Global Forum

Shaping the future 2013

DRIVING THE DIGITAL FUTURE

Strategies to Grow Stronger Communities & Businesses

MONDAY 28TH & TUESDAY 29TH OCTOBER 2013

PALAZZO DEI CONGRESSI DELLA STAZIONE MARITTIMA TRIESTE, TRIESTE, ITALY

Conference Proceedings

Organizers

ITEMS INTERNATIONAL
Strategic Consulting in a Digital World

HEALTH LOCAL AUTHORITY OF VENICE

Fondazione Stock Weinberg
per la coesistenza tra i popoli

Fondation Sophia Antipolis

contents



Report written by
Susanne Siebald, Communications Consultant

acknowledgements

During the past two decades, the Global Forum has become an internationally recognized Think Tank for exchange and networking among governments at national, regional & local levels, private & public organizations, research & development experts and we would like to take this time to thank all the persons and organizations who helped us making the Global Forum 2013 another success.

The 22nd edition of the Global Forum took place on Monday, 28th and Tuesday 29th, October 2013, in Trieste, Italy, and we would like to express our sincerest thanks to the City of Trieste, the Region, the Province, the Chamber of Commerce, the University of Trieste and all the IT&S research organisations.

The Global Forum is the result of preparations in which the partners, sponsors, panel chairs, moderators and the speakers of the sessions have all been active participants. Without their commitment and dedication it would not have been possible.

We would also like to thank our distinguished experts – moderators, panel chairs and speakers, who have taken time out of their extremely busy schedules to share their knowledge and expertise with us.

Last but certainly not least, we would like to extend a special thanks to

The main sponsors of the Global Forum 2013, which are:

GPI Group, AT&T, SBL, Cassidian, Verizon, Telit, InfoCert, Dedalus, Insiel Mercato, TBS, Alcatel-Lucent, CBT, GE Healthcare, PayPal, Qualcomm, solinfo, ETSI, University of Trieste, DPI, NoemaLife and Mcube.

As well as the supporting sponsors, which are:

Insiel, Friuli–Venezia Giulia, Siram, Confindustria Trieste, Truyoins, Medic4all, Consorzio PromoTrieste, GSMA, Bingham McCutchen, Samman Law Firm and Women in Leadership (WIL), PTI, Forum PA and MEDICI.

Once again, thank you all and looking forward to seeing you all next year in Geneva!

Sébastien Lévy
Vice-President of the Global Forum

Sylviane Toporkoff
President of the Global Forum

The Global Forum 2013 was realized with the active and efficient support of its

Main Sponsors

and with the support of its

Supporting Sponsors

28 October 2013

Sébastien Lévy, Vice President Global Forum / Shaping the Future & Partner Items International; Administrator Silicon Sentier, France

Sylviane Toporkoff, President, Global Forum / Shaping the Future, Founder & Partner Items International; Professor at the Institute of European Studies, University of Paris, France

Keynote Speakers:

Roberto Cosolini, Mayor of the Municipality of Trieste, Italy

Igor Dolenc, Vice President Provincia di Trieste, Italy

Paolo Panontin, Regional Deputy to the Public Administration Regione Autonoma Friuli Venezia Giulia, Italy

Maurizio Fermeglia, Rector University of Trieste, Italy

Amb. Margit Waestfelt, CEI Alternate Secretary General, Italy

Ambassador Miriam Sapiro, Deputy United States Trade Representative

Chair: **Roberto Viola**, Deputy Director General DG CONNECT, European Commission

Moderator: **Anna Gomez**, Partner Wiley Rein LLP, USA

Keynote Speakers:

Commissioner Maureen K. Ohlhausen, Federal Trade Commission-FTC, USA

Laszlo Horvath, President Active Media, USA

Theresa Swinehart, Senior Advisor to the President on Global Strategy, ICANN - Internet Corporation for Assigned Names and Numbers

Willie Lu, Chairman and Co-founder Palo Alto Research Group; Chief Inventor and "Father", Mobile Cloud platform for Mobile Devices, USA

Jørgen Abild Andersen, Chairman of OECD's ICCP Committee ; Director General Telecom Danish Business Authority - Ministry of Business and Growth, Denmark

Chair & Moderator: **Steven Adler**, Program Director IBM Data Governance Solutions, IBM, USA

Speakers:

Gérald Santucci, Head of Unit Knowledge Sharing, DG Connect, European Commission

Margot Dor, Director Partnerships & EU Affairs, ETSI - European Telecommunications Standards Institute

Guido Walcher, Telit Wireless Solutions, Italy

Steven Haines, Founder/CEO Sequent Learning Networks, USA

Claudia Selli, E.U Affairs Director AT&T, Belgium

Pascal Poitevin, Head of Department, Secretary of the Strategy Committee of Information Systems, Institut de l'Elevage, France

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

Keynote Speakers:

Gabrielle Gauthey, Executive Vice President Global Government & Public Affairs Alcatel-Lucent, France
International Trends For New Investment Models in NGA

Lorenzo Montermini, IT Manager GPI Group, Italy
New Frontiers and New Challenges For Public Healthcare

Thomas Rosch, Counsel Antitrust & Competition Practice Latham & Watkins, USA

Michel Catinat, Head of Unit for Key Enabling Technologies and ICT, DG ENTERPRISE European Commission
Public sector Driving Innovation

Chair: **Edi Kraus**, Councillor for Economic Activities Municipality of Trieste & Director General, Julon Ljubljana d.d. & Board of Directors Member, Aquafil S.p.A. Treste, Italy

Moderator: **Hugo Kerschot**, Managing Director IS-practice, Belgium

Speakers:

Troy Nachtigall, Prof. ISIA Firenze, Representative of the City of Trieste, Italy
Breeds Trojan Horses

Ching-Chih Liao, Deputy Secretary-General Taichung City Government, Taiwan
1 Pasture Can Change A City

Eikazu Niwano, Producer Research and Development Planning Department, NTT Corporation, Japan
eSelf-Government/ Governance

Kenji Hiroshige, Director London Representative Office, FMMC- Foundation for Multimedia Communications, Japan
Integrated Public Alert Platform

Hanne Melin, Policy Strategy Counsel, eBay Inc. Public Policy Lab EMEA, Belgium
Policy Innovation through Collaboration – Iteration - Data !

Philippe Perennez, CEO and R&D, Navidis, France
Smart City + : Digital platform of local proximity services

Fabio Perossini, Managing Director Kpeople ltd, United-Kingdom
CROSS: Citizen Reinforcing Open Smart Synergies

Alan Shark, Executive Director PTI – Public Technologies Institute; Associate Professor of Practice Rutgers University School of Public Affairs & Administration, USA
Smart Data to Help Restore Citizen Trust - from Theory to Best Practices

Julia Glidden, Managing Director 21C Consultancy, United-Kingdom
Kicking-Off a Smart City Platform

Chair & Moderator: **Sébastien Héon**, Director Public Affairs Cassidian CyberSecurity, France
Cyber Crisis Management Handbook

Speakers:

Frederick Douzet, Professor & Associate Director French Institute of Geopolitics, University of Paris 8; Castex Chair of Cyberstrategy (IHEDN/EADS), France

Paul Wormeli, Executive Director Emeritus Integrated Justice Information Systems Institute -IJIS ; Innovation Strategist, Wormeli Consulting, LLC, USA
Threats from the ether

Michel Toporkoff, Attorney at Law, Toporkoff Law Firm, France
Cybersecurity: Recent French Courts Cases

Nagaaki Ohyama, Professor Tokyo Institute of Technology, Imaging Science and Engineering Laboratory, Japan
Introduction of new ID number in Japan

Emmanuel Harrar, Partner Dreyfus & Associés, France
How to protect Intellectual Property Rights in the new gTLDs?

Gisèle Ducrot, Casualty and Servicing Client Manager, AXA Matrix Risk Consultant, France
Cyber risk prevention approach

Frédéric Polycarpe, Head of International Sales & Programmes Cassidian CyberSecurity, France
Available Technical Tools and Solutions

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

Speakers:

Fiona Taylor, Director, European Affairs & Global Internet Strategy Verizon, Belgium

Nataša Pirc Musar, Information Commissioner, Republic of Slovenia

John Giusti, Head of Spectrum GSMA Association, United-Kingdom

Claudia Selli, E.U. Affairs Director AT&T, Belgium

Thomas Spiller, Vice President Public Policy, EMEA, The Walt Disney Company, Belgium

Innocenzo Genna, Founder and Partner Director Genna Cabinet, Belgium

Olivier Duroyon, Director Public Affairs Alcatel-Lucent, France

Paolo Plebani, Founder & CEO Powerplex, Italy

Chair: **Giampaolo Armellin**, Head of Research Unit GPI Group, Italy
Towards a Digital Healthcare Environment

Moderator: **Shai Misan**, CEO Medic4all, Israel/Italy

Speakers:

Paolo Barichello, CIO Azienda ULSS N. 8 di Asolo, Italy
Sustains Project- Support Users To Access Information and Services

Carmelo Battaglia, Commercial Director Public administration and institutional relations, Infocert, Italy
Exploiting Trusted Healthcare Data

Giorgio Calzetti, CEO & **Alessandro Borgato**, Sales Manager, Solinfo, Italy
Global ICT Outsourcing Service: A New Service Model

Gian luca degli Stefani, HCIT Regional Commercial Leader Italy, Malta & Israel GE Medical Systems Italia S.p.A, Italy
GE Healthcare

Serena La Manna, Project Manager R&D Division, DEDALUS SPA, Italy
The vision of Dedalus for interoperability Innovation in the eHealth sector

Luca Giobelli, AOUI Verona, Italy

Sara Zanchiello, Technology Transfer Broker, AREA Science Park, Italy
Moving towards an integrated regional eHealth ecosystem: FVGasaL@b

Alberto Steindler, CEO Insiel Mercato, Italy
The Holistic Approach to eHealth: a New Model Aiming at Excellence

Diego Ponzin, Director Veneto Eye Bank Foundation & Corneal Consultant, Italy
Information technology, corneal transplantation and eye banking

Michèle Thonnet, Official Representative of the French Ministry of Social Affairs and Health in the European & international e-Health Domain, France
eHealth for eHealth: Designing Services for Healthy Citizens

Mario Po', Executive Director, Azienda ULSS Venezia, Italy
Increase safety of tourists and all people in Venice

Chair & Moderator: **Luca Mastrogregori**, Head of eProcurement Strategies Department, Consip, Italy

Speakers:

Nitya Karmakar, Professor Macquarie University, Sydney, Australia
Ethics in Procurement: A Milestone for creating a transparent Business Environment

Diego Bravar, Chairman & CEO, TBS Group, Italy
Clinical Engineering & ICT outsourcing services for better procurement and management in healthcare

Augusto Coriglioni, Chairman Information Technology & Delegate for Research and Innovation, UNINDUSTRIA (Confindustria Lazio), Italy

Roberto De Riccardis, Head of Strategies, Program Management & Business Consulting dept., ARCA – Agenzia Regionale Regione Lombardia (Regional Procurement Body), Italy
The Region Lombardia Experience

Carlo Parmeggiani, Director Public Sector - South Europe, Intel, Italy

29 October 2013

2ND DAY • BREAKFAST WORKSHOP • Women in Leadership Women's careers in the Digital Age • p 130

Welcome: **Thaima Samman**, President WIL-Women in Leadership in Europe; Partner & Associated Lawyer, Samman Law Firm, France

Opening Keynote: **Commissioner Maureen K. Ohlhausen** , Federal Trade Commission - FTC, USA

Speakers:

Myriam El Ouni, Alliance Manager Microsoft, France

Eliane Fiolet, CEO, Ubergizmo, USA

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

Marcella Logli, Director, Corporate Identity & Public Relations ; General Secretary Telecom Italia Foundation, Italy

Claudia Selli, E.U. Affairs Director, AT&T, Belgium

Marta Turk, President of the Board & Director, CCI Ljubljana, Regional Chamber of Commerce, President Founder of the Association of Women Entrepreneurs GIZ Podjetnost (Member FCEM), Slovenia

Chair: **Bror Salmelin**, Adviser Innovation Systems, DG CONNECT, European Commission
Reflections from Open Innovation 2.0 paradigm

Moderator: **Jay E. Gillette**, Professor of Information and Communication Sciences, Center for Information and Communication Sciences and Senior Research Fellow, Digital Policy Institute Ball State University, USA
Pushing Paradigms for Innovation and Success: Factors Defining Primary Perception (Paradigms)

Keynote Speakers:

Gary Shapiro, President & CEO CEA - Consumer Electronics Association, USA
Innovation is a belief system

Enrico Fiore, Chairman Truyoins, Israel/Italy

Nicole Dewandre, Adviser for Societal Issues, « Digital's Social Sciences and Humanities » DG CONNECT, European Commission
The Onlife Manifesto

Antoine-Tristan Mocilnikar, Energy Digital Infrastructures Head, Interministerial Delegate to the Mediterranean, France
Innovation and Digital Society in Mediterranean

Ann-Mari Fineman, Head of IT Applications & Services Department, VINNOVA - Swedish Governmental Agency for Innovation Systems, Sweden
Cross-boundary Innovation

Yoshio Tanaka, Professor Tokyo University of Science Graduate School of Management of Innovation Studies; Emeritus Councilor National Institute of Advanced Industrial Science and Technology, Japan
Servicization

Michael Stankosky, Research Professor George Washington University, USA
How to Design a Successful Knowledge Management Initiative

Chair: **Thomas Spiller**, Vice President Public Policy EMEA, The Walt Disney Company, Belgium

Moderator: **Jean-Pierre Chamoux**, Professor Université Paris Descartes, France

Speakers:

Ingrid Andersson, Senior Advisor Patient Certificate Scheme, Sweden

Amadou Daffe, CEO\Co-Founder Coders4Africa, USA & **Ellwood Kerkeslager**, CEO Information FuturesL.L.C, USA Africa
Reinventing Itself By Creating Digital Content & Applying its Creativity

Denis Gardin, Senior Vice-President, Head of New Technology Ventures, EADS CTO, France
MiRA – Mixed Reality Application: Linking The Objects to Their Digital Genome

Blaz Golob, Director of GoForeSight Institute & Chairman of CeGD SEE Regional Platform, Slovenia

Franco Grossi, Professor State University of Kazan, Republic of Tatarstan, Russia Federation
Holistic ICT, an innovative Ergonomic Approach to the New Media

Olivier Las Vergnas, General Delegate for Inclusion, Training and Professional Activities; Director Paris La Villette "Cité des Métiers", Universcience, France
About the link between "on line" innovation & "physical world" innovation

Eric Legale, Managing Director Issy Media -City of Issy-les-Moulineaux, France
The Digital Fort, a digital eco-district in Issy

Manlio Romanelli, President M-Cube S.p.A., Italy

Jane Mago, Executive Vice President General Counsel, NAB - National Association of Broadcasters, USA

Chair: **Colin Williams**, Director SBL, United-Kingdom

Speakers:

Paul Wormeli, Executive Director Emeritus, Integrated Justice Information Systems Institute -IJIS; Innovation Strategist, Wormeli Consulting, LLC, USA
NIEM: National Information Exchange Model

Michael Stankosky, Research Professor George Washington University, USA
Knowledge Assurance, 21st Century Risk-Management

Magnus Wakander, Subject Matter Expert within Cyber Security at FMV; Visiting Lecturer & Course Developer Swedish National Defense College, Center For Asymmetric Threat Studies, Sweden
Supply Chain, Enterprise Risk Management

Chair & Moderator: **Hervé Rannou**, CEO Items International, France
Citizen Data

Speakers:

Jean-Christophe Clément, Expert Energy Engineer, Chamber of Industry and Commerce of the French Riviera, France
Local Smart Grids Initiatives – Towards a connected ecosystem

Michela Vellico, Remote Sensing Expert National Institute of Oceanography and Applied Geophysics- OGS, CARS group (Cartography and Remote Sensing), Italy
The EnergyCity Project

Marcello Guaiana, Senior Officer International Technology Transfer Programme, AREA Science Park, Italy
Geothermal and Solar Driven Innovative Energy Plants for Conditioning Residential and Commercial Buildings as ICT-Based Network of Open Laboratories

Sergio La Mura, Technical, Research & Development Director, Siram, Italy
Thermal Energy Smart Grid

Massimo Lamanna, Section Leader – Data and Storage Services Group, Information Technology Department CERN – European Organisation For Nuclear Research, Switzerland
Is the Big Data Experience at CERN Useful for Other Applications?

Adriano Ruchini, EFQM Excellence Advisor, Italy
A Green Wheel for Smart Cities Striving for Excellence

Marinka Vignali, General Secretary and EU Coordinator ARESS - ARAB Renewable Energy and Sustainability Society, Italy
ARESS: Arab Renewable Energy and Sustainability Society

Chair & Moderator: **Jože Gričar**, Chair Department of Informatics, University of Maribor, Slovenia
Relevance of the Cross-border eCollaboration in the Danube eRegion

Speakers:

Christian Kittl, Managing Director, Evolaris Next Level, Graz, Austria & Mobile Living Lab, & Steering Committee, ALADIN – ALpe Adria Danube Universities Initiative, Austria

Maurizio Fermeglia, Rector University of Trieste, Italy

Jani Recer, Assistant Director for Informatics University Medical Centre Ljubljana, Slovenia
eHealth Collaboration in Danube Region

Tomaž Breznik, Presales Specialist, SAP, Slovenia
Tourism Insight @ SAP HANA

Edi Kraus, Councillor for Economic Activities Municipality of Trieste & Director General, Julon Ljubljana d.d. & Board of Directors Member, Aquafil S.p.A. Trieste, Italy

The Global Forum/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/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.

2013 Driving the Digital Future – Trieste, Italy

2012 Shaping a Connected Digital Future – Stockholm, Sweden

2011 Vision for the Digital Future – Brussels, Belgium

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 22nd edition of Global Forum took place on Monday, 28th and Tuesday 29th, October, 2013, in Trieste, Italy.

The Global Forum 2013 attracted high-level delegates from the world of politics, the business community, and academia for a two-day 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:

Driving the Digital Future –
Strategies to Grow Stronger Communities & Businesses

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 2013 are listed in chronological order corresponding to their sequence in the final conference programme, as listed in the beginning of the present document.

Opening Session Day 1

SÉBASTIEN LÉVY, Vice President Global Forum / Shaping the Future & Partner Items International; Administrator Silicon Sentier, France, welcomed everyone to the Global Forum 2013 in Trieste.

The first Global Forum took place almost a quarter-century ago in New York. Over the years, the meeting has grown in size and stature and this year's Global Forum continues its tradition of being a premier Think Tank for presenting and discussing leading edge technological development and innovative solutions. In fact, we have witnessed many internationally recognized projects, practices and technical achievements over the last years, and without doubt this year will be no exception.

The theme of the conference "Driving the Digital Future – Strategies to Grow Stronger Communities & Businesses" seems a most appropriate theme in today's global environment. The global economic crisis has brought about challenging times for businesses and communities alike. At the same time, the rapid progress in the development of a range of technologies is increasingly contributing to promote our knowledge and to prompt new questions.

Within the coming two days, there will be a great number of excellent presentations and experts from all around the world who will exchange their view in a wide range of topics in this vast field.

In this respect, Trieste seems to be an ideal meeting place, as it represents a true cultural and commercial crossroads and a major science and technology network.

Finally, the Global Forum is considered as the meeting point for 'old' and 'new' friends to meet each other and to discuss in an exclusive frame. The participants will certainly renew international friendships and professional contacts and make new ones during the coming two days.

Sylviane Toporkoff, President, Global Forum / Shaping the Future, Founder & Partner Items International, briefly introduced the speakers.

The last Global Forum took place in Stockholm. A warm thank you was addressed to Stockholm for having organized a great Forum last year.

Why Trieste this year? Because Trieste is at the heart of the enlarged Europe. Trieste is also a city of science, with a large number of research bodies, centres of excellence, technological transfer organizations, universities, and high tech companies who cooperate at a regional, national but also international level. It is the right city to think the digital future.

This year's Global Forum is attended by representatives coming from 34 nationalities from all across the world. During the coming two days, there is lots of space for great brainstorming and plenty of opportunities to network and to build new projects. Each year, the Forum gives birth to a number of new projects.

The Global Forum would not be possible without the combined support of its partners and sponsors.
A great thanks to our partners:

- the Stock–Weinberg Foundation which offer a concert prior to the dinner at the Teatro Verdi, and particularly to the president Signora Liliana Weinberg for her constant support.
- Dr. Mario Po', Executive Director, Azienda ULSS Venezia for his great help since the start of the organization

We extended our thanks to the local and regional authorities, and in particular

- the City of Trieste, his mayor Roberto Cosolini and Edi Kraus, Councillor for Economic Activities who offer the gala dinner,and a special Guided Visit to the Kounelis exhibition Salone degli Incanti
- the Regione Autonoma Friuli Venezia Giulia, especially to Paolo Panontin, Regional Deputy to the Public Administration Regione for the welcome cocktail on the eve of the conference hosted by Francesca Garufi Commissario del Governo e Prefetto di Trieste at the beautiful palace of the Prefettura .

Thank you also to all the sponsors

GPI Group, AT&T, SBL, Cassidian, Verizon, Telit, InfoCert, Dedalus, Insiel Mercato, TBS, Alcatel-Lucent, CBT, GE Healthcare, PayPal, Qualcomm, solinfo, ETSI, the University of Trieste, DPI, NoemaLife and Mcube.

