information.

PATRICE CRISTOFINI, Orange Health, added that in order to have successful projects, there is a need to create win-win strategies in the initial phase – for the citizen/ patient, for the health professionals and for the organisation who pays for the service. This is the difficulty of a project, because when launching a project one has to be sure that every player involved is proud of being part and will continue to use its ROI to push the project on a larger scale. In order to move from a pilot, to an industrial project, it will be important to define assessment criteria for each project.

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D A Y 2 – M O R N I N G – P A R A L L E L S E S S I O N

Future Video Delivery:
Competition and Coopetition Between Broadcasters, Telcos and Internet Players

The **chair** of the session, MAURIZIO TALAMO, **Professor Department of Mathematics Università degli Studi di Roma "Tor Vergata", President Laboratorio Nestor**, Italy, welcomed the panellists and summarized the scope of the session by presenting an attention grabbing video clip on an individual's daily life with Internet and media.

People are creating a new virtual world promoting new ways to socialise on the Internet. This world is a world where there are many ways to deal with it. The strange fact is that people see in the Internet and multimedia an opportunity to promote themselves in a new way.

BARTOLOMÉ ARROYO-FERNÁNDEZ, **Acting Head of Unit "Networked Media Systems", European Commission**, gave a very interesting insight into the European Commission's perspective of

The Future of "Networked Media": A Research Perspective

We are evolving from HDTV (High Definition TV) to UDTV (Ultrahigh Definition TV) and later to integral imaging, which is electronic holography and alike. This causes a lot of pressure on the broadband network as it requires bandwidth from 1 Gbps up to 1 Tbps – despite ongoing efforts to improve data compression.

The Internet is rapidly turning into a video network. Out of the 42 Exabytes ($10^{**}18$) per month of consumer Internet traffic, likely to be generated every month in 2014, 56 percent will be due to Internet video. The average monthly consumer Internet traffic in 2014 will be equivalent to 32 million people streaming Avatar in 3D, continuously, for the entire month.

In addition to that the mobile data networks are becoming a prime channel for video delivery. Mobile video is forecast to account for the majority (66 percent) of the total mobile data traffic. Total mobile data traffic is expected to grow to 3.5 Exabytes per month by 2014.

Another trend concerns the impact of social networks and "search". The search function is the most used mobile browser feature (48 percent), closely followed by mobile social networking (40 percent). The entry point to Internet web services are search services and social networking. This year social networking has catch up with the search services which has been predominant until now.

Between 1980 and 2010 the technical evolution of devices moved from text interfaces, over graphic interfaces to touch interfaces. In addition to that there are different ways to access information. From the point of view of the broadcasters, broadcasting organisations have to evolve to multi-media delivery organisations and have to be cross active in all media services on different platforms.

Technical challenges of the networked media systems are the need for better interaction and immersion capabilities with virtual/augmented reality; dynamic media adaptation to delivery platforms, but also the need for efficient hybrid multicast/ broadcast through the Internet. As well as personalisation and tools for the participation of the "prosumer" (producing consumer). There is a need for an holistic approach for the digital media value chain and search of distributed multimedia objects.

Policy challenges concern in particular content protection and copy management. But also a single digital market and networked digital media which is addressed by the EU "Digital Agenda". As well as privacy, network neutrality and new business models.

The Europe 2020 initiative has three interlinked priorities: Smart growth to develop an economy based on knowledge and innovation; sustainable growth to promote a more efficient, greener and more competitive economy; and inclusive growth to foster a high-employment economy delivering social and territorial cohesion

The two flagship initiatives out of the seven flagship initiatives of the Europe 2020 initiative addressing research and innovation to meet the above mentioned challenges, are the Digital Agenda and the Innovation Union.

In order to increase funding for research, the EC has launched a number of PPPs, one of them addressing for instance the Future of the Internet, which is important in the context of content delivery through the Internet. PPPs as European innovation partnerships will be the instrument of the future to increase funding.

In the media area there are currently about 40 projects with a total funding of 200 million euros and targeting four areas: 3D media, audio-visual search, advanced media platforms and user centric media (focussing on user needs and social networking).

The EC is the funding agency for collaborative for EU-wide research and development. The EC promotes the collaboration between different stakeholders (industry, academia and research centres) and partially funds the projects. With about 1 billion euros per year -- which represents about 30 percent of the total funding for research in the EU, ICT receives a substantial part of the funding.

In the future, it will be important to address the new paradigms for realistic 3D communication over hybrid networks (hybrid broadcasting-broadband TV), as well as the issue of personalised, immersive and interactive TV (live events, ultra-high resolution panoramic displays, fog screens …) – all of that in the spirit of cooperation.

LINDA KINNEY, Motion Picture Association of America - MPAA, USA, delivered a brilliant and very distinguished presentation on the issue of

Copyright Theft and the Digital Economy

There are a lot of great new innovative applications, content and lots of opportunities, such as social networking in our digital world, but in addition it is also impacting creative communities – not just in the US but globally.

99 percent of files on the popular BitTorrent website found to be copyright infringing. Prior to broadband delivery a lot of people would not have picked up a CD or DVD out of a store and walked out of the store with stealing that content. But now, that we moved to an online world and more and more people are receiving their content through streaming these days, there are a lot more people willing to download that kind of content illegally in the privacy of their homes. Educating people about this problem and its implications will be an important initiative.

83,700,000 results appear in Google when you search for "free movie downloads." That just shows how much piracy in content exists. Some of it is certainly legal, but a lot of it represents a violation of the copyright laws.

In the case of "The Hurt Locker", an independent film that also won best picture Academy Award, there were 8 million legal views of that film and 10 million illegal downloads. This represents a situation where more people are actually viewing the content without paying and compensating the creative communities. That is a real policy challenge and it has to be discussed how to address this issue – even if there is no one size fits all solution.

In Spain, 80 percent of online consumers between the age of 16 and 55 have downloaded infringing content from peer-to-peer file sharing protocols.

We are moving toward a global video Internet society. Today only 33 percent of the Internet traffic is video. By 2013, it will be closed to 57 percent.

There has been an 98 percent increase in South Korea in broadband penetration over past 10 years. At the same time there was a 94 percent decrease in consumer spending on home video. It is almost a 1:1 ratio. As broadband increases in a country, there is a decrease in compensation to the creative community in that area.

About 2.4 million US jobs rely on the film industry – from accountants to truck drivers to florists to make-up artists. It is important to recognize, that in every country there are lots of jobs associated with the film industry. E.g., a lot of rental stores, those are usually small stores; get their money from legal sources. As piracy is increasing in each country, those jobs are going away. In the US, there is a 58 billion dollar loss to the US economy annually due to piracy and copyright infringement.

14 million workers in the EU are employed in the creative industries, which corresponds to 6.5 percent of the total EU workforce. 1.2 million jobs and 240 billion euros will have been lost in the EU's creative industries due to copyright theft by 2015. 4 billion dollar and 820,000 jobs are lost each year to the Indian entertainment industry due to piracy and copyright infringement.

In terms of the statistics, one thing all public policy makers agree on is that this move to a digital world and the Internet is bringing new types of problems and copyright infringement is one of them. There is an agreement that there is a harm, both to the domestic and global creative economy but also to jobs. Everywhere where filming takes place, there is a direct impact on those local economies.

What policy makers do about this problem is very much a country specific issue. However, there are some things that people are talking about globally, e.g., graduated response is one enforcement and education efforts. Graduated response is where either the copyright holder informs the Internet Service Provider or the ISP sends out notices to people who are engaging in this kind of copyright violation. The idea behind that is that some people will stop on their own and may either be unaware that these downloads are illegal, or maybe a child in a household is doing it and a conversation with the child will be enough to arrange things.

At the same time there also need to be a public policy initiative to address some of the large commercial operators, some of which are organized crime, who are putting together the cyber lockers and the websites where people can download and stream illegal content for free. A lot of those are making a lot of money by selling advertisements on their web sites.