As well as the supporting sponsors,:

Insiel, Friuli–Venezia Giulia, Siram, Confindustria Trieste, Truyoins, Medic4all, Consorzio PromoTrieste, GSMA, Bingham McCutchen, Samman Law Firm and Women in Leadership (WIL), PTI, Forum PA and MEDICI.

Thank you so much for the great work we have achieved together!!!

ROBERTO COSOLINI, Mayor of the Municipality of Trieste, Italy, warmly welcomed the participants on behalf of the City of Trieste and thanked the organizers for having chosen Trieste for this edition of the Global Forum.

Trieste is particularly well suited for this event, being the most European among the Italian cities – situated at the frontier with Austria and Slovenia, home to different communities and with a natural vocation to hospitality.

The Global Forum is a very special event for Trieste after all the sufferance caused by geographical and ideological borders. Today, Trieste is at the heart of the new Europe. A reference point for the circulation of ideas, different cultures and people. The Global Forum in Trieste may also benefit from the many research organizations and institutions which are active in all fields of science and technology.

Mayor Cosolini expressed his hope that the attendees will enjoy the city, its architectural style, the museums, the historical buildings and its multicultural soul and whished a fruitful Forum.

IGOR DOLENC, Vice President Provincia di Trieste, Italy, welcomed the participants and asked to apologize the President of the Province of Trieste, Mrs Bassa Poropat, who could not be present due to prior commitments.

Mrs. President, distinguished Guests, Ladies and Gentlemen, first off all I would like to welcome you all in Trieste to the Global Forum 2013. I'm the Vice-President of the Province of Trieste and let mi excuse the lady President, Mrs. Bassa Poropat, who cannot be present due to prior commitments.

The Province of Trieste is the smallest of four provinces of the region Friuli Venezia Giulia, a region with a Special Statute of Autonomy which confers legislative powers in important areas of the governance. The Province has an area of 212 square kilometers and a population of more than 200.000 inhabitants.

The economy of the Province of Trieste basically depends on the port and on trade with our neighboring regions. Trieste is also home to some important Italian companies, such as Assicurazioni Generali and Fincantieri, two of the world's leading assurance and shipbuilding companies.

The choice of Trieste to discuss the theme "Driving the Digital Future: Strategies to Grow Stronger Communities & Business" is, from my point of view, significant also because there is a particularly fertile ground in that, the province of Trieste, is also home of science and research with the International Centre for Theoretical Physics, the Area Science Park, the International School for Advanced Studies and the Multidisciplinary Synchrotron Light Laboratory, open to researches in diverse basic and applied fields.

Finally I am particularly grateful for having chosen Trieste as the seat of the Global Forum 2013 because the presence of such a prestigious audience of representatives, executives from international companies, experts, policy-makers from everywhere, is a unique opportunity to promote our being a plural territory from time, a place of natural encounter between people with different nationalities, cultures and religions.
I believe that this forum will serve as a platform for an extensive exchange of ideas among participants, which will promote further actions not only to grow to business

environment but, above all - and I agree with the theme of today's forum, to grow stronger Communities, finding new issues to overcome the ongoing financial crisis.

I wish you a pleasant stay in Trieste and may this forum have the success it deserves.

PAOLO PANONTIN, Regional Deputy to the Public Administration Regione Autonoma Friuli Venezia Giulia, Italy opened this Global Forum and to welcomed the participants to the Region of Friuli Venezia Giulia.

The title of this morning's first session "Shaping our Digital Future" sums up some of the major issues that confront us today: the idea of being able to govern technology as it changes and evolves, the transition to a digital 'culture', the way we imagine the future. And this applies especially to public administration, in which I'm involved every day.

In this Region we are working really hard to reduce the digital divide and to carry forward our "digital agenda", because we truly believe that no reform – and we are introducing several - can be effective without a considerable investment in new technologies and consequent removal of red tape.

We recently named this project 'Go on FVG'. As the president of my Region, Debora Serracchiani, remarked a few days ago at the second Annual Italian Digital Agenda Forum promoted by Confindustria Digitale, our regional strategy is perfectly aligned with the national "Go on Italy" project, which we joined with enthusiasm.

That's why the development of the Region's digital economy lies at the very core of the reforms. We're aiming for a "digital review" that can also provide a substantial reduction in costs.

Of course, the Digital Agenda has to take place in the context of a participatory process that fully involves the whole territory. In this way, the many "local authorities" can be turned de facto into a single "public administration", so that, for instance, their digital databases and computer systems, which at present seem to be independent islands, can at last be truly interconnected.

Specifically, we're planning to set up a single local government data processing centre, provided and run along 'cloud computing' lines… But this is not the time to go into detail... My real intention was to extend a warm welcome to everyone present and to wish you well in your work! Thanks!

MAURIZIO FERMEGLI, Rector University of Trieste, Italy, welcomed the attendees on behalf of the University of Trieste.

The region of Trieste is characterized by a very high density of researchers. There are about 30 researchers over 1000 active citizen. This very high density of research is comparable to very few places in the world, such as Silicon Valley, a the triangle of research in North Carolina in the US, and a region in the Netherlands. This is particularly interesting and the reason why this has happened is partly due to the location and the fact that the University of Trieste is located here. Actually, the University of Trieste is considered among the Top 10 universities in Italy. The University if Trieste is a research university combining very high quality research with high education.

The University of Trieste is very active in eHealth, in eSecurity, in nanotechnology as well as in eMateriel design. All these topics will be very important in the next 20 years for the development of Europe and for the development of the world.

The importance of the geopolitical location of the University of Trieste being really in the centre of Europe has already been mentioned.

Next year will be the bimillenium of the death of the emperor Augustus. And just like the emperor Augustus paved the roman road to connect this region to the Danube, going through Ljubljana and finally ending in Vienna, 2000 years ago, we should today start repaving this road with high technology for the development of Europe.

AMB. MARGIT WAESTFELT, CEI Alternate Secretary General, Italy, welcomed the participants of the Global Forum 2013.

Distinguished participants, Ladies and Gentlemen.

Allow me first on behalf of the Central European Initiative to thank the Global Forum/ Shaping the Future and its organisers, in particular Items International, for gathering in Trieste top-rank participants from all over the world and from a wide array of institutions.

Furthermore, I am glad to share this table with high-level representatives of the local authorities, including the Regional government: this shows that a common understanding exists on the necessity to encourage innovation through an open debate involving various stakeholders from both the public and the private sectors.

The Central European Initiative, whose Headquarters are based in Trieste since 1996, is the oldest regional forum for intergovernmental cooperation in Europe. Its membership comprises 18 participating countries of Central, Eastern and South-Eastern Europe, out of which eight are not, or not yet, members of the European Union. Therefore, our institutional mandate is to bridge between EU and non-EU countries, thus promoting Regional Cooperation for European Integration to fight geographical disparities and enhance territorial cohesion. We try to reach this ambitious goal through our specific working methodology, a combination of multilateral diplomacy and project management.

The main theme of this Global Forum, “Driving the Digital Future – Strategies to grow Stronger Communities and Business” is particularly appealing for our Member States. Indeed, any risk of digital divide shall be duly counteracted in order to avoid the emergence of two groups of countries, one innovative-oriented and one lagging-behind. This is a challenge not only for the CEI, which already promotes specific actions for knowledge transfer and capacity building, but also for policy makers and entrepreneurs, as well as for the academic world.

Effective cooperation within the “knowledge triangle” business-government-academia is the key to innovation. This is widely highlighted in the forthcoming CEI Plan of Action, which will cover the next tri-annual period 2014 – 2016 and align with the scope and objectives of the EU2020 Strategy. The CEI Plan of Action will pay particular attention to innovation-related issues and will support activities in line with the EU Digital Agenda, by favouring the accessibility to ICT solutions and e-applications in different sectors. To reach this goal, the CEI will mobilise its networks in order to multiply opportunities and facilitate synergies in its targeted region.

In this regard, I am most grateful to the organizers that agreed to host, in the context of the Global Forum, the annual CEI Ministerial Meeting on Science & Technology: this meeting will be held tomorrow morning, thus allowing ministers, deputy ministers and high officials to take part in the afternoon sessions of the Global Forum.

AMBASSADOR MIRIAM SAPIRO, Deputy United States Trade Representative, started out with thanking the organizers, the City of Trieste, and the regional government.

The US, through its trade policies, is doing its part to drive the digital economy and the digital future and to support greater economic growth, both in the US and around the world and to create more jobs.

The Obama administration has made it a top priority to improve the movement of goods, services and capital across borders by dismantling trade and investment barriers around the world.

The US is undertaking these liberalisation efforts on a multilateral basis through its work at the World Trade Organization, WTO, plurilaterally through the work with APAC and other regional organizations, and bilaterally, through its trade agreements and partnerships with countries around the world.

Four of the many initiatives that the US is currently working on that have special bearing on the digital future, include the expansion of the Information Technology Agreement, known as ITA, a broad new global services agreement, and negotiations towards trade investment partnerships with the Pacific and with Europe. The high costs of trade and investment barriers, whether it is markets that lack transparency or independent regulators, whether it is limits on foreign investments, whether it is unfair competition or local content requirements – these barriers hinder the best goods and services from reaching the consumers that want them. And thy prevent the spread of technology, they limit innovation and they diminish economic growth.

Each of the four initiatives aims to address these obstacles. The first way that the US trade policies have forced technological innovation is by ensuring that innovators worldwide have access to the latest technological developments at competitive prices. That is why at the WTO the US is hard at work and is expanding significantly the ITA to reduce and to eliminate tariffs on telecommunications and technology goods. The original agreement has facilitated and accelerated the growth of the digital economy by removing tariff barriers from a range of core information technology goods. In the last 15 years, since the ITA entered into force, global trade in ICT products has more than tripled from 1.2 billion dollars to over 4 billion today. This overwhelming growth has helped transform the way we communicate and do business, but the list of products covered under the ITA has not been updated since the agreement entered into force in 1997. 16 years in the digital area is like 116 in the industrial age. You can see how much in the ICT and telecom sectors the agreement has not currently covered, such as bluetooth and GPS.

Some estimates say that the global GDP gains from an expanded ITA agreement could be as high as a 190 billion dollars. So the time to get this done is now and the US is working hard to do that.

However, the US not just focused on hardware in the digital future. The advent of the Internet

and the digital economy and the ability to now to provide a service to virtually anybody, anytime, anywhere has speared unparallel economic games. But it has also led to new questions and challenges around the provision of such cross border services. The US launched negotiations earlier this year on a Trade in Services Agreement, known as TISA, in part to address some of these noble issues. The negotiations now underway in Geneva have grown to include 23 parties, that, because of the EU represents 49 economies and two thirds of global services trade. The goal with TISA is to overcome the patchwork of laws and regulations that prevent greater trade in all kinds of services, but particularly in digital services.

As just one example: In TISA, the US is pursuing the adoption of policies to facilitate the use of eCommerce, including through commitments not to impose custom duties on digital products and not to unjustifiable discriminate among products that are delivered electronically.

Economic growth can accelerate when companies are not required to be physically present in a country in order to provide a service there, when consumers have a choice of Internet Service Providers, when individuals can access online content irrespective of where that content was created. That is the goal.

In addition to the ITA and to the TISA negotiations, the US is injecting new disciplines for trade in digital goods and services into the global trading system through its trade negotiations with its pacific and its European partners. It is in the endgame of negotiations on a 12 party Trans-Pacific Partnership, known as TPP. The US aimed to finalise that agreement by the end of the year. Many of TPP's key 21st century provisions relay to the digital economy. The agreement was set out trade rules that ensure electronic commerce can be conducted free of discrimination in content and applications, free of restrictions on data flows and free of onerous investment requirements.

Simultaneously, the US is pursuing a Transatlantic Trade and Investment Partnership with the EU, known as TTIP. This will further strengthen what is already the largest trade and investment relationship in the world. Together, the EU and the US are working to improve market access by eliminating all tariffs on trade and growing the world's largest investment relationship. A relationship that currently supports over 13 million jobs on both sides of the Atlantic.

The partners are going to significantly reduce costs of differences in regulations and standards by promoting greater compatibility, transparency and cooperation but maintaining their high level of health, safety and environmental protection. Finally, in that negotiation we are seeking to tackle a number of emerging challenges for global trade, such as state-owed enterprises and localisation requirements and work together more closely to coordinate our approaches to trade issues of common interest in third country markets

To conclude, we are still near the dawn of the digital age, but by establishing strong, clear, open rules and guidelines now, we are moving goods and services more innovatively and more efficiently and more rapidly around the world, we will be able to harness the full potential of the Internet and our economies and our people for decades to come.

--- ✦✦✦ ---

Shaping our Digital Future

The **moderator**, **ANNA GOMEZ, Partner Wiley Rein LLP**, USA, welcomed the participants to this keynote opening session and briefly set the scene for the following presentations.

The last couple of decades has seen a lot of change. We have seen many amazing things happen and we will see many more in our digital future. We went from having just wired telephones and writing on paper to mobile phones and PC, from dialup connections to Internet high speed connections and advanced broadband wireless, and we are now seeing the third wave of mobile networks delivering connectivity to a broad range of devices and access to the cloud.

But with so much connectivity also comes challenges. How do we ensure universal connectivity. There is much talk about Net Neutrality, but is that really a concern? How do we allocate spectrum to meet the consumers thirst for more bandwidth? How do we address interconnection and roaming? With the rise of cloud computing, how do we address consumer privacy and security concerns? How do we promote digital human rights and democracy? How do we govern the Internet? And so on and so forth!

During this session a very distinguished panel will provide some interesting perspectives on these and other issues in their respective areas.

The session's **chair, ROBERTO VIOLA, Deputy Director General DG CONNECT, European Commission**, welcomed the participants and thanked the organizers by stressing that the EC supported and will continue to support the Global Forum. Its is a unique occasion to discuss some of the key issues of the changing European and world economy, the changing way of how the future is going to be shaped by digital technologies.

Last week the European Council meeting took place and the heads of state and government of Europe met and discussed the future of Europe in terms of what to do for fostering growth and job creation using the digital revolution. It is the first time since the creation of the European Council, that heads of state and government meet to discuss the digital future of Europe.

It was a very important and significant event and it is worth reading the conclusions of this meeting. The European Summit conclusions of the digital economy are available on the website of the EC and the European Council.

The European heads of state and government decided that the digital revolution is central for fostering growth and jobs, not only in Europe but throughout the world. They decided that there are areas in which to work as a priority.

The first one is basic connectivity, to guarantee that every European (500 million citizens) will

be connected to broadband -- wherever they are located and without restrictions of any sort. That is why they support the Connected Continent Regulation, that the EC has presented to the European Parliament and Council in September. This initiative is about connecting every European to the broadband. It is basically to make sure that every European company can offer broadband services wherever that company is located to every European citizen. And that every European citizen can actually buy online services, wherever they are located.

It is about securing spectrum for broadband in a coordinated and timely fashion to make sure that wireless is available everywhere and every European café has a WiFi connection open for citizens and that every garage has a broadband connection for garage companies to grow.

It is about having common consumer rules for citizens throughout Europe to make sure that they feel confident in purchasing connectivity and using broadband. It is about net neutrality. It is the largest legislative initiative in the world. It is a legislation that will apply to 500 million citizen. It is primer legislation and will have to go through a democratic process. And it is about the primacy role of the Internet for making sure that Internet in Europe can not be blocked, can not be throttled, that services can be offered, and that whatever traffic management techniques are applied by service providers, those management techniques are non discriminatory.

The heads of state and government have also discussed how to make sure that Europe can make the best out of open data and big date and that research effort in Europe is in priority given to the idea that through data many things can change for good in Europe, e.g. in the health sector, in the public service sector and in transforming the traditional industrial sector.

The heads of state and government have also discussed eCommerce, giving a major push to the Commission's initiative making sure that eIdentification, eSignature and authentication websites in Europe can work in an interoperable way and making sure that all systems will be mutually recognized by the Member States. Again making Europe the largest eCommerce area of the world,

The heads of state and government have also discussed the Commission's initiative for cyber security. The EC has proposed a directive to make sure that European governments cooperate in the area of cyber security and companies have a standard way of dealing with cyber incidents in terms of reporting. Again, the idea is to make sure that citizens have trust in e-systems and they can use with full confidence online banking and other services, which there to deliver more efficiency to the economy.

In a nutshell, what was decided last week is about the future of all of us in Europe and the way Europe will contribute to the growth of the world economy.

The European Commission is looking forward to work with the US and to promote cooperation on the two sides of the Atlantic. Freedom of Internet and open ways of addressing problems will scientifically contribute to democracy and peace all over the world.

COMMISSIONER MAUREEN K. OHLHAUSEN, Federal Trade Commission-FTC, USA, delivered an excellent presentation on the potential and challenges related to the Internet of Things.

Internet itself has been an important driver of commerce and communication. The paradigmatic consumer Internet experience began with a person sitting at a desktop computer typing in a website address in a browser. This then moved to smart phones allowing people to access the Internet on the go – again, using a browser or very frequently through Apps. The next phase of Internet development is focusing on connecting devices and other objects to the Internet, without the active role of a live person, so that they can collect and communicate information on their own and, in many instances, take action based on the information they send and receive. This is often called the Internet of Things.

For some reason, the most cited example of the potential benefit of the Internet of Things is that your refrigerator will note that you have run out of milk and it will email or text you to remind you to buy milk. Much more exciting examples are the car that will automatically direct you to a route without a traffic jam or that a wearable health device will detect an impending medical crisis and alert you and your doctor.

What, exactly, is the Internet of Things? It means sensors and other types of telemetry embedded in physical objects, from cars to appliances to medical devices, that are linked through wired and wireless networks using the same Internet protocol that connects the Internet generally. These objects can record and measure the environment around them, from the apparently dreaded milk-less refrigerator to the irregularly beating heart, send that information to remote computers for recording and analysis, and, sometimes, take action in response to what they detect, such as suggesting a stop at the grocery store or delivering a lifesaving intervention. These capabilities have the potential to revolutionize many fields, including manufacturing and logistics, medicine, transportation, and energy, just to name a few. They will clearly offer great benefits to consumers in their day-to-day lives.

Just to illustrate some of the potential benefits for healthcare: In 2010, an estimated 150 million patients in the US were chronically ill with diseases such as diabetes, congestive heart failure and hypertension. And they accounted for more than eighty percent of the healthcare system costs that year. Remote patient monitoring systems can be highly useful for treating such patients. These systems include devices that monitor heart conditions or blood sugar levels and transmit feedback from care givers and they can even include a chip-in-a-pill technology that feeds data in real near time to electronic medical record data bases.

Now alerting a physician that a congestive heart failure patient is gaining weight because of water retention can prevent an emergency hospitalisation. And more generally, the use of data from remote monitoring systems can reduce patients in-hospital stays, cut emergency room visits, improve nursing home care and physician visits and reduce long-term health complications.

The transformative potential of the Internet of Things is inspiring, but one has to be also sensitive to the fact the ability to collect large amounts of information, and in some cases to act on these information, also raises important consumer data privacy and security issues.

The FTC is holding a workshop on the Internet of Things on November 19 to get a better understanding of how to achieve its benefits while reducing risks to consumers' privacy.

The workshop will examine a variety of issues, such as: What are the unique data privacy and security concerns associated with smart technology and its data? What steps can

companies take to prevent smart devices from becoming targets of or vectors for malware or adware? How should we weigh privacy risks against potential societal benefits, such as the ability to generate better data to improve health-care decision making or to promote energy efficiency? Can and should de-identified data from smart devices be used, and if so, under what circumstances?

The Internet of Things is another chapter in the FTC's focus on consumer privacy and data security issues. It is a particularly interesting chapter, however, because it also draws together several hot issues in this space, such as data security, mobile privacy and big data.

On a more philosophical level, it also raises the question of what is the best approach for a government agency like the FTC to take with regard to technological and business innovation. The success of the Internet has in large part been driven by the freedom to experiment with different business models, the best of which have survived and thrived, even in the face of initial unfamiliarity and unease about the impact on consumers and competitors. It is thus vital that government officials approach new technologies with a dose of regulatory humility, by working hard to educate themselves and others about the innovation, understand its effects on consumers and the marketplace, identify benefits and possible harms, and, if harms do arise, consider whether existing laws and regulations are sufficient to address them, before assuming that new rules are required.

The specific issues data security, mobile privacy, and big data, that have significant relevance to the development of the Internet of Things and shaping our digital future.

Data Security:
The FTC, as part of its broad focus on consumer privacy, has an active data security program. The importance of this program will only continue to grow with the Internet of Things, which will sometimes involve the transmission of sensitive data such as a consumer's health status or private activities within the home. A recent FTC case exemplifies the kinds of data security risks that the Internet of Things may present. Last month, the FTC settled a case against TRENDnet, which sold its Internet-connected SecurView cameras for purposes ranging from home security to baby monitoring. Although the company claimed that the cameras were secure, they actually had faulty software that allowed unfettered online viewing by anyone with a camera's Internet address. As a result, hackers posted live feeds of nearly 700 consumer cameras on the Internet, showing activities such as babies asleep in their cribs and children playing in their homes.

The FTC's complaint alleged that TRENDnet failed to use reasonable security to design and test its software, including the setting for the cameras' password requirement. FTC's settlement prohibits TRENDnet from misrepresenting the security of its cameras or the security, privacy, confidentiality, or integrity of the information that its cameras or other devices transmit. The company must also notify customers about the cameras' security flaws and tell them how to correct them. Finally, the company is required to establish a comprehensive information security program.

The type of consumer harm we saw in the TRENDnet case—surveillance in the home by unauthorized viewers—feeds concerns about the Internet of Things overall. It is thus crucial that companies offering these technologies take the necessary steps to safeguard the privacy of users to avoid giving the technology a bad name while it is still in its infancy.

Mobile:
Mobile has also been a highly disruptive technology that has brought great benefits to consumers and opportunities to businesses. And Mobile devices play an important role in the Internet of Things as they collect, analyse, and share information about users' actions and their environments, from their current location, travel patterns, and speeds to their surrounding noise levels. This raises questions of how businesses should relay on the small phone screen information about what data, sometimes of a sensitive nature, that these devices and apps collect, use, and share.

The Commission is devoting significant resources to addressing the mobile phenomenon. In addition to setting up a dedicated Mobile Technology Unit of tech-savvy folks, the FTC has held workshops and issued reports on a variety of issues including Mobile Privacy Disclosures, Mobile Cramming, and Mobile Apps for Kids. Last June, the FTC hosted a public forum entitled 'Mobile Security: Potential Threats and Solutions', which brought together researchers, technologists, and industry participants from across the mobile ecosystem.

The Commission has also been very active on the enforcement front in the mobile space. One case that has implications for the Internet of Things involved an App that collected information from consumers' address books on their mobile phones without the consumers' knowledge or consent. The FTC settled a complaint against Path, a social networking company, for this activity, as well as for alleged violations of the Children's Online Privacy Protection Act. As this case suggests, the collection of personal information from a consumer's mobile phone without the disclosure or permission may be a deceptive or unfair practice under the FTC Act. This has obvious implications for other Internet-connected devices that collect personal information about users, and prudence suggests that such technologies should include some way to notify users and obtain their permission.

Big Data:
According to some reports, ninety percent of the world's data has been generated over just the past two years. The amount of data collected in the world will only continue to increase with the volume and detail of information collected by new technologies, including the Internet of Things.

In June 2011, McKinsey Global Institute issued a report entitled 'Big data: The next frontier for innovation, competition, and productivity'. And according to that report, there is strong evidence that big data can play a significant economic role to the benefit not only of private commerce, but also of national economies and of citizens. The report estimates the potential value to the US healthcare system to more than 300 billion dollars per year. And the developed economies of Europe can save more than 100 billion Euros per year in operational efficiencies by government and administration.

Although the ability to collect and analyse large data sets offers benefits in medical, scientific, economic, and other types of knowledge and research, as well as for business innovation, at the same time, the collection of large amounts of data about individual consumers may also raise privacy concerns. In response to these kinds of concerns, the FTC recently began a formal study of the data broker industry. We sent out formal requests for information to nine large data brokers to learn more about their practices, including how they use, share, and secure consumer data. It is vital to have a good understanding of how data brokers operate because appropriate use of data can greatly benefit consumers through better services and convenience while inappropriate use or insecure maintenance of data could cause significant

harm to consumers. The FTC will carefully analyse the submissions from the companies and use the information to decide how to proceed in this area.

The Internet has evolved in one generation from a network of electronically interlinked research facilities in the United States to one of the most dynamic forces in the global economy, in the process reshaping entire industries and even changing the way we interact on a personal level.

The FTC's approach of doing policy R&D to get a good understanding of the technology, educating consumers and businesses about how to maximize its benefits and reduce its risks, and using its traditional enforcement tools to challenge any harms that do arise seems to be a good approach.

LASZLO HORVATH, President Active Media, USA, [http://www.activemedia.com] delivered an inspiring presentation on

Can you afford not to be found?
Is the Internet Everywhere? Search Engines

The Internet is everywhere. You can reach in a direct intimate fashion anybody and everybody who is interested in your products. So a small and midsize business can enter 20, 30, 40 new markets and grow exponentially as a result of these digital techniques.

A website on the bottom of search results (a website that is not in the Top 30, 20 or 10) doesn't exist. It is just a brochure instead of paper, it resides on screens.

Customers have changed. The dramatic consequences of our online world are that if you are not in that fast search box, you are disappearing. The consequence of this dramatic changes is that the website is essentially just a secondary tool. The primary tool, where the value is created, is the search engines results pages, because that is where the magic handshake happens to with the customers.

Active Media brings its clients in a direct touch in the search engines results pages.

Why are the search engines so important? Because we live in this sensory overload. We have too much information, but when we search for something, this is something that we want to buy, we are really interested in, we want to convert ourselves into buyers. Active Media uses a lot of profiling and its team is always on providing a global footprint in 84 different languages for their clients. Why is it working? Because when you know what a potential customer searches for, you sometimes know their needs better than they consciously know themselves. "You are what you are search for".

It took AOL 15 years to reach 277 million users. It took Google 10 years to reach 350 million users, Facebook 5 years to reach 500 million users, Twitter 3 years to reach 500 million users and they have 190 million user per month right now. The pace is accelerating. There are lots of opportunities to use these platforms. The big equalizers, the opportunity is there for businesses, who really embrace their new model, which is every business in the world has to be in the digital marketing business if they don't want to be left behind.

People check their smartphones 150 times per day. There is no other thing that we do as

many times and 44 percent of cell phone owners, sleep with their cell phone next to their bed.

Today, the world is all one big connected market opportunity. Asia is where the action is, there is tremendous growth in digital marketing in that part of the world. There are more people than in the rest of the world combined.

With regards to the world's busiest air routes in 2012, action is in Asia, a little bit in Australia and Africa.

McDonalds used to be the standard barometer of development and consumerism. Google has a much bigger territory than McDonalds, essentially in processes about 95 percent of information gathering with the exception of regions in China and Russia. This means that if you optimise for Google, you can capture the biggest market.

THERESA SWINEHART, Senior Advisor to the President on Global Strategy, ICANN – Internet Corporation for Assigned Names and Numbers, addressed the question why it is so important to bring more Internet users from remote regions into the discussions about shaping the digital future, and how to actually enable them to be participating in the shaping this digital future which they are impacted by so strongly.

The presentation touches upon two areas: one is about making room for new participants and stakeholders and their leadership in these areas to address issues that are of concern for them. The second is, how to ensure that organisations that have responsibilities in the Internet policy space by themselves evolving and addressing within their missions and mandates the areas that are relevant for the users. And how are they themselves working together to strengthen multi-stakeholder Internet cooperation in order to have a long-term sustainable platform to address emerging policy issues.

First, making room for new players. Although English is still the primary language of the Internet, the languages of the emerging countries are the fastest growing online. More than 70 percent of the Internet users do not speak English as the first language. From 2000 to 2011, while the English-speaking Internet user base was growing by 301 percent, the Arabic speaking Internet user base was growing by 2 500 percent and the Chinese-speaking users by 1 400 percent. And that is just two languages groups!

It is not just about multilingual content, which is an incredibly important area for the next generation of users and youth in all these regions. From ICANN's perspective it is also been the contribution of internationalised domain names, which are a key building block in making the Internet more global and making the Interface more global to the users. But so are the efforts of all, to make our processes open and transparent as well as multilingual. The translation of materials is a concrete way to bring emerging countries onto the Internet.

There is also the idea about creating space in our existing processes and structures for the new leaders and the new initiatives and the new issues that really need to be addressed from different perspectives. The idea to create Internet government structures that will last and built organisations on shared values. But we also have to build them to be adaptable to change and capable of growth, to address the issues that we are seeing emerging from different parts of the world. We also have to be willing to allow that change in growth in the front door. In the environmental area, it is always been said that we are the care takers of the earth for the next generation. The same could be said about the Internet. We have

the responsibility to make sure that the voice of all stakeholders is part of the discussion of its governments and where it goes in the future.

So, we really need to move from leading to including mentoring. At some point, we need to be ready to evolve from holding direct leadership positions to becoming mentors to the next generation.

In some extend, there is the responsibility of organisations to ease input and not to create artificial barriers through complex processes and perceptions. And the perception that views may be without value until the history is fully understood. And this is especially important for regions that are becoming engaged. ICANN's is working hard to change some of those aspects and how to address this. That includes engaging in many of the different regions of the world and implementing strategies that involve training, policy engagement, partnerships, incubation, entrepreneurship. But not doing that solely, but doing this in partnership with many other organisations, including the African Telecommunications Union, the ITU, the Internet Society, and many of the technical standards related organisations.

As regards the second point about evolving organizations, ICANN itself is a living organization. Its relationship with the US administration and its strategic planning process try to ensure that it is evolving in order to address what is within its mission and mandate for the next generation. IP addressing and the Unique Identifier system will be relevant also for mobile devices moving forward.

An additional way that ICANN has looked at trying to improve the organization is by implementing something referred to as strategy panels. The ICANN Strategy Panels will convene subject matter experts, thought leaders and industry practitioners to support development of ICANN's strategic and operational plans and to inform what are emerging issues.

The Strategy Panel on Identifier Technology Innovation will look on where is the DNS space going for the future and what do we need to be considering within the organisation's mission and mandate.

The Multi-stakeholder Innovation Panel, that is how to better engage with players in the processes that exist for the organization for the emerging regions.

The Strategy Panel on the Public Responsibility Framework will look on the context of public responsibility, in particular in the relation to emerging regions and capacity.

The fourth panel is Strategy Panel on ICANN's Role in the Internet Organizations' Ecosystem. That is, what is the organization's responsibilities and what frameworks can dictate these responsibilities in the future of Internet governance.

ICANN is trying to get a completely fresh look in order to ensure that all can participate in what lies in the future.

With regard to Internet governance and ICANN's role, ICANN's mission and mandate is very limited to the Internet's Unique Identifier system, IP addressing, domain names, and protocol parameters. ICANN is s multi-stakeholder organization that evolves in partners with others in the Internet ecosystem to ensure the continued multi-stakeholder approach to Internet governance.

It is one institution of many that is addressing a range of issues. ICANN has been a strong supporter of, e.g., the Internet Governance Forum and other important partnerships. It also participated on the recent IGF, which was held in Bali. In Bali, multiple very constrictive discussions took place. It had a high range of participants from around the world. Discussions included multi-stakeholder principles, and what does this actually mean, what are the thresholds of engagement, security, the rights on the Internet, including human rights on the Internet and what are Internet government principles building on discussions in other forums.

In the context of efforts to further strengthen Internet cooperation, the Internet community organizations, including the Internet Society and the technical standards organizations, issued a statement in Montevideo which really discussed how Internet related organizations, together with business and civil society, can strengthen Internet cooperation for the future. Numerous discussions took place in this multi-stakeholder forum, and an initiative around the stakeholders of the future dialogues is expected to be announced this week.

An upcoming meeting will be hosted by Brazil in early May next year. The purpose of which is to contribute to discussions on how to strengthen Internet cooperation, how to create a long-term sustainable approach. Discussions at this event would include high level principles and possible ways to look at strengthening cooperation for the future.

It is important to note that ICANNs support and its involvement in these Internet government initiatives are not efforts to broaden its initial mandate – in fact, it is quite the opposite. It is critical that the organization is a partner in Internet governance's fear to ensure cooperation is addressed for users and all the stakeholders' needs. But we need to work together to ensure that the burdens and interests are not added to ICANN's mission and responsibilities or its scope, but rather that the organizations work together to strengthen Internet cooperation globally and allow the institutions to evolve that have jurisdiction over different areas.

In conclusion, the Internet and its users are evolving, connectivity is improving and a recent McKinsey Global Institute report on disrupted technologies noted that in 1975, the computer which cost 5 million dollars had the equal performance to an iPhone 4 today - at a much lesser costs. If we think of the power of that medium and the issues that will come up in the context of the use of that medium, we need to be prepared for the future. If you look at the economic potential for 2025, it is vast. There will be 2 to 3 billion more people with access to the Internet - with all these devices. And there will be the disruptive technologies, whether it is the mobile Internet, the Internet of Things, but also the 3D printing, renewable energy and energy storage. The reality is that there are new players and new interests and new models and we need to be prepared for that. We need approaches that evolve with this emerging environment. We need to have it a at a technical, at a political at a policy and at the operational level amongst the organizations and institutions that have responsibilities. And we need to look at how to strengthen the network of networks of organizations and how they can work together to address emerging issues. They put the solution mechanisms on a map in awareness to everybody who has an interest in that. The international community of Internet stakeholders must start by physically and mentally making room at the table for new players, new thoughts and new emerging approaches building on existing mechanisms to maintain the multi-stakeholder environment.

We have to create lasting approaches based on shared values, adaptable to change and capable of growth for the next generations of the future.

WILLIE LU, Chairman and Co-founder Palo Alto Research Group; Chief Inventor and "Father", Mobile Cloud platform for Mobile Devices, USA, talked about the next big technological moment in mobile communication:

User-Centric Mobile Cloud Device – Global Evolution from Mobile Era to Personal Era

The world is changing. Steve Jobs was the first one coming from the computer industry to challenge the telecom industry. Who is going to win? Nobody knows – but the world is converging. The mobile device is no longer just a mobile device – together with the Internet it is a part of our life.

The mobile communication has been developed for 60 years. Right now, we are underway to change something. This transition from mobile communication to personal communication will be the next 600 billion dollar business by 2020.

What is the difference between mobile communication and personal communication? The key issue is user centric versus carrier centric.

Today, our mobile phones are not user phones, but carrier phones. Today, mobile communication is carrier centric. But in the future, mobile communication will be personal centric, with mobile phones being personal devices. This means that a user can pick up any carrier he/she wants. This also means, that in the future, Google can run mobile communication. This has momentum for the future, especially in the context of the Internet of Things – with the most important aspect of the Internet of Things' technology not being sensor technology but multi-dimensional wireless connection technology.

In the future, devices can talk to devices and devices can talk to users. In the future, social media operators like Facebook, Google or Twitter can run mobile communication, and they will be able to compete with the big players .

Right now, mobile communication infrastructure is related to a terminal base station model. But this is 60 years old technology and is going to disappear. With WiFi, there will a virtual mobile server which is separate from the provider. The users will no longer sign contracts with the operator. This is a personal/user centric model, rather than carrier centric.

Such technology also supports the international efforts to reduce the gap between the advanced and less advanced countries, between the rich and the poor. Internet provides a very good platform – there are no rich and poor people. It is a low cost, cost effective measure to reduce global gaps.

In the future, Google could run a virtual register, the virtual mobile server, which means that telephone numbers are not assigned by operators but by Google. As the access network is managed behind the Google platform, people with a Google telephone number could use the Google Facebook account to enjoy mobile communication.

In the context of social networks, security issues are of highest importance. We need social networks, but also security. Social networks should be divided in 3 sections with different security levels: general social (rather unsecured), personal social and business social.

We are on the edge of the transition from mobile communication to personal communication. Very soon we can also bring our mobile phones in the sky without turning it off in the airplane. The technology is already there, it is just a regulation issue. There are no technical interferences because the frequencies are different. A pilot signal will automatically switch off the phone when the aircraft leaves and then switches to WiFi in the aircraft.

JØRGEN ABILD ANDERSEN, Chairman of OECD's ICCP Committee; Director General Telecom Danish Business Authority - Ministry of Business and Growth, Denmark, outlined a major achievement the OECD to support an open, mutli-stakeholder and free Internet:

OECD's Internet Policy Making Principles
and their Importance for the Internet Economy

There are two main messages of this presentation: The first message is, Internet is an essential Infrastructure and a core component of our economies. The second message is, ensuring further growth requires commitment to international cooperation multi-stakeholder consultation and openness. Both, ICANN and the EC, are playing important roles in this context.

The OECD is an international organization composed of 34 countries. It helps governments to develop better policies and promotes policies that will improve the economic and social well-being of people around the world. It is a forum, place for dialogue and sharing of experiences and OECD tries to find solutions to problems which are common to all the member countries. By doing so it is very important to allocate efforts to measure, compare, and analyse data at a very high professional level. People have to rely on the analysis carried out by OECD and a lot of efforts are put in particular in this field.

Why are is the OECD so concerned about the Internet? Because the Internet is a driving force of in our economy for productivity, innovation, growth and the creation of new jobs. These are the important focal points which make focussing on the Internet so important.

As Vice-President of the European Commission, Neelie Kroes, stated last year: "ICT is responsible for half of Europe's productivity growth and a quarter of our GDP growth". In the EU, fifty percent of productivity growth and twenty-five percent of GDP growth comes out of ICTs and the Internet.

McKinsey carried out a study as background for a G8 meeting in France a couple of years ago. This study stated that the Internet has generated as much growth over the last 15 years as the industrial revolution did in 50 years. The same study also touched upon jobs and concluded that the Internet is a job creator, not a job destroyer. Every time, one job is made superfluous, 2.6 new jobs are established by the Internet.

Another example is coming from the so-called "App Economy". In the US, the App Economy is a 20 billion dollar industry and it has created almost 500 000 new jobs – jobs, that didn't exist 5 years ago. It is a really important driver of growth, innovation and jobs

In conclusion, the Internet is a key-platform for innovation, productivity, growth and jobs. By fostering the free flow of information, it has increased transparency, it has opened new territories and, as a consequence, lowered entry barriers into markets and created new business opportunities. Its open nature has also facilitated inclusion – everyone can develop applications and services, that in turn can be used anywhere in the world.

The OECD has a long history and expertise in analysing how best to promote the dynamic nature of the Internet, while at the same time protecting security, privacy and Intellectual Property. Against this background the OECD Council adopted Recommendation for Internet Policy Making Principles in December 2011. It contains a set of 14 principles that called for a holistic approach for Internet policy making along the entire Internet economy value chain, from investments in high speed networks and service to the promotion of creativity and innovation on the application layer, while protecting privacy and security.

The policy principles are a sort of compilation of best practices of countries, which have been very successful in developing their Internet economy. There is nothing really new, but it is sort of a best-in-class exercise across the member countries.

The 14 Internet policy making principles are the following:

1. Promote and protect the global free flow of information
2. Promote the open, distributed and interconnected nature of the Internet
3. Promote investment and competition in high speed networks and services
4. Promote and enable the cross-border delivery of services
5. Encourage multi-stakeholder co-operation in policy development processes
6. Foster voluntarily developed codes of conduct;
7. Develop capacities to bring publicly available, reliable data into the policy-making process
8. Ensure transparency, fair process, and accountability
9. Strengthen consistency and effectiveness in privacy protection at a global level
10. Maximise individual empowerment
11. Promote creativity and innovation
12. Limit Internet intermediary liability
13. Encourage co-operation to promote Internet security
14. Give appropriate priority to enforcement efforts

Two cases of what happens, when the first two principles, promotion and protection the global free flow of information and the open, distributed and interconnected nature of the Internet, are not respected.

Both cases are about the openness of the Internet versus taxation. Both cases show, promote if you want more of something - tax if you want less.

When making a Skype call to Ghana, it will cost more than 30 cents per minute terminating the call, whereas in the US, it is 2 cents per minute. This is related to the imposition of different kind of tax measures in Ghana. The example shows that if you put a tax on the Internet connectivity, this will lead to dropped consumption and badly hurts the Internet as an economic driver.

Another example is Congo, where they introduced a similar tax on top of incoming calls and messages. Once this tax was introduced, the number of messages and minutes dropped significantly.

--- ✦✦✦ ---

Q&A

To open the Q&A part of the session, the moderator addressed the following question to the Jørgen Abild Andersen: The Internet policy making principles were a major OECD accomplishment. How do you see the OECD Internet policy making principles fitting the Connected Continent Initiative mentioned earlier?

Jørgen Abild Andersen, OECD, underlined that OECD is very concerned that the Internet policy making principles will be applied also outside the OECD and OECD is promoting these principles where ever possible. It is definitely the right way forward.

A number of countries outside OECD have already signed in these Internet policy making principles. On top of this, it is a clear horizontal policy of the OECD in the context of its outreach activities, not least in relation to China, India, Indonesia, South Africa, and Brazil. OECD has been very focused on entering into dialogue with theses countries in order to make them join the dialogues and sign in the principles.

As the same question was addressed to **Roberto Viola**, European Commission, he answered that at the EC, the OECD principles are taken very seriously and applied in all of its policies. The Connected Continent is an important aspect for some of these principles, not only in Europe. Connected Continent means for the first time that there is legislation about net neutrality -- not only legislation that will be applied to a country but to an entire continent, so that it is probably the most important policy exercise around net neutrality and Internet policy going on in the world. It will be very interesting to observe the political dynamics of it as well as how the European Parliament, the Council will shape the debate and how the citizens will participate to the debate. Internet has been put at the centre of the project, but of course, the EC is very vigilant about the fact that open Internet is a principle that can be effectively applied.

Internet is without any doubt and important social and economic driver. Today, the EU wants to see the facts and a change in policy. This implies also changing relationship with its partners in the world. A public consultation on the Internet governance has recently been launched and Vice President Neelie Kroes has publicly expressed views that the EC will defend in the open Internet model. This open Internet should be thought through in a democratic way when it comes to Internet governance. The EC fully subscribes the OECD model and principles, but there are things that might be improved.