At the same time all the stakeholders need to be working together, not just the content community but also the ISPs who deliver the content to the households. They need working together to help educating the population about this problem, to come up with appropriate enforcement that respects privacy, incorporates the culture of that individual country and addresses the global problems that copyright theft has brought along with this terrific thing called the Internet.

LASZLO HORVATH, President of ActiveMedia, USA, outlined with great devotion a line of thoughts of how people use the search engines to find content online:

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Can you afford not to be found?
Which model wins in the online video space?

</div>

The winners of the Internet will be the ones who are able to catch the audience.

We get too much information. We want only these few things that help us get along with our lives and that help our business. According to SAS, the amount of digital data recorded quadruples daily, which is an unbelievable number. But the search engines provide an answer in this information overload.

A search engine is a data base and the data in this data base is essentially every single website. It has three components: the crawler, the index and the algorithm. A website that is not visible for the search engines can be considered as non existing as no one will see the site. If you are not on the top of the search engine's results page, you are not going to make money. The search engines bring the consumer to the centre of decision making. The second one is the index. The hierarchy of results, based on relevance. And the algorithm is the secret source where the search engines compete with each other.

YouTube is the second biggest search engine. That is a testament how hungry the world is for video.

Google, Yahoo and Microsoft represent the old world that we are transitioning out of. We are transitioning into a world that is dominated by Google, Facebook and Apple, which represent three different models.

There are important consequences of having the search engines as the main platform to access the Internet. The fast search box essentially replaces browsing. People do not browse anymore. They use search engines to find information. So the most important interface to deliver a message or sell a product or just be known is not the web site but one step ahead of the website: it is the search engines' results page. If your web site shows up in the top thirty on relevant keywords on the major search engines, you have a chance to interact with your customers. We sites that are not visible for the search engines are rendered invisible for potential (and sometimes current) customers.

How people watch videos online? They find them on YouTube using the search engines, or they find it on social networking or portals. The latter one being less effective because when you are on a portal you are there for a certain activity. Thus the conversion rate is by definition much lower than when you search. People who search for something are in the moment of need and are looking for specific information. Another way is via viral message, but the chances for a video to go viral are extremely low due to very high competition. Another way is paid advertising, which is a very powerful tool using the search engines to drive traffic to your website but the budged can be limitation for that.

The technology that provides access to content online applies to video content online as well. And if you control your digital footprint, you will have a chance to engage new customers and to reach your mission online.

LETTERIA FASSARI, Researcher at the DISS (Department of Social Science) at the Faculty of Sociology, Sapienza, University of Rome, Italy, gave a fascinating presentation on

Platform As Play-form – A Lesson From Simmel

Simmel was a German thinker and sociologist living at the beginning of the 20th century.

Simmel considered different forms of social interaction: exchange, conflict, domination, and sociability. For Simmel, sociability focuses on a symbolically playing fullness of life and on a meaning which superficial rationalism always seeks only in the content – which means that sociability is a kind of artistic social play. Only the sociable gathering is "society" without qualifying adjectives, because it alone presents the pure, abstract play-form.

Society was considered as a play-form of association and the character of a purely sociable association is determined by the variety of personality traits, but it is important that the persons should not display their individualities with too much abandonment. In sociability, the most purely and deeply personal qualities must be excluded.

For Simmel, society was a pure and stylised form and conversation was the epitome of sociability as the abstraction of the forms of sociological interaction. Sociability needs a place. A place of freedom and true encounter. Pleasant relations and exchanges. Using Habermas' expression: a third place, where conversation emerges spontaneously, informally, "freewheel"….

Today, technology enables inter-subjectivity at the distance. If one observes the developments on the web from a sociologist's point of view, one can see that within the technology, the invisible wires which tie sociability become visible and tangible. Temporary, occasional, unstable relationships develop on the web a possibility of a constant connection. That does not mean that unstable relationships becomes stable, but people have the impression to be connected all the time.