Theresa Swinehart, ICANN, added that we need to be evolving. The OECD Internet policy making principles are an incredibly useful document. They have been the core of discussion in many international forums. But it is also the responsibility of organizations to evolve and improve and to meet the user needs and to meet the interests and demands that are being placed upon them. How to strengthen and improve Internet governance related frameworks has been a core topic, either at the IGF or within the ICANN context. We are in changing times. Business models are changing and user demands are changing and we need to prepare how to address emerging Internet policy issues from a multi-stakeholder approach for a long-term solutions but also for the continued economic growth and opportunities. This is a responsibility for all organizations and for thought leadership. There is a window of opportunities, but there is some work ahead. If we don't get this right, we will harm economic

growth and future job opportunities.

As regulators start looking at ways to address some of the consumer issues with access to the Internet, the moderator asked Laszlo Horvath, Active Media, about his opinion on what is important in order not to disturb the market.

Laszlo Horvath, Active Media, explained that as long as products and services can flow freely to those consumers who want to consume those products, it is fine. Any time there is a barrier, and this could be a non-tariff barrier of delivering goods from county A to country B using an eCommerce platform, that is a problem. Example: One of Active Media's clients is a beauty product manufacturer who is actually targeting Italy to sell some of their products based out of Virginia, US. It took a while to go through all the regulations for a particular country. Another target country was Germany and again, it took a while to figure out what kind of products can be send over there. If products purchased on eComemrce platforms can be given to the consumers at a lower price, this is fine. Every time there is some barrier between the product and the end user, prices will go up, the flow slows down and the consumer looses at the end of the day.

The FTC has more of an enforcement agency than of a regulatory agency. Commissioner Maureen K. Ohlhausen, FTC, was invited to tell a bit more about the philosophy of FTC in view of the amazing pace of innovation and how rapid it keeps increasing, and how FTC differs from a more traditional regulatory agency like the FCC?

Commissioner Maureen K. Ohlhausen, FTC, explained that one of the most important things about FTC is that it is an enforcement agency. Its mission is to protect consumers and to promote competition and to do so without unduly burdening legitimate business.

When FTC brings enforcement actions, it needs to be challenging where consumer harm is really happening, whether it is on the competitive side or on the consumer protection side. That is an important factor to help set up priorities but also to make sure interventions are going to make consumers better off.

Moreover, there is an unique collection of tools at FTC, such as the ability to engage in policy making, as the FTC used to head up the policy planning at the FTC, and thus to see what issues are coming down the pipe for consumers and competition, or the research and economic expertise at the FTC, to really get a good understanding of issues.

In addition to enforcement, FTC is giving competition advocacy, where it gives advice to other policy makers, whether it be state of other federal agencies.

But FTC is not a traditional regulator. Unlike the FCC, people do not need FTC's permission (outside the merger area). That gives a different approach. The principle of saying "get a good understanding of what is really happening in the market and then ask what consumer harm is occurring", and "can we use the traditional tools we have to address this harm", is the best approach the FCT can provide.

The question addressed to Willie Lu, Mobile Cloud platform for Mobile Devices, was about his vision of the digital future and how to make sure that this vision can be met.

Willie Lu, Mobile Cloud platform for Mobile Devices, emphasised that Silicon Valley is a very special and unique place. Not only because of the amount of technology that is created there, but also because of its innovation system which is very established compared to other countries. Technology is moving very fast. In the context of regulation, regulation is much slower than the technology moment. A lot of technology is available and we are just waiting for the regulation, for long-time.

As FCC adviser, Mr Lu proposed to converge to WiFi. If you have WiFi, why using 4G? It is just a waste of spectrum. It is a sensitive topic, but from a technical point of view, the technology is already there. It is hard to always say what is good and what is not good. Technology moves extremely fast, and regulation lags behind. Why always waiting for new standards instead of using existing ones to converge and to benefit the public? Sometimes, the world would be much better and brighter with some less barriers on the regulations side.

--- ✦✦✦ ---

Open Data

STEVEN B. ADLER, Program Director IBM Data Governance Solutions, IBM, USA, [www.ibm.com], chairing and moderating the session, welcomed the participants and detailed the topic of this session. The panel decided that rather than discussing many different topics, it would discuss one topic from many different perspectives.

Most of the Internet area information is been published using a 20th century publishing model, in which the publishers, whether it be newspapers, magazines or websites, publish information and the layout. They created interfaces and the information, which was then displayed in websites or in devices. But in the last few years, a new movement has taken shape which is the beginning of the new 21st century information publishing model, in which the innovation is not coming from Silicon Valley, MIT, Google, Facebook or Twitter or any of the private sector organizations. The innovation is coming from governments, from cities, from states, from federal governments around the world in which they are separating the publishing of information from the interface. That is a radical development.

As an example, the Hackathon in San Francisco at the premises of Code for America was given. 40 developers get together once a week, the City of San Francisco provides its data and the developers are asked to develop applications for this data that help transform this information into interfaces that the citizens can use. The participating developers don't get any money for their work and develop applications "on the fly".

These Hackathons take place in city after city across America every week. Groups of developers get together, they talk about data, applications, interfaces and how to improve their city from outside in and they are transforming the cities themselves. And this outside in movement in which this remarkable innovation is taking place, is coming from one of the least expected places that innovation could come, which is city governments, but it is innovation nevertheless.

GÉRALD SANTUCCI, Head of Unit Knowledge Sharing, DG Connect, European Commission, provided an insight in what is open data like in the EU:

In DG Connect the open data question is related to the observation that over the past two decades, in the wake of combined pressures of globalisation and technological innovation, in particular ICT, citizens have been demanding more of their governments. These rising expectations, too often, have led to growing dissatisfaction with or lack of trust in government.

Therefore, open data is only one component of DG Connect's approach to addressing the challenge of a public administration in the 21st century. Since its establishment as DG XIII in 1986, DG Connect has developed around three pillars: Research Management, ICT Policy, i.e. today the implementation of the Digital Agenda for Europe, and Regulation.

Each of these pillars is working very efficiently and effectively, but communication among them is rather limited due mainly to cultural differences. There are about 1,150 people working at DG Connect, which represents a significative reservoir of knowledge and experience. However, communication for work purposes between the pillars is not optimal - even when staff speak using the same words, these words do not always have for all the same meaning!

In 2012 DG Connect announced its intention to break the traditional silos and implement new tools and processes in order to foster collaboration and communication. Knowledge knowledge sharing is today a key element of work within and across the three pillars. What is at stake is the capability of DG Connect to become a modern, innovative, and more responsive and collaborative public administration. In order to successfully meet this objective, DG Connect needs to move towards open data, open services, and open processes.

First, Open data. You all know the regulatory work in the European Commission to promote access to and reuse of public sector information. But open data is not only an objective that concerns central and regional governments across Europe, it is also an objective – and a political and moral obligation – for the European Commission. DG Connect intends to assume leadership in opening data.

Second, open services. DG Connect is involved in various activities aiming to serve its stakeholders. The objective here is to maximise both efficiency and effectiveness.

Third, open processes. The Knowledge Sharing, Knowledge Base and Stakeholders units are working hard together to design and implement new open and powerful processes. For example, we are using a social collaborative platform that enables our staff to communicate, collaborate, and co-create documents. All units are also involved in the development and use of a metrics which makes that every single administrative entity is fully accountable for its operational performance. At a higher level there is a "dashboard" composed of about 20 management indicators that allows the Senior Management to be aware anytime about the levels of performance in meeting targets.

I believe that if 2013 will be remembered as the year of open data, 2014 will be the year of Big Data. Although we still have to seek consensus on the nature and prospects of big data, it is clear to me that one specific challenge will be to understand how to optimise the use of open data and big data in the context of public administrations.

Why did I say that 2013 will remain as the year of open data?

First, on 26 June 2013 a revised directive on the re-use of public sector Information (PSI) was adopted in the EU. Secondly, a few days before the members of the G8 had agreed on a charter concerning open data. This simultaneity between the European and the global level is a very positive signal that "something" is happening.

The revised PSI directive is the revision of a previous directive that was adopted in 2003. This actually means that work on open government data in the EU started 10 years ago. But before reaching the stage of a directive, it took several years for the European Commission to launch and manage discussions at European level and to get consensus. This is not surprising. In the ICT world, it generally takes about 15 to 20 years between the invention of a concept – for example the Internet of Things – and its wide use by the public.

I want to insist that what we usually call "open data" is not all kind of data – it is public data. It is all the information that public bodies in the EU produce, collect or pay for. This public data is not necessarily open data. To make it open the data must be readily and easily consulted and reused by anyone who has access to a computer.

Intentionally or not, some public authorities do not provide access to the reuse of PSI. There may be a lack of information that certain data exists and is available. There may be a lack of clarity of which public authority actually holds that data. There may be lack of clarity about the terms of reuse. There may be data which is made available only in formats that are difficult or expensive to use. There are in fact a number of barriers between the principles of opening up the access to data in order to reuse it and the reality. This is one key reason why the European PSI directive had to be revised.. Today, there is an obligation for all 28 EU Member States to open the data and to allow all businesses and developers to use that data in order to boost economic growth, to improve governance and to achieve a number of goals that for decades could not be attained because technology was not there.

Another important aspect of the PSI legislation is the aspect of harmonization, the creation of open formats and interoperability between the 28 EU Member States.

"What is the difference between Open Data and data that is published on the Internet?" was the question asked by the moderator. The following answers have been gathered from the audience:

Open data is not only published on the Internet but it is also about open interfaces and open architecture.

Open data is public data that is collected by governments, by public services, which is paid for by citizens. Public services have the obligation to publish that data and to make it open and available for SMEs. Open data is an important component of the digital economy.

The European Union has metadata standards. Open data also implies standards, like metadata standards, which allow the use and interlinkages/ interoperability. In the framework of the European INSPIRE Directive[1], the definition of interoperability has been expanded. It

[1] Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) was published in the Official Journal on 25 April 2007. The INSPIRE Directive entered into force on the 15th May 2007.

goes beyond technological aspects and covers institutional aspects, social aspects and economic aspects -- all of which influence the innovation process. Open innovation is strongly linked to open data.

Open data is also a policy. It is a new political standard. This was why there was the declaration at the G8 level. Open data is a new tool of democracy. It is a process which is still underway, but it is a process which makes policy decide on what to disclose, how to disclose, and how to interface the different data bases. It is a new way for the citizen to have democracy. Concerning the Mediterranean, in addition to the revolution that there is in terms of political agendas, open data is a revolution by itself. Open data in the Mediterranean will be a key tool for democratisation. The objective of the Euro-Mediterranean project HOMER (http://homerproject.eu/fr/) is to harmonise the opening up of public data in the Euro-Mediterranean area.

Steven B. Adler, IBM, added that from an IT point of view, when IBM looks at open data, in contrast to the Internet open data is live. It is not static text on a web page, but it is a data base which is published live outside the firewall, a catalogue of information that is always updated. It is not something that is published, e.g., 9 years ago and what is meant to be updated once a decade. It is live data that, when the city or the state of the government gets some new information, it goes right out to the Internet in a live repository. It is actually a symbol of trust between the government and the citizens. The government who collects taxes and citizen data than gives it back, for free in a live repository.

Standards are an area that is lacking so far in open data. It emerged as a new industry so rapidly that there was no time yet to consider the standards. IBM developed the portal cityforward.org, which collects open data from cities around the world. However, a lot of the information published is published without metadata, without information about how it is derived or the formulas that are used to calculate it. Thus, a lot is not comparable, even within cities just next to each other. It is not possible to compare the information from one city to the next without knowing how the city collected the information, where it came from and how it has been used.

MARGOT DOR, Director Partnerships & EU Affairs, ETSI - European Telecommunications Standards Institute, [www.etsi.org], shared some most interesting thoughts about information standards and what should be done to develop technical standards for open data.

Data is the oil of the digital economy. And as for oil a few decades ago, there are a number of people who are very keen to capture oil at the source, to shape the pipes, to make sure that they are in control of the terminals and in control of the transport. And this poses a number questions to all of us. Partly, the answer to this lies in standards and the way we enable all the players to have a say in what is happening with the data, and with open data in particular.

In general, ETSI is more involved with connectivity and services than metadata and formats etc. However, a few years back, ETSI, together with the W3, was involved in a project called Share-PSI. This was before the revision of the PSI-Directive mentioned earlier. The idea was to identify the stumbling bocks in terms of interoperability for open data. It was much more than standards, because standards is only part of the picture when it comes to interoperability. From a technical perspective it is true, it is very much about the way data is

required, the formats, the way data is retrieved or packaged etc. This is a domain which is being shaped and there are different schools of thought.

There were also a number of issues pertaining to legal interoperability, the status of the data and the licences under which the data is published. At a time when the public sector is disinvesting in public services for economic and demographic reasons, what means publicly owned data? It is not crystal clear. It is not because it is data that you can go and search for in an administration. There are some very important questions from a legal perspective, such as copyright models, the acquisition of data and how to license them.

There is also a question of business models. In France for example, the museums sometimes have cultural data which should be public the way you can go and see a painting in a museum. But the point is that they make money with this because it is put in a catalogue, there are derivate works etc. The business incentive for the people who own the data to actually put it a machine-readable format, like the PSI directive says, poses a number of questions.

Then, there is the issue of data security and privacy. A single piece of data might be completely insignificant, but if it is mashed up with other data, one can get a pretty accurate picture of who is doing what – and people are worry about who is doing what with their data, be it public or private.

The role of standards in this is to enable a collaboration really allowing the different players to participate on an equal footing – and not to have somebody who is grabbing the oil at the source, put it in the pipe that they decide the shape and form of, and grab the oil at the endpoint because this is where the big money is. Standards and regulation for this matter have a very important role to play, be it architecture, interfaces, formats, presentations etc -- and this applies to open data but also to other subjects of the industries ETSI is in.

The question on how standards can help shaping the digital future was then addressed to Margot Dor.

Margot Dor, ETSI, answered that everything is changing in the industry, so the question is: What will be the standards that will shape what is happening? Standards rely to an eco-system, which means that it is profitable and rich and it is living, and it allows people to plug in and to participate in this ecosystem. It is the contrary of a closed system. That is what standards are for. ETSI is financed by member's contributions. And the question to ask is, at a time when everything is changing, which kind of standards and how to make them very useful for the industries the organization is serving?

It will have to do with how to gather requirements. And how to make sure to make platforms, which are a sort of technology agnostic or even service agnostic, but that enable the different business sectors to cooperate and to plug in their own business requirements.

For example, ETSI worked on a platform called Smart Security. It has the ambition to serve the security paradigm of different business sectors. And the idea is to have something that is sufficiently agile and flexible and then to have different sectors plugging in. This is, for ETSI and a number of cooperating standardization organizations, is an important but tricky task.

Standardisation is not anymore a business to business discipline, which it was in the beginning of ETSI. The users of standards at ETSI at the beginning were the operators. Now, you have to factor in the end user, the policy maker (when talking about eHealth, transportation, smart cities) and you have to make sure that you incorporate these requirements.

Steven B. Adler, IBM, highlighted one of the interesting aspects of open data in the US, which is that most of the cities and states that are doing it are doing it in the cloud. They either use open source, catalogues like CKAN or DKAN, or they buy cloud based services from providers via subscription. Cities find that an interesting model because subscription based services don't require lengthy RFP processes and they are far less expensive. They don't require infrastructure to be implemented. But of course, not every city in the world has a cloud based environment. And there are also legitimate security and privacy concerns about cloud based data.

GUIDO WALCHER, Telit Wireless Solutions, Italy, [www.telit.com], draw the attention to a key concern related to open data with regards to cloud based data services and security and privacy, from a device manufacturer's point of view.

The key issue is related to the implementation of the procedure to authenticate the source of the data and to ensure secured data transport. From the technical point of view, it is possible to collect data everywhere in movement by m2m technology. Data can be collected by clever sensors and the flow of these data can be conveyed in servers, in clouds etc. The key point is to trust in the collected data, because the data that are made available in the repository are the basis for decision making.

From a business point of view, if there is a business-related background of the data, it is the responsibility of company that manages these data to provide this type of security, but for data that are open and public this concept must be strengthened.

Gérald Santucci, European Commission, added that businesses are not only interested in getting the data but also expect the data to be persistent, reliable, maintainable, secure, true, accurate. If we really want to use open data in terms of access and reuse for developers and businesses at large, it is important that some standardization work is been thought of, developed and deployed. The EC has opened an open data portal in December 2012, which is based on open source solutions. If we really want to help developers to invest, standardization is necessary to make that not only the data is open, but also people have the guarantee that it is accurate and sustainable.

STEVEN HAINES, Founder/CEO Sequent Learning Networks, USA, shared some great thoughts about tactically turbulent times, the great possibilities of exploration, the spirit of the Wild West and open data:

Within the framework of a Hackathon in the City of New York, a public land use database was exposed to the public. It contained about 100 years worth of data, talked about shifting patterns of land use and people who were the presenters were the hackers who created land use maps and diagrams etc. What they were doing this work for?

The world of business talks about scarce resources just like any public agency. Business people wonder how to justify what it is that they are doing based on what is available. The expression -- or document -- used for this is the business case. A business case is merely a justification for spending money to do something. What are all these people doing with all this open data? It is like raw materials, but what to do with it? How to manufacture it? Who should it be manufactured for? For what purpose and for whose value? Because ultimately people might want to capitalize that.

Inside of large cooperation are vast volumes of untapped data assets. The question is if those data assets can be attacked and exposed internally the proprietary data and maybe it could be merged with data that is available outside for some other purpose. The idea is that people who work in this domain ought to thing like business people in terms of the potential monetization.

What would a public agency care about monetization for? It is public data, they got the tax money, they are making the data available to people anyway -- but what happens if they used some monetization techniques to look for additional sources of revenue for the municipality or the public agency, the same way a for-profit entity would do the same thing.

To conclude, we have a lot of work to do and we should think like business people when we are attacking the problem of this vast throw of assets.

Steven B. Adler, IBM, added that there are very few use cases that have a business case associated to them in the open data world. However, there is one that comes from the Open Data Institute in the UK in which the National Health Service in the UK published some data about prescription drug usages. It was a well known secret within the UK that the NHS had been overpaying for prescription drug use for decades. And when they published they overpayment data in an open format, a small consulting in the UK took the data and analysed it and came back to the National Health Service with a business proposal. They had discovered exactly how the NHS had overpaid for decades and how they could change their payment model and save 200 million pounds per year. And the NHS was more than delighted to hire this consulting firm to do ongoing analytics on all their prescription drug purchases to discover how they can save the tax payer money and to be more efficient. So it turned out to be a business model.

Maybe it is possible that open data, by exposing information outside, that other organizations that are not subject to the stovepipes that we create, can discover what we have ignored for a long time and help improve our operations. But this requires an infrastructure capable providing this information to the public and a regulatory framework that also encourages investment in providing that framework.

CLAUDIA SELLI, E.U Affairs Director AT&T, Belgium, [www.att.com], discussed the question of, "do we have the necessary regulatory framework in the EU today to provide open data services for all of the people and for all of the different areas that are involved":

In order to provide open data and open innovation, which are directly linked, you need an infrastructure and IP broadband infrastructure to allow all that.

AT&T has been heavily investing in the US to move from 2G to 3G to 4G LTE, also because its customers expect to be connected on a mobile device at anytime, anywhere. In the past 6 years, AT&T has been investing about 100 billion dollars in order to develop and provide power networks. With its Project Velocity-IP, the company has been rolling out 45 Mbps IP upgrades and is also aiming to reach the 100 Mbps. AT&T plans to reach by 2020 the transformation to an IP all-LED type of broadband cloud based company. And this certainly will also change a little bit the reality.

In order to attract investment and to build all this, you need the right regulatory framework in place. For AT&T, an ideal policy framework is a policy framework which is not keeping pace with technologies because technology is advancing very fast. It is not anymore as it has been 6 years ago. Everything is mobile now, our education, our work and the health services from which consumers and citizens benefit. There is a need for a policy framework with high level principles, which doesn't stifle innovation and which allows technology to evolve.

Another issue is spectrum. Spectrum is vital because the existence of spectrum can not be taken for granted. Spectrum allocations are key. Not only it should be harmonized, which is a bit lacking in the EU, it should also be evergreen in order to attract investment and to encourage companies to invest. The Connected Continent Initiative of the European Commission, which is approaching and tackling the use of spectrum, seems to be a promising step forward.

The other problem of the EU is the fragmentation. The EU is confronted to 28 different policy regimes. The Connected Continent Initiative will probably bring more harmonization, which is very important.

Open data also requires to have privacy tools in place. AT&T tries to provide its customers with the tools letting them know how the company is using the data. Furthermore, AT&T doesn't use customers' data unless they have given their consent.

The following question addressed the fact that open data is closely linked to innovation. What is the right policy approach that can attract investment from companies while allowing innovation?

Claudia Selli, AT&T, pointed out that it is mainly having a policy framework with high level principles which is not going too much into details, but which is allowing innovation to continue. Another important point is harmonization and not a fragmented market. Technology advances very fast. It might be that by the time a law is passed, the next technology is already upcoming and legislation risks to be outdated. Thus, it is important not to enter in too much details.

Gérald Santucci, European Commission, emphasized that we are talking about open data, which is in principle here public sector information. However, more and more governments are working in partnership with the private sector. The question is: should the work requested by governments, but carried out by the private sector, be seen in the context of the policy framework of open government data? Moreover, a lot of data that is generated by the public sector is data that has a clear public interest, for example clinical trials. Should it be made mandatory for the private sector to open this data because it has a public interest?

Steven Haines, Sequent Learning Networks, USA, commented that most companies don't have the public good at heart. There has to be a profit model in some way. However, some business models can be created that would combine the interest of both entities for the greater good. But again, it costs money to create, to manage, to disseminate etc. How are we going to control the monetization of that?

Of course, there are companies who are socially responsible and in that case one has to provide policy and guidance and governance for this, but underneath companies are generally not acting in the public good.

Steven B. Adler, IBM, replied that there are public companies that are allowed to be traded on public exchanges and they have public obligations. The shareholders, consumers, or members of the public have a right to know that these organizations are maintaining the public trust and that they are behaving in a way they can scrutinize. There have been so many scandals and fraud, year after year, involving public companies and non-profits. It is time to start expecting public companies to publish their data – as a demonstration of their trustworthiness to the consumers and members of the public. In a sense, government is a business. They just collect the money first and then they provide the service, but they are still collecting the money and giving something back to the citizens. They are selling a product the citizens pay for through taxes.

What is fascinating about open data in the US, it is a grassroots self-organized movement of people. In the context of the New York Hackathon, people weren't present because they all care about the city and they all wanted to volunteer their time to create new interfaces. The way the ecosystem works is the following: The motivation of the city publishing the data is the people to come. The city wants the developers to come because they create value for the city and they are voters and contributors. The IT department is pleased, because there are high level developers to develop new applications for free. And finally, the developers come to the Hackathon with the expectation to discover how to take advantage of the "gold" that the city is publishing, to develop start-up businesses and develop revenue sources and jobs from the open data. Everybody is there with a different set of expectations and interests and this creates an eco-system, a symbiotic relationship between publishers and developers.

Margot Dor, ETSI, put into perspective that, when comparing the opportunities provided by open data to the Gold Rush in the US, one has to remember that the people who got the money out of this, where not those who were in the business of finding gold, but those in the business of transport, real estate, provisions etc. The question is, who will be the transport companies of this new revolution – if there is one.

PASCAL POITEVIN, Head of Department, Secretary of the Strategy Committee of Information Systems, Institut de l'Elevage, France, addressed the problem that there are still vast parts of the population that live in rural communities and small towns, that don't have the resources. How to extend open data to those communities? Is it just for big cities and big companies?

Agricultural issues won't be found in town centres but in rural areas with low population densities. The discussion around open data implicitly refers to an economic model, because at the end, open data produces new services and innovation for the final customers and for the farmers in the rural areas. At the same time, we rely on a telecommunication operators' business model which is looking for mass customers. It forgets sometimes how to decline this kind of model to cities or territories where you don't find mass customers but where you have perspectives for added value professional online services. This is true for agriculture, but also for eHealth or eEducation, because both can be found in rural areas.

What could be the economic model that is compliant to this kind of territory? One solution could be a business model based on advertising revenues. In the framework of 4G deployment, the only solution for operators seems to be to target the young people who watch TV on their smartphones. However, this is not the right target group, professional services are probably more interesting for communities.

Why is agriculture interested in open data? There is an important goal to reach: Agricultural production has to be increased in order to be able to feed 9 billion people by 2050. The issue of food security and the fight against undernourishment is also on international agendas. For instance, there is an G8 initiative to foster global food security. The goal is to increase public investment in agriculture and to develop options for the implementation of a global platform to make reliable agricultural information available to farmers, taking into account existing agriculture data systems. The initiative is relying on open data.

Today, open data is assimilated to public data. However, personal experience has shown that public data is absolutely not open. The data base managed by the Ministry is entirely regulated by the law and its usage is very narrow. Moreover, there are some very big research agencies in the area of agriculture. While at the top management level, you have intelligible consideration about open data, at the research level, there is a very strong break, because researchers are not ready to share their research today. This is an important issue to solve, to really get the benefit out of open data.

The moderator **Steven B. Adler**, IBM, addressed the question to the audience "how will culture impact the publishing and consumption of open data".

The example of China was given. China has become much more open in the recent years, but it is a completely different standard compared to the western countries. It is a long way to catch up. However, many things change. For instance, the trial of Bo Xilai was live broadcasted over the Internet. That was the first time in the Chinese history that such thing happened and the public reaction was very positive. At the same time, a lot of things are considered secret in China, which in the Western world is just considered as a normal piece of information.

A European project that developed social spaces for innovation just ended a few months ago. It goes beyond a Hackathon because it involves farmers, fishermen, women associations but also scientists and members of the European Commission (for standards) to ensure to obtain results which include open data with ensured usability, accuracy and sustainability. The social space for innovation includes a social validation process for the innovation process itself. Those results, in pilots all over the Europe, covered multiple cultures and that ensured to have results which gathered and integrated cultural, economic, institutional and even legal aspects to the social innovation process. However, we are not just talking about making money and business – this is important for companies. We are talking about sustainability of the future. The climate change impacts, the increase in population and a number of other elements put together create a perfect storm that we have to face. Hopefully, these kinds of research results can improve business models for all.

We have very different data cultures across Europe and the world and some of the data sets are so sensitive that they touch onto sovereignty issues. The following question coming from the audience concerned the ability to develop standards and regulations to protect privacy or issues of sovereignty in Europe. There is a great dependency of European countries on a few foreign companies for data. Moreover, Europe has difficulties to come up with common regulations such as the reform of hard data protection rules. Open data is definitely a great opportunity for democracy, but how to come up with standards and regulation that ensures the protection of citizens and sovereignty?

Gérald Santucci, European Commission, stated that there is legislation on data protection and that all data by default can be made open, except if it is personal data. One question is, what is “personal data”? Europe has tried over the last 10 years to come to a definition of personal data, but it is not always easy to say precisely what it is.

Privacy and data protection are key aspects of the implementation of open data policy. At the same time, it shouldn’t be a bottleneck. We should not use certain words that create fear in order to stop or to delay the implementation of something that we know is good for the society and for the economy.

It is essential that even very serious topics like data protection and privacy are not used in a way to avoid the actual deployment of a policy on open data. How to do it? Through continuous dialogue amongst all stakeholders – business, society, consumers, developers etc., even if this will take time.

Claudia Selli, AT&T, underlined that it is key to have a multi-stakeholder approach to such a important issue like privacy. A regulatory top-down approach which risks stifling innovation is probably not the right way. An industry-led approach that can ensure privacy and security tools would be important in that respect. Nowadays, there is a lot of fear around privacy and security and how data are dealt with, but at the same time the industry has to come up with the right tools to ensure privacy and security. Having a regulation in place that tells what to do and how to do it would stifling innovation and the way forward.

Steven B. Adler, IBM, concluded by referring to the MIT website where lots of open data use cases from around the world can be found. People don’t have to wait for innovation – it is happening right now.

--- ✦✦✦ ---

The **chair and moderator** of this keynote session, **MADELEINE SIÖSTEEN THIEL, Senior Programme Manager, Services & IT Implementation Department, VINNOVA - Swedish Governmental Agency for Innovation Systems**, Sweden, reminded the attendees of the success of last year's Global Forum which was held in Stockholm and thanked the City of Trieste for hosting the Global Forum 2013.

GABRIELLE GAUTHEY, Executive Vice President Global Government & Public Affairs Alcatel-Lucent, France, [www.alcatel-lucent.com], shared a vendor's view on innovative models and trends that can be seen in PPP around the world.

International Trends For New Investment Models in NGA

The telecommunications sector has undergone more changes in the past 5 years than ever before. The acceleration of innovation and moves is incredible - more than ever before in the last 25 years.

On example is the explosion of mobile connections, i.e., the explosion of mobile broadband and smartphones, especially in the developing world. People starve in the slums of Nairobi, but they all have a mobile phone and 8 out of 10 of the phones that they buy today is a smartphone. We are moving to a world, where mobile broadband is becoming the rule -- and video, and cloud, and M2M devices, Internet of things. This has some implications: until recently the mobile was a device that was nice to have, but with the tablets it is becoming the portal of our lives – be it for video streaming, be it for storing, computing or gaming. And all the contact is moving to the cloud. There is a real change in the topography of networks, between these devices, that we have in the hand, the cloud, and in-between there is a big shift, where the network is becoming all-IP and is becoming backhaul to mobile.

With the convergence, there is no longer mobile and fixed network. The future of mobile is small cells, because there is such an increase in the mobile traffic that we have to offload it as soon as we can on small cells. And with an IP backhaul one could tend to say that the future mobile is fixed. And it is of course not only bandwidth but latency, security, reliability.

The mobile digital traffic is going to grow by a factor of 25 in the next years, because of the increase of smartphones, because of bigger screens, because of data hungry devices, because of Internet of Things, and because of video (70 percent of Internet traffic in 2014 is going to be video). The smartphone footprint has reached in 18 months the footprint of TV in 15 years.

This leads to big challenges on the value chain. Especially because this means huge investments at a time where this evolution comes with big disruption for the telecommunications sector. It is true that the OTTs are going to become the relevant part and carriers will have a problem. The costs are increasing massively, the revenues are

decreasing and there is a decoupling, because - in a time of data - we still live in the carriers' world at a time where the business models were based of voice. The telecommunications market is really being challenged with revenues under pressure from carriers and from OTTs, with the revues of carries being based mainly on access and the revenues of OTTs being based on adverts etc., taking most of the value change on top of voice with video and m-commerce.

Europe has a problem because, as most countries, Europe needs huge investments, bigger than ever before, both in backhaul and in mobile. To reach the Digital Agenda targets, Europe needs approximately 300 billion EUR investment before 2020. And Europe is lagging behind: Korea, Japan, Singapore the United Arab Emirates are ahead. Europe was leading in traditional broadband, DSL penetration and in 2G, now it is lagging behind in NGA and in LTE. In 2013, only 9 percent of the LTE subscribers worldwide were in Western Europe, 7 percent in Eastern and Central Europe, 42 percent in Asia pacific and 40 percent in the USA.

What can be done? The world has very different regulatory and broadband policy models. The Americas are characterized by the vertical integration model, where broadband is basically not regulated and with very little public intervention. In South America, there are lots of PPP. In some Asian countries, such as Korea and Japan, there is very heavy regulation and a very heavy drive of the public sector, and there are network separation models in Australia and New Zealand.

And Europe just hesitates between the two. It is fragmented and there is an ongoing regulatory reform for NGA, but a definite lack of investment. The world can be divided between two or three models. There are 2 platform countries, with competition between cable and telecom and investment, e.g. in Portugal and the US, but also with a debate on the competition model and on the coverage of less dense areas.

There are 1 platform countries, based on unbundling active infrastructure competition on top of a common passive network. This is the model adopted in France, UK, Italy, and Spain for copper. Countries hesitate in going forward with this model.

And there are 0 platform countries – which leapfrog. This is the case of developing and emerging countries where fixed infrastructure (access, backhaul, backbones) is poor and limits mobile and fixed internet access expansion. Governments step-in to ensure coverage, speed, networks openness and services affordability. There are new investment models, based on open backbones, e.g., in South America and Africa, or shared LTE access, e.g. in Mexico, or Kenya.

Facing the scarcity of fund and spectrum, innovative regulatory thinking and investment models emerge in developing countries. There are new models of networks, new competition models. For instance, Mexico has a very innovative model for 4G sharing.

Europe should think about these new innovative models, such as infrastructure sharing - either active infrastructure on top of a common infrastructure model with PPP or not. This doesn't mean public financing. It means a public drive for new investment models and new PPPs to say, what is important: getting that fast or getting a silly duplication of what is very capital intensive (e.g. fibre where 80 percent of the cost is sunk in civil works), or are we going to come up with new ideas?

Europe urgently needs a new model to keep up with the pace of innovation. Some of the new

innovative models should be looked at elsewhere, outside Europe, especially in developing countries. This could be called reverse innovation.

LORENZO MONTERMINI, IT Manager GPI Group, Italy, [http://www.gpi.it/en/], shared some most interesting considerations regarding innovation prospects in the field of public healthcare and the role of ICT in such scenario.

New Frontiers and New Challenges For Public Healthcare

GPI is one of the leading Italian companies in the field of healthcare, information, communication and technology. The company has been dealing for over 25 years with ICT for public healthcare, passing through all the different stages of evolution in Italy's healthcare and welfare system.

All over the world healthcare and welfare represent the most significant budget items, and the concept of innovation in the public sector refers to the set up of innovative solutions that, while promoting an improvement in the QoS, allow thereby to rationalise expenditure.

In many cases however, innovation in the public sector is referred to merely technological aspects. Instead of starting by a true conceptual extend of the term which is to be an expression of service models development adapted to the changes that our society undergoes. Therefore not only technology, but the redefinition of processes, of functions, resources, goals where the technology is indeed the enabling tool to build an enormous relationship and ensuring the sustainability of the world system.

The innovation in this conceptual dimension involves a redefinition of the public sector's role. A parameter that should be reconsidered based on the requirements of the citizen, patient and the companies. The public sector needs to embrace the profound social economic trends and needs to redefine its range of services, starting from the citizen and from the enterprises.

Dealing with healthcare and welfare, the public sector must become aware of a social context characterized by a mass demand -- more and more complex, mainly due to the presence of a population with more elderly and informed of the medicine process, but at the same time also disoriented and uninformed.

The presence of a population with increasingly broader areas of discomfort, various forms of dependency, and an increase of chronic diseases which requires not always standardized services but a high level of health and social services customisation.

The public sector must become aware of that. Healthcare will no longer be solved due to the hospital and the specialist doctor, but will be offered through a network model of care intervention provided in the territory of the patient's home as well as an intersection of transversal skills of more different actors, not just public who take care of patients in a coordinated way thanks to the essential role of the caregiver.

A care model that must tend towards a true patient management system where the relationships are many to many and where the caregiver in his everyday work must have an instrument to govern the patient's care and treatment services. Computerizing originally structured and organized processes is not innovation. The conception that designs the implementation of an information system that maintains the relationship between the user,

the caregiver and the care network notes is the real innovation project through which must be conducted a modern computerization.

Another consideration regards the ways of cooperation between the public and the private healthcare sectors. In a few years, some aspects of a strong and innovative change will affect the definition of real service concessions in favour of private entities organized and characterized by specific requirements in terms of delivery modes and service levels as well as remuneration methods based on savings. We are going to witness a deep innovation in the way we create, design, implement and manage healthcare and welfare services -- services able to bring the healthcare and welfare to the citizen and not vice versa. This would be the best way to find the economic, financial, human and material resources for the provision of new healthcare and welfare services, with higher quality. But also for the application of those solidarity principles that are the basis of the constitutional documents of our countries.

The question addressed to Lorenzo Montermini, GPI, was “which can be the immediate role of ICT in healthcare?”

Lorenzo Montermini, explained that there are several immediate roles, such as promoting the empowerment of citizens, of patients through the implementation of self-service systems. Or promoting the integration between the healthcare processes in the hospital and those of the territory by placing the patient at the centre of the information system. But also promoting the dematerialisation of care and treatment processes and those of administrative accounting, e.g., electronic records and electronic billing and automatic processes with low added value to the user.

THOMAS ROSCH, Counsel Antitrust & Competition Practice Latham & Watkins, USA, started out by thanking the organizers of the Global Forum, and the moderator of the session and by declaring that he spoke only for himself.

Thomas Rosch then summarized the principal arguments that had been made against FTC enforcement in high-tech industries. The first was that market definition was too hard because the markets were generally multi-sided (in that they included both consumers and others, generally advertisers). He acknowledged that under US antitrust law, the Commission always had to define a market, but that the market could sometimes be defined by where there were competitive effects. He also noted that multi-sided markets were not new--they included many markets with which the Commission was familiar, including markets involving newspapers, television, and radio.

The second complaint was that the transactions/practices in high tech cases were too dynamic-- the markets changed too much and too often. He acknowledged that the DOJ's Microsoft case served as a cautionary tale for the FTC. But he observed that Google's Double Click and Ad Mob cases showed the Commission could change "on the fly" and the Intel decree showed the Commission could settle a case quickly even when a Commissioner wanted to litigate it (as he had wanted to do so.).

The third complaint was that the FTC couldn't challenge conduct by firms that only have incipient market power --firms that are on the cusp of having market power, but have no monopoly power because the market hadn't yet tipped, which was true of most firms in high-tech industries--because the case law prevents a challenge. He reminded the audience that the Sherman antitrust law prevents both an "attempt" to monopolize as well as "monopolization, unlike Section 102 of Competition Law in the EU which simply prohibits conduct by "dominant" firms so that "dominance" must be shown before an investigation could be launched.

Fourth, he said the Commission was sometimes criticized for challenging inventors in a secondary market like "trolls". He acknowledged that the Commission needed to be wary about challenging inventions (as we were reminded by Justice Scalia in the Trinko case. But he suggested there was no need for such a concern in cases involving "work arounds" because rules restricting "work arounds" could not apply to rules challenging practices that might impede inventions, by definition.

Finally, he observed that the fundamental question in this area was whether rules requiring innovators to compete at all were sound or whether it was best for innovation to lock all scientists working on a project in the same room and encourage them to conspire. He said that Schumpeter and Arrow had debated this basic question ad nauseum and he had nothing to add to their remarks.

“What do you consider the biggest barrier to the FTC handling enforcement in high-tech matters?” was the question addressed to Thomas Rosch.

Thomas Rosch, Counsel Antitrust & Competition Practice Latham & Watkins, emphasized that the fundamental issue seems to be the question: Are we better of in terms of innovation or inventiveness to have scientists gathered around a table and debate these questions or are we better of having them compete with one another to come up with the best solutions?

MICHEL CATINAT, Head of Unit for Key Enabling Technologies and ICT, DG ENTERPRISE European Commission, provided an expert overview of

Public sector Driving Innovation

ICT matters in terms of competitiveness, innovation, growth and employment.

The EU has challenges to face: The first challenge is the expected gap between the demand and supply of digital skills amounting to 860.000 vacancies by 2015 in Europe. Only half of the new entries come from students graduated in computer science. Thus, the EU needs training institutes in order to try to meet the demand.

The second challenge is the challenge of digital entrepreneurs. Only 1.7 percent of EU enterprises take full profit of the digital opportunities, 41.5 percent are absolutely non digital, 32.5 percent are digital beginners, 20.2 percent are digital followers, and 4.2 percent of the enterprises are digital mature.

In terms of the e-skills European Policy, the EU started with ICT practitioner skills 5 years ago. These are the capabilities (of technicians and engineers) required for researching, developing, designing, strategic planning, managing, producing, consulting, marketing,

selling, integrating, installing, administering, maintaining, supporting and servicing ICT systems.

As a result, there are now 36 well-defined ICT competences (5 years ago, there was just a “black hole”). There is also a certification system to ensure that the diploma given for the different competences are of high quality. This means that employees exactly know their competences if they want to be hired by a company. On the company side, companies can better plan their needs in terms of competences. This should ensure a better functioning of the labour market.

The Commission has also worked with the educational systems and training institutes in order to ensure that they offer in their curses curricula corresponding to the competences needed.

An important initiative in this context is the Grand Coalition for Digital Jobs (http://ec.europa.eu/digital-agenda/en/grand-coalition-digital-jobs).

Digital entrepreneurship embraces all new ventures and the transformation of existing businesses that drive economic and/or social value by creating and using novel digital technologies.

Digital enterprises are characterised by a high intensity of utilisation of novel digital technologies (particularly social, big data, mobile and cloud solutions) to improve business operations, invent new business models and engage with customers and stakeholders.
They create the jobs and growth opportunities of the future.

A digital entrepreneur has not only to be able to create new and innovative applications but must also be able to use these technologies to develop the company, to make it grow and to access to the digital world.

However, Europe is just at the beginning of this initiative. A study has been carried out by Deloitte in order to answer the question “what should be done by public authorities, such as the EC, to accelerate the transformation of the EU business landscape towards digital entrepreneurs”. The Deloitte study came up with the following 5 pillars: Pillar 1 “Digital transformation, innovation and commercialisation”; pillar 2 ”Boost the Digital Single Market”; pillar 3 “Ease of access to finance and enhancement of digital investments”; pillar 4 “ICT and e-skills education and training”; and pillar 5 “Digital entrepreneurial culture”.

Currently, pillar 2 is covered by DG Connect, pillars 3 and 4 are covered by DG Enterprise.

In order to cover the pillars 1 and 4, a number of actions have been undertaken: First, monitoring in order to understand the technological evolution, where are the business opportunities and what are doing the different public authorities in the EU and abroad. Second, the launch of a campaign to raise awareness. A number of best practices will be identified and should serve as examples to follow. Moreover, the EC will try to boost eMentoring systems, which are peer-to-peer and seem to be very effective. Third, the EC will do exactly the same as for the ICT practitioners, but this time the top of the pyramid will be covered. The focus will be on entrepreneurs by strengthening competences and e-leadership skills. First cooperation started with universities and MBA institutes.

The following question addressed the “Grand Coalition initiative”.

Michel Catinat, DG Enterprise, EC, explained that the Grand Coalition has been launched by Vice-President Neelie Kroes. The idea was to ensure partnerships between the world of the companies with its existing needs in terms of digital competences, the world of educational systems to provide the right competences and the world of the labour service of administrations to match demand and supply. The different partners were asked to come together and propose a strategy to cover the three dimensions in order to ensure a better functioning of the labour market in the EU and to contribute to closing the gap of 860.000 vacancies.