There is also uninhibited communication (e.g., I am taking a bath; I am starting spinning, …) which corresponds to a kind of over-exposition, and trivial communication, such as flirting, flaming, stalking. A "famous" expression of Facebook is "You have to decide how to represent yourself".

This leads to changes in the standpoint of communication: From consumers, public and citizens, from objects of communication we became subjects of communication and producers of meaning. The line between consumption and production becomes thinner. There is definitely a convergent and participatory culture. People go the possibility of re-appropriation and re-claim of ways to communicate themselves and their interests outside stereotypes managed by professionals. Public audience is publicly connected.

The Net could be a public sphere. For Habermas, the public sphere has its origin in the café early last century, as a place of sociability. The café was a proto-political place, a gym of democracy. A public sphere is generated when acting on claims of power is transformed into action on validity claims: when public opinion can be formed. In public spheres the average citizens engage in topics of general interest. However, the public sphere declines under the attacks of hyper-rationalization (bureaucracy, experts) and massification (leisure replaces public discussion).

The web amplifies the big challenge to put together subjectivity and rationality. Subjectivity as the compelling desire to be yourself, and rationality as the necessary common ground for justifying and negotiate individual points of view.

SARAH BOERNER, Head of Marketing at Human Web, brilliantly described

The Invisible Threat

The Human Web is a Non Profit Organization that aims to cultivate an interactive social media platform deeply rooted in a currently-growing physical real life network formed by the people directly involved and touched by the "Human Web Journey."

The Human Web is dedicated to using the visual and performing arts to help diminish cultural, religious, linguistic, … borders – anything that let us say "us and them". The human genome was first sequenced in 2000. The first finding from a genetic point of view was that human beings are 99.9 percent the same. So, the differences that we see between people is 1/10 of a percent – and 99 percent of the time, people are focussing on this 1/10 of a percent.

The physical medium for the Human Web journey is double-decker bus that has been outfitted to transport 20 participants from around the world, following a specific itinerary that aims to eventually touch all locations reachable by road.

The intend is to spread a message through arts, but at the same time help remote communities have Internet access, set up WiFi hot spots if necessary, solar panels etc., pass out commuters, really help people to connect to this social network.

The bus members are not just people, they are a multi-cultural melting pot of people from all over the world with many different backgrounds. Many of them of them are artists. A strong network ahs been developed, even with high profile artists who care about delivering this message. And there is a collaboration that happens. The people will be singers, musicians, writers, Internet creators, bloggers… and every one has a specific task: to make sure the bus keeps going, feeding the web portal, etc.

In each village, town or city visited by the bus, local artists and musicians are sourced by the 20 bus "cast members" during the bus's week-long stay. At the end of the week, the cast members organize a collaborative performance with the local talents. This performance and the entire Human Web Journey can be followed by the growing Human Web Community, either physically or virtually through the Human Web WebTV. Human Web also has the strategic support of Cirque du Soleil.

The online Human Web community will organically attract like-minded individuals to form a self-perpetuating social network that continues to support cultural awareness via the promotion of local artists and musicians. The bus Use the universal language of music and art to communicate a message.

The second goal is the idea to make the Internet ubiquitous. Each location visited by the bus becomes better connected to the WWW as well as the Human Web Community. Partnerships with government, parastatal and private IT and telecommunications entities are being sought to ensure ubiquitous Internet access. Where the Human Web encounters lack of electronic infrastructures and connection to the Internet, it intends to set up a WiFi "HotSpot" around which locals can gather and connect to the WWW for free.

In order to expand the Human Web experience to as many countries as possible and to enable a vast number of people to benefit from e-Commerce and social networks, Human Web intends to establish a collaboration with companies such as Facebook, Twitter and Google/YouTube to promote its activities.

The first itinerary of the bus was a 45 day tour starting from Italy, over Slovenia, Hungary, Serbia, Macedonia, to Turkey. The second itinerary will start in Turkey, travel over Bulgaria, Serbia, Romania, Ukraine, Poland to Germany.