--- ✦✦✦ ---

Innovative Public Sector Transformative Services for/ by Governments and Citizens

The session's **chair**, **EDI KRAUS, Councillor for Economic Activities Municipality of Trieste & Director General, Julon Ljubljana d.d. & Board of Directors Member, Aquafil S.p.A. Trieste, Italy**, welcomed the participants and opened this afternoon session.

HUGO KERSCHOT, Managing Director IS-practice, Belgium, moderating, briefly introduced the topic of the session, which is about open data, open development and open services in the context of public sector innovation.

What is open data? What are we going to do with open data? What is the added value? Is it just another buzzword? Today's citizens are concerned about policy issues such as safety, security, mobility, environment, climate change, or food security – how are we going to solve these issues with open data, open development etc? These are the main questions to be discussed.

TROY NACHTIGALL, Prof. ISIA Firenze, Representative of the City of Trieste, Italy, presented a designer's view open data projects in the public sector:

Breeds Trojan Horses

ISIA Firenze raises designers, not only in the industrial community but also in the communications field. One of the institute's big beliefs is that design is the key driver of innovation, even in the public sector as in the EU recommendation documents of "Design for Growth and Prosperity".

ISIA Firenze tries to build and raise designers that are capable of creating ideas and ideologies that cities can use and build upon to satisfy the needs of the citizens that live and work there.

One of the institute's big projects is the "bike loves" project in Florence. The goal is to encourage the use of bicycles and to make it look exiting and easy to use through the creation of new bike paths. It is a communications project promoting a more innovative and easy to use of bicycle in Florence.

When it comes down to the ideology, these design projects are ideological because design means to create a common future. It is designers that work for human beings, that work for the needs of human beings and solve the problems of human beings.

Another project carried out in cooperation with the City of Trieste is "The City as a Platform". The project is building the city as a platform, not as a physical place, but as a series of services that are accessible to larger groups of people. It is creating a best practices model

that other cities can use to deploy in this whole idea of smart cities. It is about how do they approach the citizens as users of their community, instead just as citizens of their community. The project is looking into this and is building on new models of ideologies of what a city looks like as a platform, instead as only a place or a geological location.

CHING-CHIH LIAO, Deputy Secretary-General Taichung City Government, Taiwan, reported a great story about Taichung's Mayor Hu with strong convictions and how green is closely connected to broadband and smart cities:

1 Pasture Can Change A City

Before our mayor, Jason Hu, took office, he used to be the Taiwan representative in Washington D.C. and also the Minister of Foreign Affairs. He is a man who looks into details. He told us many times that if you cannot look at the details then you cannot achieve anything significant. When he first took office, he thought that if he could not save a small piece of green land in downtown Taichung city, how he can be a great mayor. That is his theory.

The first photo here shows you how the Citizen Square looked like when the first year mayor Hu took office. It did not have any grass and the beauty was totally abandoned. In 2004, he tried to introduce free Wi-Fi spots in this area and make the surrounding area the experimental area for free Wi-Fi connections. This free Wi-Fi service gradually attracted a lot of people. Gradually, this kind of facility attracted more and more people. Two years later, Hotel One, then the first 5-star hotel in our city, opened business.

In 2008, Park Lane by CMP, a private construction company whose goal was to renew abandoned buildings and revitalize the beauty, came to this area and reconstructed the building right across the Citizen Square. They created a vertical garden, using real plats to cover a building's façade. They grew plants going upwards along the building both inside and outside. Now, Park Lane has been known as the "New Landmark of Taiwan's Nature and Aesthetics" and also attracted a lot of international visitors and tourists. Not only was Park Lane the winner of Taiwan Real Estate Excellence 2009 Award, but also the winner of FIABCI Prix D'Excellence Awards 2010 – Retail Category given by International Real Estate Federation. We are proud to be able to show Taiwan's creativity and efforts to green life to the world.

We also held some events at the Citizen Square. One of the most successful events is the Taichung Jazz Festival. In the first year, 90,000 people participated in this festival. In 2013, it around one million people enjoyed the event. It was so successful that it attracted more and more people each year. In addition, Taichung International Flower Carpet Festival was also held here.

Our government also remodeled the surrounding area and renamed it Calligraphy Greenway attracting more people to come here. Along the Calligraphy Greenway, Designers' shops, artists' studios, theme restaurants, create an ambience of art and culture. This area has become Taichung's most characteristic and ideal living environment.

It also draws visitors of the key nodes together and accelerates the tourism as well as economic development of the region. Upon completion of construction, the Calligraphy Greenway successfully re-organized the adjacent urban fabric and communities and increased their land value by more than 20%.

Since more and more people were drawn into this area, we were able to integrate art spots and shops, and to create a leisure cultural shopping district with Art spots. And it is expected that in two years, the greenery per capita will reach 5 m2, with this reaching 5.5 m2 by 2019.

In accordance with urban development plans, Taichung had created 478 parks totaling 793 hectares through the end of 2011, representing a 10.4% growth rate from 2007. The greenery per capita is 3.79 m2, giving it the seventh-highest ranking in the nation.

The most well known example of Art spots is the Calligraphy Green Way, which is a new space that integrates the arts, culture and living, where custom-designed seating and outdoor sculptures can be found.

Young people in Taiwan tend to start their own business. Thus, we invested to help them get a job or expand their business in order to create more job opportunities for others. That way, more than 72,000 new jobs have been created in the past 36 months.

Mayor Hu's philosophy of governance of " Pasture Civics " is that an area of Pasture can change a city, giving the city green genes to initiate a low carbon evolution. For the last 13 years, low carbon living has become a " lifestyle and habit " in Taichung. Low carbon living is not a policy option, but what all mankind must return to!

EIKAZU NIWANO, Producer Research and Development Planning Department, NTT Corporation, Japan, introduced a number of ideas as the next issues of eGovernment and eParticipation:

eSelf-Government/ Governance
Next Issue of eParticipation

Four main background issues to be discussed this context: Self-governmental organizations play a very important role for disaster recovery and basic life support. An example are the two earthquakes in Japan in 1995 and 2011. In both cases, not only public authorities but many self-governmental organizations, such as neighbourhood associations, cooperatives, NPO, largely contributed to the disaster recovery. They provided volunteer based supplying tools and supplies, health, education, and life support.

Smart cities try to improve their sustainability by increasing autonomy with regards to regional entities and stakeholders. They attract citizens by providing basic life environment, which in turn increases tax incomes.
There is a tendency of self government in the world. Examples are the principle of subsidiarity inscribed in the Treaty of Maastricht, but also the "self-help, mutual help, cooperative help, public help" principles discussed in the same context in Japan.

On the other hand, social, community and regional computing technology will be improved by including big data, open data, and personal information utilization.

All these four backgrounds influence the offer of the ICT based environment which regional entities can use to administrate themselves and to cooperate with each other spontaneously and autonomously within their basic life.

Using ICT, the construction of self-government organization and global cooperation among those organizations should be done dynamically and trustingly.

There are four types of roles or functionalities for this environment. The most important one is the self-help support role for autonomy. This primary role has to be supported by mutual help support role and that second role is used for neighbourhood help or neighbourhood governance. The public help support role gives public support for the first two roles. This is done by public authorities. The fourth role is cooperative help support. It is similar to the public support, but is not done by public authorities but by public entities, such as associations. This fourth role doesn't need to be restricted to the region but can be carried out globally by using ICT.

There are four actors that can take over these four roles: citizens, regions and communities, public authorities and associations (public or private entity) who provides public services based on funds or member fees

Big data, open data, personal data technology will be applied as regional information or each entity's information and will be used to customize the service of the e-self government entities on a user initiative environment with privacy information protection. This ICT based social environment will be constructed on the top of traditional smart cities, which is social infrastructure.

Through this e-self government ICT environment with four types of public sectors, such as health, education, disaster prevention and the environment, this life support will be provided to the citizens.

KENJI HIROSHIGE, Director London Representative Office, FMMC- Foundation for Multimedia Communications, Japan, presented a platform that demonstrates how ICT can improve public services and promote public safety:

Integrated Public Alert Platform

FMMC is a public-purpose organization and closely collaborating with the Japanese Government. FMMC is also operating the Integrated Public Alert Platform. The Integrated Public Alert Platform is a Japanese system to provide emergency information to the public quickly and effectively.

Why do we need the Integrated Public Alert Platform? In the event of an emergency, such as natural or man-made disasters, an efficient method for communications is crucial. We have to quickly provide information to the public and afterwards quickly update this information. ICT is rapidly progressing and offers the opportunity of improving public assistance.

In the old model, information senders and receivers have to create many one-to-one communication systems. This results in considerable costs and significant inefficiency.

The new model is much more sophisticated. Here, the platform centralizes the exchange of information. The platform gathers the information from the senders and then transmits the information simultaneously to the receivers. In 2008, fast trial systems have been created and in 2011, practical services started.

As regards the function and operation of the Integrated Public Alert Platform, there are sources of diverse information or information providers, such as local governments or central governments. In the event of an emergency, these public organizations provide vital information in form of an alert, warning or evacuation instructions.

Servers are connected to each other through a secure network. These servers centralize the exchange of information by collecting the information, changing the data format and transmitting the information.

Information communicators are media companies, such as broadcasters and Internet portals. They receive emergency information from the platform and then transmits the information to local residents through various media. The local residents receive the information through TV, radio and the Internet.

In the case of the recent flood disaster in Japan, the Integrated Public Alert Platform broadcasted that is an imminent thread of river flooding and evacuation order was given. At the same time, information about an evacuation centre, its location, capacity, and vacancy was provided.

There are three groups benefiting from using the platform: The first group are local residents. In the event of an emergency, information is transmitted through many pathways. Therefore local residents, including elderly people, receive accurate information, no matter where they are. The second group to benefit are information providers. E.g., local governments are able to provide emergency information to the public with certainty. In addition, local governments can reduce their information workload. The third group are the information communicators. E.g., if broadcasters connect their systems directly to the platform, they can transmit the information without any delay.

Both, public and private sector are playing important roles in this platform and provide better services to citizens. All players can benefit from using this platform.

To conclude, ICT provides powerful tools for transmitting the information to the public in the event of an emergency. The Integrated Public Alert Platform has been created and is now working in Japan.

HANNE MELIN, Policy Strategy Counsel, eBay Inc. Public Policy Lab EMEA, Belgium, took a slightly different approach to innovative public sector than the speakers before, by discussing some ideas around how to innovate in the very creation and application of public policy.

Policy Innovation through Collaboration – Iteration - Data

The companies that make up ebay inc offer all services and solutions for commerce and payment, for individuals, small businesses, large mergers and premium brands. Services that are based on an agile application of technology innovation. And as such, all these companies form part of the wave of industry innovation that is changing almost any sector, whether it is payment, retail, healthcare, travel or music. This wave of change is also challenging public policy – public policy creation, processes and application.

First, take the fact that computers double in power every other year. How to plan for that? Second, there are now companies entering traditional markets, but they leverage the Internet and they look nothing like the traditional bank or taxi provider. And third, the emergence of completely new things, such as robots or 3D printing. So, it is very much a world in flux and the lesson to draw from these trends is that how something looks is less interesting. Function matters – what that something does. Innovative policy making takes that lesson into account.

Against this background, ebay's suggestion to this end is being presented in a paper just launched by ebay in the US and Asia. ebay proposes a shift towards "dynamic performance standards", as opposed to the more traditional design standards. Regulation based on design standards specifies how an entity should achieve compliance. Performance standards specify an outcome and then leave the measure to the entity.

Performance standards are nothing new, but the model hasn't yet worked in practice, because we lacked the ability and the technological know-how to measure, monitor and iterate on standards. But today, we are in a different place. We are better equipped to acquire data, store data, design algorithms to analyse data etc. And we can use that to improve the way public sector provides services. But we can also use it to improve the way public policy is created and implemented. To do so, we need to put some basics in place.

First, there is the need for the right mindset. We need also a public policy to embrace uncertainty, to learn to proceed more on a trial and error basis. And that requires, second, iteration and collaboration. We need a mechanism that basically allows us to not get it right in the first time. The suggestion of ebay inc is to apply the Boyd Loop, which was designed for fighter pilots to allow them to assess and to adapt to changing environments. This Boyd Loop can be used in public policy, help to become better and faster at observing the situation, making sense of it, using that knowledge to decision, translating decisions into action and the then, to proceed in observing the result of the action.

Efficiently iterating requires effective collaboration. We need to become better at understanding the strengths and weaknesses of the various actors that can form part of the public policy cycle. When are crowds of individuals best at estimating outcome? When do we need experts? What can computers do and when do we need a human touch? We re looking at is the optimal mix of agents, combining the public and the private sector to observe, orient, decide and act. And together, if we get the right mindset and a mechanic for iteration and collaboration, then we have a framework for applying big data into the regulatory process.

In the paper mentioned above, ebay inc is suggesting a "smart governance model" as point of departure. It is basically a process where the regulator collects relevant data about performance from the market actors, organizes the data, so that the right dots can be connected, uses algorithms to obtain insights and then targets the insights to what is public policy goals. And this type of model can be implemented in several ways: Either the regulator can manage the entire process, which might be impractical due to resource constraints. Or, the regulated entity can manage the process and the regulator takes on either an auditing or oversights role.

We need to think about policy making that allows us to better and more efficiently achieve public policy goals, in a world we are constantly fasting forward, where there is total disruption and where innovative things much faster come to market. That can be achieved if we take the lessons, the mindsets, the mechanisms and the techniques that are right now transforming industry, if we use them for revolutionizing public policy. And the point of departure proposed is "dynamic performance standards" and a "smart governance cycle".

PHILIPPE PERENNEZ, CEO and R&D, Navidis, France, demonstrated how to visualize open data in added value services and how to reinvent the way we live together in offering to cities, citizens and business a digital platform of local and proximity services.

Smart City+
Digital platform of local proximity services

Navidis' vision of a smart city is – just as the one of many other ICT companies - based on different pillars, which are urban planning, digital territory and environment, but where one pillar is added, which is "living together" (therefore the "+"). Living together by providing people with easy interfaces for exchanging on culture, education, tourism, facilitating all citizen initiatives, collaborative, participative exchanges and in offering to the city an application for economic and social development by providing to groups of people services for solidarity and integral development.

Smart City+ is an experimentation taking place in the south-west of Paris together with 9 cities. A number of business services are already available, such as smart grids, smart water networks, and city services like urban planning, territory monitoring, local information directory etc, in order to become now a creator of social innovation by facilitating social interaction between neighbours, between people from the same neighbourhood, in the same city, in the same company, with geo-localized agendas, personal flip boards for accessing information or services offered by others for sharing needs, knowledge and competences.

Realising Smart City+ requires a process of innovative thinking. First, a benchmark of existing and expected services has been carried out. Then, an ethnological analysis has been organized, locally with people, and the uses have been defined together with the people and the professionals from education, culture, tourism, city administration, economic organisations, SMEs etc.

The second round was based on gathering information allowing to manage a creativity session in order to define the different concepts, develop some applications and to run better tests with different users in function of the objectives.

Smart City+ with its interfaces designed for all and running on all devices, like smartphones, tactile tablets, computes and but also on kiosks in the city hall, becomes the citizen's companion. We have the city in our hands. The Smart City+ platform will aggregate Apps and services chosen by people. Smart City+ currently includes real time and interactive 3D applications, the management of open data, big data, user data with respecting Web 2.0 and user generated contents, semantic search engines, citizens relationship management, cloud and tools to create application catalogues.

Smart City+ reinvents the way we live together.

FABIO PEROSSINI, Managing Director Kpeople ltd, United-Kingdom, gave the audience a very informative oversight of a European project which is about social innovation in a non-monetary economy:

CROSS
Citizen Reinforcing Open Smart Synergies

CROSS is a European project running in five nodes, Turin, Rome, Manchester, Budapest and Seville. The aim of this project is to give evidence to what is going on outside the financial flow inside cities. For instance, how to move from the traditional concept of smart cities to the concept of intelligent communities. In this way we are considering all the values that move inside the community not following a financial flow.

The project is focussing on four main areas, which are:

- Mutual service communities for assistance to elderly people;
- Communities for social inclusion of and financial support to families;
- Learning communities for support to school dropouts and low culture people;
- Communities of volunteers assisting persons with disabilities.

The project will look on how citizen help each other in these areas. And what kind of value it should be for the community to have those people exchanging services.

The pilot running in the City of Turin concerns a particular sector of community service, which is not the official one. While official community services often use community funding, this sector has no funding. This is why it is not official. They can operate only by using volunteering services. This is very challenging.

There is a kind of information desk that collects information coming from all kind of volunteer offers and tries to give a direction and objectives to all these offers. It is very interesting to see how much offers one can get. The integration of traditional services provision with non-monetary practices has been recognised as most valuable.

To enlarge the view to this part of the economy, i.e., the non-monetary economy, it is mandatory to have a very good communication. In Turin, the communication is particularly strong in order to give visibility to what is going on and to let to know one citizen what the others are going to do.

We are used to have the GDP as the overall measure of our wellness. In this project, one of the first objectives is to show that there is something else. How technology can work on that? This is a key point. Using a bottom-up approach instead of the traditional top-down approach. Really going in the field, see what is happening and not providing technology with an impact, because when talking with people doing voluntary services, you have no motivation to give them to use your technology. Even a smartphone could be too much. Because you are using their time and they decided to spend their time to help other people.

CROSS will involve in these five pilots at least 300 000 users all across Europe.

ALAN SHARK, Executive Director PTI – Public Technologies Institute; Associate Professor of Practice Rutgers University School of Public Affairs & Administration, USA, gave an excellent presentation on

Smart Data to Help Restore Citizen Trust –
from Theory to Best Practices

Smart city, innovation, big data – these might be contemporarily words used today to be replaced in some years, but they are nevertheless very important!

When it comes to smart cities, we have to take this very seriously: In 2010, 80 percent of all Americans lived in a city. By the year 2050, 90 percent of all Americans will live in a city. 2/3 of all the energy that is going to be consumed in the US will be consumed in cites. When we look at water use, the gold of the future, 60 percent of all the water is being used in cities.

Maybe smart city is a buzzword, because no mayor wants to be the head of a dumb city. They are the great eternal cheerleaders of cites and that is what they do at best. But we have to be smarter at governing. And we have to be much smarter at working in our cites.

In the US, there are 50 000 to 60 000 cities, 3000 counties, 80 000 small units of government. Innovation is really alive and doing very well because the true definition of innovation is “doing things differently”. And this is where we get confused in terms of how we look at innovation. Innovation is not creating something new from scratch. Innovation is doing something different. And when the US started coming out of the great recession in 2009, the country became very innovative because there was a need to do things differently.

PTI is representing cites and counties in the US and is cooperating with other cities throughout the world. The organization also has an aggressive awards and recognition programme that allows to recognize what cities have been doing in very innovative and smart ways.

When thinking about the elements of smart cities, there are six ingredients that make up a smart city: 1) A very smart transportation to get people around. 2) Abundant digital presence to connect things and people 3) Citizen engagement, not just as a goal but making it happen. 4) Smart data – not just big data. Data is like rain, it is everywhere. 5) Data visualization as the killer app to make sense of data. 6) Leadership and vision.

Why are cities are doing this? There is a power with holding data, and now cities are sharing data. The reason is that governments are in a leadership role of trying to be more transparent and open, because otherwise they are loosing the battle of trust with citizens. This is one way of hopefully re-establish that relationship.

Big data must be ultimately lead to better data-driven decisions. In the US, there are about 15 Chief Data Officers, who’s mission is to provide data to the public. The real mission should be, how to take this data and internalise that in government and make better data-based decisions.

Data must be presented in ways that citizens understand and belief.

Mobile Apps are really a perfect vehicle for turning useful data into meaningful applications and to have a better relationship with government.

Some good examples in the US are the cities of New York, Boston or Philadelphia. They have some, not only open data sites that are relatively new, but they also have some incredible Apps that are more than just having people online forms to report garbage that has not been collected. It actually engages with citizens in a very innovative way.

Smart cities is now an imperative with the raising population expectations of citizens. Data is a way to manage cities better. Innovation is a way to do things better and to do things in a different way that makes more sense for the population.

JULIA GLIDDEN, Managing Director 21C Consultancy, United-Kingdom, delivered a great talk on

Kicking-Off a Smart City Platform

Basically, where we are at now is the city as an innovation platform. Cities like New York really are inspirational. What New York is doing, is opening its APIs for creative code development. Creative design, sustainability, volunteerism, collaboration -- these are all the words that come together when conceptualising the city as a platform. The city that doesn't just open its data, but that opens up itself to its single greatest resource, which is not just the citizen as a user of services, and not just the citizen as a creator of services, but the citizen as a critical data source itself. No one knows their local community and what they need and what is happening more than the citizen that live in the community.

Geo-located special data, visualization and sensors – we talk a lot about open data, but what we are not talking enough about and what we will certainly be talking about the years ahead is the Internet of Things, which will become so embedded that it won't even be the term, but the fact that we all are data collectors and this is an invaluable resource for cities.

The three EU projects Citadel on the move, ECIM, and Open Transport Net provide one potential roadmap for the city as an innovation platform. The communality in EU projects through the last three years has been open data, and a project like Citadel to help cities open that data and making it easier for people use it.

And then some lessons learnt: Simply opening the data, or simply assuming that people or business will use it, is not enough, it needs more. Simply creating smart city applications -- how many times do we reinvent the wheel? There are great applications in cities all over the world, but there is not that common platform for cities to smartly leverage and reuse what they have created.

The ECIM project is building on a project called Epic, which was designed to create an App store for cities to enable cities to easily procure, download and pay for something that will work, and just needs some customisation to make it work for this particular city. The challenges in Epic is that just putting a bunch of applications on the web isn't probably good enough, unless you are engaging public and private data and really pulling it together in areas that are critical. Bringing together public and private transport data, and stimulate people to create the application is something, at is winning. There is a need to go the next step in smart city thinking and to motivate and engage the private sector SMEs.

Open Transport Net is going to create virtual incubators with three categories of users: 1) discoverers, people that just want to find out what exists, and 2) sponsors, which are cities and businesses that have business problems and would be willing to pay some money to have 3) innovators, which could be SMEs, citizens, larger businesses actually solve that

problem – in a sense, creating an ecosystem in terms of buying services, finding and paying for services. What is really missing in the open data debate is the ability to motivate these stakeholders and user to open innovation in a way that makes our cities smarter.

--- ✦✦✦ ---

Q&A

An elected official from a medium sized Canadian city explained that the city he is working for has just been legislated to have open data. A high level of government has decided to go for open data, but the city is not doing anything about this right now. The reasoning of the city is that it spent a lot of money gathering this data. It costs a lot of money. Why should the city allow other people to re-purpose this data and make money from it? Everyone else would profit from this, how will the city profit? The other question is that one is always told about all the good things that come out of open data, but what if it is not good what is coming out but is actually for ill? One of the reasons why this city is holding on to its data tightly is because it is not so certain that there is a benefit and in fact, there might be some bad things that come out of the release of the information leaving the city vulnerable in the future.

Julia Glidden, 21C Consultancy, stressed that citizen paid for that data through their taxes. The error of civil servants sitting in their room, deciding what the problem is, then defining the solution, then creating the solution and putting it out there, the same time that Nike is opening its website, and Coca Cola is opening its website and people are co-creating with all of these companies Starbucks to improve their coffee, and towns sit and know better than their citizens, that data is over. The single greatest resource a public official has are the citizens. And these tools are unleashing immense potential to work with the city to co-create. Does this mean that there aren't occasional misuses of data? We are always shooting against that thing that could go wrong. We are closing the door to the tremendous power that we have to create things that can go well. It is a question of trusting people to know what is best for them. This does not mean that every medical record or salaries should be out there.

It is a hard enough job running a city, than to expect the city to spend a time trying to anticipate those levels of innovation and those levels of city needs. One thing we can learn in public policy is, generally, when the private sector is doing something, it is because there is good for it in it. Cities like Boston or New York, that have not just opened their data but their APIs, have created tremendous innovative applications, that no one could have thought of. And then, against the background of scarce resources, it is cheaper.

Alain Shark, PTI, accentuated that it is important to separate Personally Identifiable Information (PII) and provided two examples: During a Montgomery open data event, the only question the press wanted to hear was the salaries. And even worse, internal discussions started about how it comes that this or that person is earning more. It just didn't work. The second example is the City of Philadelphia, where they made public everyone who owns a gun. That was PII and people felt, that was wrong. It is advisable to stay away from PII, but to get into trends and usage and other kinds of data and maybe property records. However, this question is not a technology issue, it is a policy issue and does require some good thought.

A statement from a company working with lots of organizations all over the world in a very commercial way: Many companies do a better job of producing better products by going to their customers. Once they produced products, evaluate customer satisfaction, which most companies do, they find that that helps them to innovate even new or better products or make their products more usable. This is a business context. They pay a lot of money for customer satisfaction studies. Do you know any company that don't pay that price? It is important to know that there is a price to be paid for giving customers and our citizens all these data. There may be some pitfalls, but the potential of being better and greater is worth it.

Another statement addressed the question of vulnerability of as city. Vulnerability is that cities are part of a whole landscape, a territory. There is a rural area on which the city depends upon, for food, for water, for energy. There is a rural-urban link, that needs to be considered as part of the framework to address how to use the open data in a territorial sort of explicit geographic reference in order to begin to understand the long-term sustainability of cities.

Troy Nachtigall, ISIA Firenze, added that one reason cities would want to open its data as well is that companies like Google are starting to create their own data bases of exactly the same things that are usually collected on a municipal level. And as they collect that data, there are big private data bases that only they have access to. In opening their data, cities have the opportunity to have a conversation with these companies and to build with them in that process, instead of being locked out or having that data sold back to them. These companies collect more granular data cities can ever possibility generate and there is an interest in having this conversation and to have that partnership with them.

The next question was addressed to ebay. What does ebay think about a fair exchange of information between public and private sector?

Hanne Melin, eBay Inc, confirmed that ebay is supporting the idea that one could and should use data from market actors to inform public policy and regulation.

As regards forms for collaboration, an example could be the payment sector, where you would bring together experts from companies, regulators, from governments who together are trying to identify and understand what sort of data points can help validate which different public policy objectives. There is a potential and the ability to collect huge amounts of different data points today. Within that lies the opportunity and the challenge to figure out what these data points can validate in terms of public policy objectives. If you take, for example within payments, something called "know your customers", where the bank needs to verify and validate the customer. For traditional banks this is done face to face. In a data rich and electronic and mobile payment world, that doesn't work anymore. There are data points that will validate a customer much more efficiently and securely than people going in bank and showing their passport. E.g., data points could be in a person's social graph.

A speaker from the audience addressed the question why municipalities should open their data and what is the benefit: Municipalities are obliged to do that because they are paid by the tax payers. They are giving that data, which is collected with the help of tax revenues, back to the citizens. By opening their data, they are supporting the digital economy, the creation of start-ups or support enhancing existing companies and creating new services. They support employment and foster economic development, which, at the end of the day, leads to increased tax revenues.

Another side-effect of opening data is an additional quality assurance due to the feedback on the data opened. Once data are open, citizen can see and validate the data. The danger occurs when data are not filtered properly and when data are opened which should not be considered open data.

Ching-Chih Liao, Taichung City Government, added that Taichung created a GIS system in the city and charges a very very small amount of money to private companies to buy the collected data. Then, they can make good use of the information and provide added value services for the citizens.

--- ✦✦✦ ---

Cybersecurity Issues: Organisation's Incident Management

SÉBASTIEN HÉON, Director Public Affairs Cassidian CyberSecurity, France, [www.cassidian.com], chairing and moderating the session, opened the session by stressing that technology is deeply involved in tackling cyber security issues, but it is not the only approach to be developed in order to handle our day-to-day cyber security questions.

The goal of this session is to provide a vision of different aspects related cyber security. It will start with geopolitics and the approach of understanding cyberspace as a territory, over legal aspects, the question of how to prosecute cyber criminals, and the issue of analysing the risks posed by the cyber space, up to solutions to tackle cyber problems.

FREDERICK DOUZET, Professor & Associate Director French Institute of Geopolitics, University of Paris 8; Castex Chair of Cyberstrategy (IHEDN/EADS), France, discussed the question of how much a surveillance programme can impact trust and shape the digital future. Many states try to gain control of their Internet and the question is, whether extensive surveillance can create an incentive for reinforcing national barriers in order to protect sovereignty of nations, whether it is tariffs or technical control of the Internet or governance.

As Napoleon was saying, the politics of states is in their geography. Yves Lacoste would say, geography's primary purpose is to wage wars. There is economic warfare going on through networks, where we can see that the economic interests are more and more intertwined with national interests. We see conflicts of economic power, defence, strategic advantages, diplomacy of influence going all around the Internet -- and the question is, how to use geography and geopolitics to understand these conflicts and, since we are taking about Cybersecurity, where the threats come from?

Using geography to deal with cyberspace is not easy because in geography and geopolitics the territory is at the heart of the analysis. Cyberspace is not a territory, but most conflicts don't happen just in cyber, they are the product of competition and conflicts that happen on physical territories, but cyber is becoming part of most conflicts, including military operations.

Second, cyberspace is based on a physical infrastructure that can be located and that can matter in power relationship between different actors. There is a lot of data and information that can be geo-coded. There might even be territories in cyberspaces, there might be cultural and linguistic enclaves, political enclaves, there might be Blogs of alliances that emerge and that matter in a dynamic of competition or open conflict. And one could even argue that even though cyberspace is not a territory from a geographical perspective —and is not a natural domain since everything that happens is the result of human action— it is the *representation* of a territory that emerged for two radically different reasons: It first emerged in the discourses of the pioneers of the Internet as an independent space that should have no regulation at all, and then, it came back in the discourses of nation sates as a space to control and regulate in order to protect their sovereignty and even increase their power.

Geopolitics is the study of conflicts of powers over territories. It is a multidisciplinary approach that takes into consideration the representation of actors in order to understand their strategies. There are a multitude of actors in cyberspace but states deserve specific attention.

Cyber security does a good job for stopping and deterring attacks that are mostly opportunistic attacks and that can move to another target if it becomes too hard to get into the system. But stopping targeted advanced attacks is very difficult and the actors in cyberspace that have the greatest power to launch these attacks are nation states.

How to use geopolitics to better understand the strategies actors in cyberspace and potential threats? These issues are usually studied in three different boxes: one is about information power and the art of war, another box is the perception of actors and another one is the cartography of cyber space, usually disconnected from the physical territory. Geopolitics is used to link these different aspects and uses cartography as a major tool of analysis. Maps help to visually link information of different nature in order to explain the dynamics and complexity of a situation, explain a strategy or maybe give a more complete picture of a theatre of operation. The challenge with cyberconflicts and cyberthreats is to include the cyberdimension into an innovative cartography, in order to explain the geopolitical context and dynamics of these conflicts.

A case study of the representation of the Russian Internet has been carried out in order to show the different territories that might exist in cyberspace. The Russians have a name for their Internet: RuNet – Russian Internet. The fact that they have a name for it shows that there is a kind of identity behind. With regard to the languages used, over 2/3 of the content on the Internet for Russia and its nearer broad is in Russian. That creates some kind of linguistic, cultural and identity space, that the Russians called the RuNet and that can be interesting to understand, maybe as a factor to explain some patriot hackers, mobilisation in the context of rivalries with Estonia or Georgia.

If looking at the percentage of connectivity and the level of dependency of the former Soviet Union to Russian connectivity through their network Rostelecom, one can see that - except for Ukraine and Georgia - most of the countries still have a very high connectivity from Rostelecom, including in the Baltic countries (which is still between 60 and 80 percent of dependency).

The evolution of the physical network since 1991 shows the strategy of Russia to develop a “sovereign” network by maintaining a high level of independency, starting originally with the unique digital connection as a “window to the outside world” and the representation of a bridge from Europe to Asia by avoiding going through Eastern Europe to get connectivity.

These few maps illustrate how geopolitics and cartography can help understand the geopolitical context and dynamics of cyberconflicts and cyberthreats. This multidisciplinary approach is developing through collaborations with computer scientists, to give a broader picture of the context in a global security perspective.

PAUL WORMELI, Executive Director Emeritus Integrated Justice Information Systems Institute - IJIS ; Innovation Strategist, Wormeli Consulting, LLC, USA, presented an ambitious initiative that has been launched recently to deal with cyber crime.

Threats from the ether

The IJIS Institute is an non-profit organization. It is a consortium of 160 companies who are working to improve information sharing, particularly in the law enforcement and intelligence world. One of the realizations IJIS comes to in the last year is that the greatest challenge to the success of IT and improving information sharing probably lies with this threat that we all face, whether we are in government or industry, from the ether – as described in various ways as cyber threats or cyber crime or cyber attacks. IJIS has began an initiative to try to understand the nature of this challenge.

The real important thing to ask has been to understand the time phasing of the cyberspace threat. It is in three dimensions: The first one is the change in hackers –from hackers to more sophisticated actors. When going back 10 years and think about the kinds of attacks that were being made, they were pretty amateurish attempts. There were smart hackers who got into a system and put nonsense messages in it. Over the last 10 years there was an explosion in political hackers, hacktivists, criminals, nations states etc. who have taken property and done things much beyond the nonsense level. What is the challenge facing us, fast forward 10 years? It will be the actors of today plus – assuming that the next war is likely to be based on cyber warfare - armies fighting over the Internet, corporations starting to use more Internet methods to steal Intellectual Property. Organized crime has already began a penetration of this whole space in many freighting ways. International cartels begun to use the Internet for selling cocaine and other drugs. The future actors are much more sophisticated and much more capable than the one that we find today.

The second dimension of the consequences of the cyberspace thread, going from the nonsense level 10 years ago now to a point where we have this continuous disorder of service and denial-of-service attacks, espionage between nation states, extensive fraud throughout the world, Intellectual Property theft, financial theft, and destruction as recognised in the Saudi Aramco destruction of 30 000 computers not too long ago. In the future, there will be more of this, plus extended protected criminal collaboration using the anonymous portions of the Web, which became well known recently with Thor and other capabilities that keep the rest of the world from knowing who is even doing this. We are going to see the consequences of cyber war including the destruction of systems. Political manipulations of everything, from voting fraud to influencing the outcomes of elections, to global terrorism on a scale we can't even imagine at this point. This is only ten years away from now.

And the frequency of attack is increasing! 10 years ago, there were weekly attacks by hackers. Today, both government and industry systems are attacked thousand of times per day. We are coming up to the point where we have continuous real time attacks and daily bombardment of fraud. It is also becoming more interactive as attackers start using names of our colleagues and friends and our email to submit these fraudulent things.

Robert Mueller, former director of the FBI, said not too long ago that in the soon coming future cyber threat will pose the number one threat to the US and the FBI and it will be the number one activity of the FBI to fight cyber crime. It is growing at enormous rates. What bothers most people in the US is the so-called APT Advanced Persistent Threat, a combination of social engineering and technology, where the tricking of people to reveal their personal identity, information or passwords is combined with a technology where

long-term persistent capability to penetrate a system is put in place and exercised whenever the time comes.

This is the major thread that is facing a lot of government agencies in the US and throughout the world. It is extremely important to create a service oriented framework for dealing with cyber security to combine all the various aspects of how to control the identity and access of users to managing the sensitive data, to creating application security and to creating a service oriented architecture for cyber security covering all these basis with the layers of understanding, what is the operational picture and what are the services that an organization, industry or government, needs to deal with it. There exist a lot of models, frameworks that have been developed, as well as selections of activities that have been part of any complete solution to cyber security.

MICHEL TOPORKOFF, Attorney at Law, Toporkoff Law Firm, France, provided a most interesting overview on

Cybersecurity: Recent French Courts Cases

What happened since January 2013 in terms of cyber attacks? There are only three cases of real cyber attacks.

The French law is rather satisfying: if you do that sort of things, you can go to jail – in the worst case up to 7 years: Unlawful introduction on a computer system or fraudulent alteration (or suppression) of data thereon is punishable by imprisonment of (up to) 5 years and a fine of 75 000 euros. If a State-operated computer system running personal data was involved: (up to) 7 years of imprisonment and a fine of 100 000 euros.

The question is, what happens in reality?

The first case is the Floyed Landis hacking case: A sub-contractor of EDF (the French electricity incumbent) was hacking a Greenpeace computer system. This was discovered by OCLCTIC (the French Central Office for the Fight Against Crime Linked to Information Technology and Communication) by pure accident: while investigating on an illegal access on the computer system of AFLD (the French Anti-Doping Agency), they went to cycle runner Floyd Landis, who had been using a person in Morocco hacking not only AFLD but also Greenpeace (who did not know being hacked). The investigators obtained a “commission rogatoire internationale” (international cooperation) with Morocco and also discovered that this same person was also hacking an attorney in Paris.

The person was sued and the first judge said, that Greenpaece was being hacked directly by Greenpeace for atomic power problems, but they considered that EDF was behind it. Thus the first degree of judgement sentenced two EDF employees to jail (3 years with 24 month on probation) and EDF got a fine of 1.5 million euros to pay for unlawful access.

In February this year, the court of appeal overturned this judgment and sentenced one EDF employee (working in the nuclear safety department) to 6 months of imprisonment but neither his superior nor the subcontractor (because of lack of proof of EDF giving orders to commit unlawful actions). The EDF employee and the subcontractor were also sentenced to damages (15 000 euros).

What conclusions can be drawn from this? The major factors of success in locating the source of unlawful access have been the good international cooperation between the French and the Moroccan authorities and the good work done by OCLCTIC. However, less satisfactory and major problems for courts are questions such as: Who orders? Who wants the hacking to take place? Who is responsible, when no written orders appear to have been issued? What when orders may be implicit? What when the employee or sub-contractor is only trying to please his/her manager (or client)? What when the (large) customer gives a great freedom of action to its sub-contractor? Is the customer not liable for what the sub-contractor does?

The second case is about the big online shoe seller Sarenza. Sarenza's access codes to its customer database (including 4.7 million mail addresses) had been supplied to a third party (NA2J) by one of its employees, who gave NA2J the login account and the pass word of her manager. NA2J used it for its own needs but also sold it to other corporations (Vivaki). In February this year, the employee was fined. But again, how to proof evidence? How to proof the damage? The damage amount was estimated by the Court at 100000 euro, but the award is reduced by 30000 euros as the Court found Sarenza to have been negligent in not taking the appropriate safety measures to protect its database. The login and password of the employee's manager were also used by 4 other persons. Morover, the Court found that Vivaki should have been alerted by the very low price it paid for the database and should accordingly have wondered about the legality of the transaction. NA2J is now bankrupt – thus, Vivaki has to pay the whole amount.

The third case, concerns unlawful use of a data base: the data base of a real estate group of companies has been fraudulently used by the founder of the group (while selling its company which was a member of such group) for its new totally independent company. The seller was sentenced to damages amounting to 50 000 euros for "unfair practices".

To conclude, there are very few "criminal" cases and many cyber attacks remain unknown. French courts seem to feel rather uneasy about who to punish and about the appropriate punishment, because it is so difficult to provide evidence. However, everyone is trying to lean and to improve. It must be a mutual education between the judges and the attorneys. There must be more explanation for the judges. The task will be to provide education on the cases to the judges.

NAGAAKI OHYAMA, Professor Tokyo Institute of Technology, Imaging Science and Engineering Laboratory, Japan, detailed, as many people worry about privacy, how Japan is going to take strong measures to protect privacy:

Introduction of new ID number in Japan

Japan has a population of about 130 million people and is rapidly facing an aging society. Expense is increasing in the area of social security, such as welfare, medical insurance and aging insurance. There is a need to balance revenue and expenditure at national level. Expenditure in social security is more than 400 billion US dollar per year and still increasing. Revenues might be increased, if a more effective scheme to collect taxes is introduced. In 1983, the Japanese Government tried to introduce a personal ID number in the taxation area, but failed.

30 years later, a new personal ID number will be introduced. In order to balance revenue and social security expenditure, a new ID number exclusively used in taxation and social security

areas was proposed to be introduced in 2012. The new regulation “My number act” was approved by the parliament on 24 May 2013. Based on this act, every resident in Japan will receive his/her personal ID number on 1 October 2015 by mail. It is forbidden to use the new ID number in health, medical and aging care fields, which deal with most sensitive privacy data referring to body conditions. The new ID card – a smart card - will be issued from 1 January 2016.

Because “the new ID number” will be widely used in Japan, additional risks to invade the privacy are defined, and the following five actions will be taken as counter measures: 1) Privacy data together with the ID number or link code is defined as specific privacy data (SPD) in the new act. 2) SPDs are protected by the regulation more strongly than other privacy data that does not include ID numbers, due to social acceptance reasons. 3) The use of the new ID number is strictly regulated: it can be used only in the areas of taxation and social security. 4) Personal data could be received from other organizations only in those cases explicitly stated in the new regulation (116 administrative works are listed in the regulation). 5) A third party committee will be officially established to reinforce privacy protection, especially specific privacy data (SPD).

Because of much respect to the social acceptance, the link system is designed to meet the following system requirements: The use of link codes and go-between system. No additional matching key after providing specific private data from one to the other. “My portal” for the visualization of every access log of the privacy data. All administrative processes referred by the regulation will be listed in white in order to keep the transparency about every personal data exchange among organizations networked to the link system. The new e-ID card will be issued for a secure access to the “my portal” and to avoid falsification of printed information such as my number, facial photo, etc.

Three major functions are supported by the core system : 1) Conversion of the link codes and bi-directional transformation function. 2) Access control through the link system: Compliance with the new regulation and evidence of the permission to receive personal data from other organizations and agencies. 116 administrative work flows on the white list. 3) Storage of access log. People could check all accesses to their own personal data through my portal with the new e-ID card. Access log includes information about why, when, which information, which organizations to and from. It only deals with unrecognisable personal number in order to prevent internal crime and damages caused by privacy data leakage.

The new e-ID card (my number card) will be issued from 1 January 2016. Together with my number act, resident registration and JPKI acts have been revised and authorized. The JPKI act will come into force on 1 January 2016. The new e-ID card will support both digital signature (non-repudiation) and personal authentication services. The new e-ID card will have facial photo. My number is printed on the backside of the e-ID card with copy protection.