YIANNA VOVIDES, Director of the Instructional Design Center for Innovative Teaching and Learning, George Washington University, USA, provided a bright presentation on

Social Video: Its Role and Impact for e-Teaching – From A Higher Education Perspective

The history of social video platforms was a challenge in terms of time, money and expertise.

YouTube is only 5 years old and it is taking over the world. It is one of the biggest social video platforms, but there are more social video sites around the world. A few years ago TeacherTube, an online community for sharing educational teacher video, has been created, but it is far less known that YouTube. Social video in education is allowing to explore the world versus just limiting to educational resources.

As Clay Shirky in a presentation at ted.com mentioned, it is important for technology to become boring for education in order for things to work. Especially when thinking about distance education and learning: You want to make sure that the media delivery system, the infrastructure, and the technology is solid and stable and usually this does not happen with emerging things. It happens once that innovation has become common utility. For instance, e-mail in the beginning was new – it is expected now.

In terms of technology, higher education is looking at what is available and what is integrating with the systems in place to run the distance education programmes etc. Higher education is still driving a lot of this from cost management systems.

An instructor, as middle person, has to teach the teachers to utilize what is out there to get the students learn and reach the leaning goals that they have set. There is a gap, because these middle persons (the instructors) are still very much used to teaching the way they were taught. This is an important challenge to address: It is the human factor and the creativity part not just the technology delivering the content. It is about tools that support integration that make an impact. It is the creativity part that makes the difference. The question is: Will there be such a thing as an educational video that goes viral or are we only interested in cats playing piano?

Where are we going with technology? There is a need to move away from content delivery, searching and finding things and incorporating them to a degree that is possible, towards a learner generated option – but on the instructor's side as well. We are taking about skills and competencies that are not there yet in many faculties. Or there teachers do not have the time to spend. The more technology is moving in that direction the better. The ease of use of these tools is critical, but also integrating with existing systems that are available and being utilized for e-Teaching in higher education.

Thinking ahead and reflecting what is happening so far, there is a lot of consumption. A lot of faculties are incorporating social video and trying to motivate students with it. But in general, social video does not lead to learning. It ads a bit of motivation but it is not part of the course or part of the leaning process.

ALFREDO RONCHI, General Secretary EC Medici Framework, Italy, delivered a captivating talk on

The Forth Screen

Some authors refer to the "forth" as the last link of a chain started with the movie screen, the television screen, the personal computer screen and more recently the "mobile" screen, the "forth screen".

The history and evolution of the last two "screens" is related to the IT (r)evolution from big stand alone computers to the connection of some of them to the Internet or other networks, starting to exchange data and the introduction of the web technology.

Previous inventions, such as the telegraph, the telephone, the radio, and the computer itself, set the stage for this unprecedented integration of capabilities. Even the future evolution of such an innovation is into a degree unpredictable; will the global network be a mixture of networks (wired, wireless, satellite, sensors, peer-to-peer, private, phone and other appliances)?

This includes some major revolutions. A part from stand alone to ubiquitous always on, there is now a kind of info and service "sphere" all around. Moreover, there is a shift from top down info and services to bottom up: With new devices like iPhone or iPad people just click and receive a specific service, tailored for their needs.

Then, there is the shifting from "stand alone" users to communities, which is a complete different concept to work together and to contribute. Many people and companies are thinking about this way to provide useful content and are asking people, consumers, "prosumers" to contribute in order to set up interesting services. So, we passed from a "lack of content" to user generated content.

One of the side effects, is the "15 minutes of fame" -- an expression coined by Andy Warhol. "Celebrities" in the 21st century can now be famous simply by being in the right place at the right time. The social Web did the rest (Flikr, Twitter, Myspace, YouTube, FaceBook, Picasa, etc).

As regards competition between different media, we already saw in the past that new technology will not completely reduce the market of the previous technologies. There will probably be different arrangement and a balance between the old solution and the new one that rearranges the market.

Social networking is the "active" brother of peer to peer approach. As peer to peer communication and information interchange is the realm where "All the users are equal" social networking is the realm where "All the users are authors/contributors".

Nowadays we are experimenting the start up of a completely new way to use computers and write software. One of the significant innovations in this period has been activated by Apple introducing the iPhone before and more significantly introducing the iPad concept. Even if the basic idea is dated long time ago even before the iTunes on line shop different companies thought about online software market selling or even hiring software components thanks to the network.

The two basic innovation aspects introduced by Apple are a seamless hardware/software access to network content and services and a new way to sell and buy software in a digital market arena.

Let's start from the last one, the way in which it is conceived the Apps delivery platform facilitates the exchanges and re-opens the market to single software developers sometimes competing for their own 15 minutes of fame reaching the top of the hit parade sometimes looking for business opportunities. This mechanism changed the market approach moving this software market segment closer to other media markets such as music and. movie.

Looking more in detail to the Apps philosophy from the user point of view. Ninety per cent of the information accessible through the Apps is already available on the Internet so which is the revolutionary concept? The key of success of the Apps is the ease of use, the idea to provide one specific service in a very practical and easy to understand way. It is a kind of extension of the iPod concept one device specifically designed in order to provide one service or fulfill one task, no compromises.

The Apps are a "filter" between the "ocean" of content laying on the Internet and the user. In addition a set of tight rules defined by Apple ensures software quality standards and security. The Apps Market looks more similar to music and movie, there are trailers hit parade Apps of the week, etc.

Back to the first aspect mentioned, seamless access is relevant as well in this scenario because the service-sphere offered by iPhone and iPad perfectly fits both with the "disappearing computers" and the "information at your fingertips" concepts. such a shift in the perception of the service provision opens a new scenario where the so called "digitally divided" are probably less or no more "divided".

Global Network For Empowering Women's Innovation and Entrepreneurship

As you know, the European Network for Women in Leadership-WIL and GlobalWIN networks jointly hosted a lively high-level session, as part of the much awaited annual event Global Forum in ICT (Nov 9th). An eager audience of 100+ joined us to hear about tested practices empowering women in the digital age.

Global Networks. An On-Ramp to Modernity.

Melanne Verveer, US Ambassador-at-large for Women's Issues, set the scene with highlights on how women reached the cusp of their potential by connecting with one another, whether to advance their own business, large or small, to improve their skills or to acquire more knowledge.

TechWomen, a program pairing Middle Eastern professionals with their counterparts in Silicon Valley, as well as mWomen, an initiative meant to lift up women's status in developing countries by giving them access to mobile phones, were the Ambassador's cases in point. As these programs unleash their stories, it becomes clear that other women will benefit from their counterparts' progress, by sharing knowledge and resources.

In the more developed world regions, women may be better connected, yet their career prospects are still not as advanced as their male counterparts. In order for women to truly achieve career equality, they need to try alternative solutions. The panelists also agreed women need to seek professional mentors. This mentor relationship will allow women to make the shift from the support functions where they are crammed to the business side where the real power of decision making lies.

The Pipeline behind the Pipeline.

Asking themselves why women are not present in the board rooms, government bodies and large companies went to the root of the issue and installed various mentoring programs and succession preparation programs for women.

The roots of these inequalities can even be seen in early education experiences. While both female and male fourth graders show a similar interest in STEM classes, by the end of the eighth grade, girls' participation drops by half and participation continues to fall in college. Girls perception that math and science teachers prefer boys as well as their discontent with inferior grades, as compared to boys, deter their interest in such studies, argued **Linda Zecher**, Corporate Vice President Worldwide Public Sector, Microsoft.

Companies such as Microsoft and Verizon invested in programs (Digigirlz, Global Marathon) which connect girls with various specialists and managers whose role is to broaden the girls' horizons towards jobs in which they can't project themselves.

However, these kind of programs need to be supported by public policies that support 'STEM' initiatives; such as creating scholarship programs for girls suggested **Jacqueline Ruff**, Vice President International Public Policy and Regulatory Affairs at Verizon.

Kathleen Turco, Associate Administrator for the Office of Governmentwide Policy, explained that the US General Services Administration is encouraging retired employees to mentor current female employees to help empower women in their own career development. This mentor relationship gives women a resource with year of experience that will help prepare them for leadership positions.

These mentoring relationships are extremely well received, although the results will only be visible over time, as girls and young women go through the leadership pipelines. In order to increase success of these relationships, it is necessary to make a wise match between mentor and "mentee", as **Elena Bonfiglioli**, CSR Director at Microsoft noted.

Sharon Nunes, IBM's Vice President for Smart Cities Strategy & Solutions, described how IBM is identifying and preparing executive women for the boardroom. Taking into account female employees' career prospects, these programs showed that the (in)visibility of key positions, the exclusion from groups of decision makers, work/life balance, lack of sponsors and mentors were factors influencing the pipeline shrinking. Hence, what was needed was a strategic investment in preparation programs for women. Executives' participation was a requisite, along with creating clear stages for monitoring and evaluation.

It is debatable if one aspect of succession preparation should mean adapting women's communication styles to make them better prepared for the current male-dominant environment. **Sue Watts**, Head of Americas Outsourcing Services CapGemini, argued for women improving their authority styles, by making their voice heard. Nevertheless, it is clear that men need to be prepared to work more effectively with their female counterparts.

Using IT to Hinder Gender Stereotypes.

Networking and mentoring in a globalized world are dependent on the digital revolution. Yet, how can women become more involved when the digital era is male-driven?

Edit Herczog, Member of the European Parliament noted that innovative products and services can be developed by involving those who are subject of the innovation. Therefore, women must be among the 400,000 researchers that Europe is seeking.

Ruth Milkman, Chief Wireless Bureau of the US Federal Communications Commission spoke about the government's efforts to develop a digital infrastructure so as to increase the civic engagement. Access to broadband and teleworking solutions would enable citizens to be more engaged and eventually both women and men would have equal opportunities to meet other professionals, balance their work and personal lives, and access unbiased information.

Research by **Dr. Heller**, Professor in the Computer Science Department of the George Washington University, on "blogging" behaviors illustrates that people's old habits can endanger IC&T's neutrality. Women's voices online are less listened to than men's, even though the Internet is the media channel where women are the most visible and active.

Beatrice Covassi, newly appointed Digital Agenda Counselor for the EU Delegation to the US, is trying to build more bridges between European and US stakeholders by putting together practices encouraging women in technology.

AT&T is the sponsor of the afore-mentioned mWomen program. In low and middle-income countries, 300 million fewer women are mobile phone subscribers, because men still have a monopoly over technology, explained **Ellen Blackler**, Executive Director-Public Policy.

In a nutshell, to broaden women's participation in economic, social and political decisions, the digital age needs to be driven by both women and men. These leaders also need to act as role models for girls and young women. Reinstating the value- and gender-neutrality of technology is a key part of bringing women in developing countries on the ramp to modernity and to increase career opportunities for women executives in the more developed countries of the world.

Audience Survey Results. How Women Network.

We took advantage of the top get-together (with 80% female participation), to take a survey evaluating our audience's interest in networking opportunities. Ninety percent of our respondents are part of a network, mostly professional networks (see figure 1). However, only 18% of female respondents belong to a women's network outside their organization and only 8% to an internal women's network.

The benefits that are sought from a network are personal development, finding information and meeting professionals. The majority of respondents described their networks in positive terms (caring, helpful, giving insights, relevant, innovative), while networks which don't bring the expected benefits are described in terms such as populous, inconsistent or having a limited relevance.

The majority of respondents engage with other members of their network(s) through email, direct meetings and networking events, while online platforms are used in a lesser degree. 25% of respondents meet with at least one member of their network once a week, while 32% once every two weeks.

85% of respondents work in organizations which have established gender equality policy initiatives. They range from career advancement policies such as gender quotas and appointing women in high-level management positions to recruitment and retention policies such as blind vetting of work sample applications and tenure clock policies. In half of the cases, these policies are considered somewhat effective and very effective in only a third of the cases.

The session was followed by a GlobalWIN reception where **Beatrice Covassi** was the guest of honor. The reception was opened by **Debra Waggoner**, GlobalWIN Board of Directors Member and Director Global Government Affairs, Corning Incorporated as well as by **Dorothee Belz**, WIL Board of Directors Member and Associate General Counsel, Microsoft, and provided an excellent opportunity for all attendees to deepen their dialogue and broaden their network.

C O N F E R E N C E   D O C U M E N T A T I O N

All conference documentation, including programme, presentations and slides, speakers' profiles, participant's testimonials, and related information on the Global Forum 2010 are made available for download on the website of ITEMS International http://www.items-int.eu.

H A V E   A   Q U E S T I O N   O R   C O M M E N T ?

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

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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 next year's Global Forum.

The team of ITEMS International will be pleased to answer any question and to provide you with more information about the next year's Global Forum 2011.
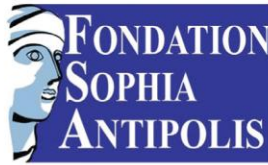
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APAC	Australian Partnership for Advanced Computing
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ATM	Automated Teller Machine (cash machine)
CAGR	Compound Annual Growth Rate
CD	Compact Disc
CEO	Chief Executive Officer
CFO	Chief Financial Officer
DG Infso	Directorate General Information Society and Media
DICOM	Digital Imaging and Communications in Medicine
DVD	Digital Versatile Disc / Digital Video Disc
EC	European Commission
EEG	Electroencephalography
eID	electronic Identity
EIP	European Innovation Partnership
EU	European Union
FCC	US Federal Communications Commission
Gbps	Gigabyte per second
GDP	Gross Domestic Product
GHG	Green House Gas
GHz	GigaHertz
GNP	Gross National Product
GP	General Practitioner
GPS	Global Positioning System
GSA	US General Services Administration
Gt	Gigatons
G2G	Government to Government
HDTV	High Definition TV
HL7	Health Level Seven International
IC	Information and Communication
ICT	Information and Communication Technologies
IP	Internet Protocol
IP	Intellectual Property
Ipv4	Internet Protocol version 4
Ipv6	Internet Protocol version 6
ISP	Internet Service Provider
IT	Information Technologies
ITU	International Telecommunication Union
LED	Light-Emitting Diode
LTE	Long Term Evolution
LLU	Local Loop Unbundling
Mbps	Megabits per second
Mbit/s	Megabits per second
MHz	Mega Hertz
MIT	Massachusetts Institute of Technology
Mn	Minutes
MRI	Magnetic resonance imaging

NGA	Next Generation Access
NGN	Next Generation Network
NGO	Non-governmental Organization
OTT	Over the top
PC	Personal Computer
PE	Price to earnings
PPP	Public Private Partnership
Q&A	Questions and Answers
QoS	Quality of Service
R&D	Research and Development
RFID	Radio Frequency Identification
ROI	Return of Investment
RTD	Research and Technological Development
RUS	US Department of Agriculture's Rural Utilities Service
SE	Search Engine
SERP	Search Engine Results Page
SME	Small and Medium-sized Enterprises
Tbps	Terabyte per second
TCO	Total Cost of Ownership
TDM	Time Division Multiplexing
TSCP	Transglobal Secure Collaboration Program
TV	Television
TWh	TerraWatt hours
UDTV	Ultrahigh Definition TV
UN	United Nations
UPS	Uninterruptible Power Supplies
US	United States
USA	United States of America
WiFi	Wireless Fidelity
WWW	World Wide Web
W3C	World Wide Web Consortium
VoIP	Voice over Internet Protocol
XML	Extensible Markup Language
2FA	Two-factor authentication
3D	Three Dimensional
3G	Third Generation
3G+	Third Generation evolved
4G	Fourth Generation

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