To conclude, the new ID number for taxation and social security areas will be introduced from 1 October 2015. The link system is designed to provide a very high security function. Link code and unidentifiable personal number realize an effective measure against internal crime, hardly done by the conventional access control scheme (ID/ Password, Smart card, PKI). My number card will be issued from 1 January 2016. Applications of my number card in both public and private sectors are based on the card holder’s consent.

EMMANUEL HARRAR, Partner Dreyfus & Associés, France, addressed the topic of

How to protect Intellectual Property Rights in the new gTLDs?

A gTLD is a generic Top Level Domain with the most famous one being ".COM". Other gTLDs are .org, .jobs, .net, etc. or country code TLDs, such as .it, .de, or .us.

The number of TLDs is limited. As of today, there are less than 300 TLDs, both generic and country code TLDs included. In 2008, ICANN proposed to introduce new gTLDs. The idea of ICANN was to open the root of the Internet and to introduce hundreds of new gTLDs to increase competition and choice in the domain name space. The basic issue with domain names is that most of the interesting domain names are already registered. The revolution in this process was that applicants would be able to choose the gTLD they want to operate.

The programme was launched on 13 June 2012 and the number of applications was beyond all expectations.

The success was much broader than expected: There were 1930 applications targeting 1409 unique strings (instead of the 500 expected by ICANN). A first analysis showed that there are 3 categories of gTLDS: 40 percent applied for brand names. Major companies applied for their brand, e.g., .bmw, .cartier, .clubmed, .mcdonalds, .sony. 40 percent applied for generic terms, such as .art, .bank, .music, .phone, .shop, .tennis. 10 percent of the applications were for geographic terms, e/g., .paris, .berlin, .nyc. The remaining 10 percent concern no specific category.

Some famous non-candidates are Coca Cola, Facebook, or Mercedes. In the automotive industry, almost all companies applied for a dot-brand, except Mercedes and the French companies. There were also some disputes (13 applications for .app). There has also been a dispute between the German Merck KGaA (merck.de) and the US Merck & Co., Inc (merck.com) for .merck. Moreover, .amazon has been blocked by the veto of governments and a few brand owners wanted to operate generic terms for their exclusive use.

The Internet of tomorrow will be a battle of giants. Google submitted 101 applications. This is an offensive strategy in front of Facebook to preserve the "entry point" domain name, URL, etc., and the associated search. Amazon submitted 76 applications. Here, the objective is probably to target the whole eCommerce system, from the search to the final purchase.

We are also about to see the birth of new Internet giants: A company called Donuts submitted 307 applications for generic terms. TLDH submitted 70 applications for generic terms, Domain Ventures Partners submitted 60 applications for generic terms and Uniregistry submitted 54 applications for generic terms.

There are only 120 million domain names registered in .com/.net and over 250 domain names in all TLDs today.

New gTLDS are the revolution of the Internet and will probably be the Internet 3.0. The old gTLDs are meaningless – e.g., ".com" used to mean "commercial" at the beginning, but doesn't mean anything today. The new gTLDs have a meaning and will probably completely change the way we use the Internet.

The new domain names directly impact Search Engine Optimisation and eCommerce. For example, Google's applications include .search, .google, .android, .youtube, .chrome and many more. Amazon's applications include: .app, .cloud, .free, .game, .kindle, .search, .zappos etc. Some economic sectors will be first in line, such as .hotel, .tires, .book. For instance, hotel booking is done to a large extend via the Internet and the company being in charge of ".hotel" will probably have a competitive advantage.

New gTLDs also means new risks – technical, legal and business risks. Multiplying the number of TLDs means multiplying the number of domain names. Around 1300 new TLDs will be activated in the coming 12 to 18 months. Furthermore, it represents a main challenge for Internet stability and resilience. The first risk identified is domain name collision. First decision to mitigate the risks will be for ICANN to stop the delegation of .corp and .home.

In terms of legal risks, there will be an increase of existing infringements, such as cybersquatting, counterfeitin or phishing, but also dilution of responsibilities because registry operators are located all around the world. Moreover, the risk of seizure of domain names will increase (currently applied only in the USA). In terms of business risks, new gTLDs increase the risk of low ranking for domain names in .com, the risk of loss of brand awareness on search engines and the risk of loss of income.

SÉBASTIEN HÉON, Director Public Affairs Cassidian CyberSecurity, France, [www.cassidian.com], provided an impressing overview on the

Cyber Crisis Management Handbook

Corresponding to an UK government enquiry, in 2013, more than 78 percent of large organizations were attacked in the UK. This is an increase of 5 percent compared to 2012. Interestingly, only 20 percent of those attacked organizations detected this. A huge majority of attacked organizations didn't even notice that they were under cyber attack.

Another interesting figure is that only 31 percent of the companies responding to the UK government enquiry said that they do not evaluate the effectiveness of their cyber security expenditure. They are just spending money and hope that this will solve the problems. The targets of cyber attacks are always the same: IPRs, R&D etc., ongoing commercial negotiations, and emails of VIPs.

The lessons learnt on espionage cases: First of all, the average number of days between the start and the detection of an attack is 371 days. This means, more than a year passes by before an organization realizes that it is attacked. There are "five stages of grief" when an organization faces a cyber attack: 1) Denial: "you're mistaken". 2) Anger: "How dare they attack me?". 3) Bargaining: "Is it really a problem?". 4) Depression, which is usually not a long stage. 5) Acceptance: "What can we do?"

Usually, the internal IT Security teams of an organization that is under attack are in an awkward situation because every body blames them for not having done their job properly. Consequently, companies like Cassidian are not always welcome. Another important issue is the lack of operational procedures and it is not clear who is responsible for what in terms of security.

In order to recover, it is necessary to analyse and to understand what is going on. This means about 3 months of work to track the attacker, analyse its tools and its modus operandi. Then, making all the forensics to backtrack to “patient 0”, the initial computer that has been targeted.

Once everything has been fully understand, there will be one week-end to neutralize. Not too soon, otherwise the attacker will hide. During one week-end the network is completely switched of and the rather long recovery phase starts. As attacks are becoming more sophisticated, the recovery phase is more and more time consuming.

To conclude, prevention is usually much cheaper than reaction. Moreover, prevention is predictable, in terms of budgets, planning, etc., reaction is not! And of course, prevention occurs before your secrets has been stolen… The good news is, that solutions exist to avoid cyber crisis – but organization, training, and awareness raising are key.

GISÈLE DUCROT, Casualty and Servicing Client Manager, AXA Matrix Risk Consultant, France, presented the insurers’ point of view on cyber risk mitigation:

Cyber risk prevention approach

The cyber risk is not only technical but strategic risk as well and companies have to deal with it through a very clear risk management strategy.

Risk could be defined by three factors: Firstly, the origin. In the context of cyber, the risk could come from different origins. Secondly, the risk exposure, concerning cyber, this exposure could concern data, tools or companies assets themselves. Thirdly, the consequences of the risk realization, in terms of liability, threat of data, commercial assets, brand awareness, but also business interruption, some of those at the same time. Those impacts could have consequences not only on the operational and technical process, but on financial and management assets as well. That’s why - from a risk management point of view - the cyber risk is very sophisticated to define: It is a multi-causes risk, a multi-factors risk and it could lead to multiple consequences.

For the insurance world, this is a very complicated situation, because the insurance world is culturally careful and the claims of cyber risk realization could have consequences on many insurance silos, such as property coverage, liability or crime coverage. Thus, cyber risk events consequences could cover many sorts of contracts and insurance financial assets. Insurers are not fond of such kind of unconformable situations.

However, the insurance is not the whole framework of the risk management. In fact, it is the end of the risk management process. Upstream of the risk exposure visualization and the financial figures establishment in order to deal with the insurance market ,the companies have to define the risk itself by means of risk identification and risk mapping. Companies then have also to estimate the mitigation means, the efficiency of this mitigation approach and the right ways to improve it.

In this last step, the risk transfer, which is in fact a financial risk transfer, is to go to the insurance market with all these previous elements, i.e., risk identification, risk mitigation and the justification of the risk mitigation.

The insurance market cannot identify clearly the risk exposure of the companies and their own assets without having a clear view of those previous elements. This is why it is very important for the companies to be able to do this sort of risk management process and then to go to the insurance market with the good references and a good assessment of their risk exposure.

FRÉDÉRIC POLYCARPE, Head of International Sales & Programmes Cassidian CyberSecurity, France, [www.cassidian.com], proposed solutions in order to show that cyber crime is not something one has to accept, but something that one can fight and win.

Available Technical Tools and Solutions

A company or a governmental organization is complex by nature: It means different business units in different countries, different activities, different regulations – both national and by sector, different cultures, unaligned security initiatives and projects and last but not least untrained employees, including acquisition officers.

How to implement a structured and efficient cyber security framework in such a complex environment? There are several questions with regards to security policy: Do we have a security policy at a proper level? Cross-country? Because there are no borders for attackers. Are we all inline in the company regarding different regulations and different levels of confidentiality? Do we manage our security products properly? Do we configure them properly? Are they located at the right place in our IT network? Do we have the expertise? Do we have enough time and the right team to manage this cyber threat?

Attackers are motivated by money or by ideology and they have very clear targets. Regarding big companies they aim at having executive board decisions, strategy plans and projects, sales targets and processes. Furthermore, they are very well informed trough social engineering methods. They use tools of IT administration. They know perfectly the new standard IT security products of the market and they know very well how to bypass these standard security equipment. They develop and customize their own tools. Public security products are not available to protect an organization's IT – they need to be customized. Attackers have a budget, but they need far less budget than you to attack. They have time, and they have time to try hundreds of times to succeed in attacking an organization's IT network. Very often they use very simple means because organizations forget to protect themselves.

EADS, for instance, is a company that is constantly attacked. The idea for EADS was to set up a consistent cyber security master plan to protect its premises and its network. That implied to set up cyber training courses and even led to the creation of a cyber training academy. The master plan had to be consistent and able to cover all divisions, all countries and all different regulations.

Time is essential. Cyber security is not only a technical problem, but a balance between technology, people and processes. People are at the very heart of the problem. There are tools to detect and to investigate, but it is important to detect without being detected, otherwise the attackers will change their strategy to attack. And it is important to have tools to understand and to decide in order to take the right decision at the right moment.
In order to be able to anticipate problems, it is also important to capitalize knowledge through databases and to have processes that are interlinked within the organization and different persons in charge of the company.

Moreover, people need to be trained and educated. Processes are a key element. Processes always need to be customized regarding a company's business activity, which means that the implementation of the tools must be in line with the architecture of the organization, which implies also to adapt the processes to the organizations. It is a consulting approach.

It is important to have a comprehensive approach including risk assessment in order to evaluate the technical needs and develop an implementation plan to streamline deployment processes and rationalize investments.

Network operational centres evolve to a cyber defence centres. A cyber defence centre means to detect, investigate and remedy critical incidents, to share intelligence and to have a continuous security improvement cycle. The target is to understand operational impacts and to take the appropriate decisions quickly.

Three key elements to conclude: More than one year between infiltration of attackers and detection, focus on cyber defend solutions and the blackout of your IT network is not possible.

--- ✦✦✦ ---

Q&A

The first questioner wanted to know whether there is privacy law for cyber security in China?

A representative from China pointed out that there is now privacy law in China yet, but a number of regulation policies had addressed the issue. Moreover, several regulations that came out as industry guidelines at the end of last year and early this year address privacy issues. Privacy regulation is improving, however, this kind of new rules can have two sides: The China operation of Dun & Bradstreet was recently shut down due to the new rules that came out. D&B were accused of gathering public information without appropriate privacy protection.

The next question was about whether there is an issue in terms of the lack of any international rules that affects the cyber security world? Cooperation between countries in terms of affecting the laws etc. Is that something having an impact on cyber security issues?

Frederick Douzet, University of Paris, explained that there are some issues regarding different types of threads between the US and China. China claims not to violate any rules because there are no rules, while the US argued to spy for security purposes, whereas China spies for economic intelligence. However, during the discussions between China and the US in June, both agreed on the need to write the rules. However, there are many questions left and unanswered, especially when looking at the field of when does a cyber attack can possibly become an act of war? There are attempts to discuss this issue as well as the question of how to apply international law to cyber, but today these questions remain unanswered.

The questioner specified the question by giving the example of the issues arising with the 1800 numbers in the US which just moved outside the US to continued the fraud. Could this happen in the cyber world as well?

Paul Wormeli, Integrated Justice Information Systems Institute –IJIS, stressed that one of the impediments to a better global understanding of our threads and our ability to deal with it more effectively is not so much the conflict of laws, but it's a lack of standards for sharing information about the threat. We haven't really figured out how come up with a common reporting of attacks in a way that shares the intelligence among nations about the nature of the attacks and whether they are coming from nation states or criminal activities. Putting this together in some kind of international collection of threat analysis is done in a spotty way without any real international coordination.

Another question concerned the solution presented by Prof. Ohyama. Is this kind of solution very specific to a country or is there space for collaboration?

Nagaaki Ohyama, Tokyo Institute of Technology, answered that discussions with the Korean Government started, because they are using the conventional scheme and have problems with the protection of private data.

The last question addressed the issue of cyber bullying, which is a big problem in Italy.

Sébastien Héon, Cassidian, mentioned the case of France, where there has been an extensive programme to train policemen, not to become exerts, but to handle cyber cases. When a person is coming to the police station because someone has stolen his or her ID, the policemen at least know how to handle the case and who is the adequate person to transfer the case to be treated. This was one of the weak points in the organization. The massive training programme started 6 months ago and will last 2 or 3 years.

--- ✦✦✦ ---

Public Policy Frameworks for Converging Digital Future

The session's **chair** and **moderator**, **ANDREW D. LIPMAN, Partner and Head of Telecom Group, Bingham McCutchen**, USA, welcomed the participants and opened this 22nd public policy panel.

The common theme of this session is public policy, which cuts across all other panels. It is interesting going through the public policy panels over prior Global Forums, because each year the discussion becomes more sophisticated and more advanced. It is particularly interesting, some of the earlier panels even were talking about the threshold issue "should there be competition". Other questions are routine and continuing evolving: What is the proper role of government? Is there enough spectrum? How to create increased competition? How to provide opportunities for new entrance? How to ensure that there aren't barriers to entry? How to engage and assess the right role of government? Dispute resolution. What role does video play in all this? And of course, convergence.

FIONA TAYLOR, Director of European Affairs & Global Internet Strategy Verizon, Belgium, [www.verizon.com], was asked to set the scene and to elaborate on the new market realities as well as the ecosystem including the emergence of data centric serivces:

Let me give you a few figures to set the scene and to look at new market realities. Over the last 20 years, we moved from 350 million internet users to 2.7 billion users - almost 40 percent of the world's population, wireless has grown from 715 million subscribers to 6.8 billion subscribers. Internet video is expected to make up almost 70 percent of all consumer Internet traffic by 2017, video-on-demand traffic will triple and more than half of business data is now stored in the cloud. In terms of investment, when looking at infrastructure investment in the US since 1998, Telcos have invested over 1.2 trillion US dollars in deploying and maintaining state-of-the-art networks. All these elements point to key developments that should guide the policy reflections.

Looking at these new dynamic market realities, the Internet ecosystem consists of an array of players all competing against each other in the same market realities. . These range from broadband providers, such as AT&T or Verizon, content providers, such as Disney, government services, applications, operating systems, consumer electronics. And the consumer is at the centre of the ecosystem.

Lessons to take back from these new realities: The Internet is a powerful engine for growth and jobs. There is a high level of competition on the Internet. There are a large number of players from all sides of the broad ICT community. There are more consumers and customers connected than ever before. There is also a variety of services, devices, increasing choices for consumers, increasing bandwidth demand – but more importantly, it is a complex interdependent system and all players stand to benefit from it.

Mrs Taylor was then asked whether the regulatory environment should be incremental based on that changing reality or should we looking at a new paradigm?

Mrs Taylor stressed that any regulatory environment needs to reflect 21st century markets realities. With a highly competitive complex environment, there is increasing pressure on revenues and on business transformation. These call for innovation, investment and flexibility.

There are two key factors to bear in mind: First, with regards to the telecoms sector we are facing legacy sector specific regulatory approach mainly for historic reasons, . Second , there is a human tendency to think in incremental terms. If we take a step back and consider the Internet ecosystem, we are no longer talking about “telecom” or “application providers ”, but rather of multiple players competing and offering similar services to the consumer. That answers parts of the question. But what matters is to ask the right questions: Is there anything to regulate? If so, what are we regulating? Why are we regulating it? And who is the best place to regulate? These are the essential questions when it comes to looking at an appropriate policy framework within the new market realities.

We should no longer think in incremental terms. The existing multi-stakeholder model is a very good model, reflecting the specificities of the market, which is highly competitive, innovative and dynamic. Examples from Google or Facebook and how quickly they reached millions of users, show that lifecycles are accelerating. Flexibility is therefore key when considering how to approach the policy framework for the new market realities.

With regard to the evolution to data-centric services, Mrs Taylor was asked about the key policy issues that policy makers should be looking at in the future:

Of course here too investment, innovation, flexibility are key. But building trust is also essential, so security and privacy are crucial. In the area of privacy we face different regulatory approaches depending on the technology. For example in Europe different regimes apply to different providers: the e-Privacy directive applies to e-Communication providers and the framework data protection directive (currently under review) applies horizontally. Is such a distinction still relevant in today’s market realities? This dual approach also brings legal uncertainty as to which provisions apply to what services brining the risk in some cases of seeing additional or even contradictory provisions apply to certain players.

More importantly the benefits of data-centric services derive form scale and the ability to move data across boarders. In this context global interoperability is also essential. However, it would be utopic to believe that we could have the same regulatory approach applying globally. What matters is to ensure the same goals of strong data protection and security based on broad shared principles.

NATAŠA PIRC MUSAR, Information Commissioner, Republic of Slovenia, presented her experience and view on the competencies of the data protection authorities as regulators in the EU. Are they strong enough or do they need to be further strengthened?

Regarding the privacy regulators in the EU, the competencies are very different. The Slovenian Information Commissioner has one of the strongest powers in the EU. The Slovenian Information Commissioner can supervise intelligence agencies, police, basically supervise everybody who is holding data filing systems. But the main difference between the Slovenian Information Commissioner and some of the colleagues in the EU is that the Information Commissioner in Slovenia can issue binding decisions. And people have to obey this decision. Some Information Commissioners in the EU are like ombudsmen – they can issue recommendations, but if nobody is listening to them, their recommendations are just words nobody listens to.

The regulation which is now in the process of being adopted in the European Parliament is not solving all of those problems. From the point of view of the Slovenian Commissioner, the new regulations is going to be very weak. It is going to be weaker than the Slovenian data protection law. But for some of the other Information Commissioners in the EU, the regulation will be stronger.

The problem we are facing in reality right now is cross border of data protection. How to supervise the data which goes outside the EU? One example is cloud computing. In the cloud, there are a lot of personal data and the legal entity which is giving the data is not well aware of the data security there. What about data portability? What about data security in the cloud? Do we know where the cloud is really based? Can we be sure that, when transferring data to a cloud in Europe, that it is not transferred to Bangladesh or India later on, where the servers and staff are cheaper? Who controls this? Part of the human right is that people are entitled to ask and to know where their data is. And if the data controller doesn't know where the data is, that is a problem! Another issue is data portability – what happens when the cloud goes bankrupt? Where will the data go? What happens if a cloud computing service provider decides to raise the price and says, when you won't pay more, you won't get your data back? These are the question the EU is dealing with at the moment and this has to be discussed into the fundaments.

Clouds are divided in public cloud, private clouds, multi-tenancy etc. Public clouds are the ones the EU Information Commissioners are focussing on at the moment, because people freely give their data to public clouds and receive the service for "free". But it is not for free - we pay the public service clouds with our personal data. Personal data can almost be considered as a currency in a modern world of public cloud computing.

Nataša Pirc Musar was then asked about her opinion of the Snowden affair, but also the strength of the EU regarding the NSA collecting:

A special EU-USA commission has been created. There was one meeting in Washington a couple of weeks ago and next meeting will be held in Brussels in 2 weeks.

Edward Snowden is changing the intelligence world and he put the USA into an unusual position: They were constantly denying that something like that is going on, but now there are a lot of proofs that this is happening and the US has to explain – and this is an important change in paradigm. They can not deny it anymore.

However, the biggest problem is the so-called exchange of the data among intelligence agencies. One has to be aware that the USA have access to 95 percent of all the Internet traffic through the transatlantic cables. The huge power is there and therefore an enormous amount of data goes to the service to the NSA. But NSA is constantly claiming not to survey American citizens and not to violate human rights of US citizens – but what about the citizens of other countries?

No single intelligence agency is much different than the NSA. The difference is in the size and the power and in the money they have. The majority of the intelligent agencies are data mining the data and the information on the so-called international telecommunication cables. Within their countries, they are not allowed to violate human rights and the privacy, but if they go to the "open sea" of the Internet, which is not regulated at all, they can gain all the information they want. Slovenia, for example, is a small country and there is a rule that the intelligence agency can wiretap communication on grounds of the court order, but if you go to an international traffic, the law is saying, that only the order of a director intelligence agency is enough. So much lower safeguards.

The next question was about the tools, if any, that EU privacy regulators have in order to curtail what the NSA is doing or curtail what European intelligence agencies are doing:

When discussing transfer of the data outside the EU regulators do not have as much power as they have within the Member States, but one has to be aware of the agreement of Safe Harbor. The Safe Harbor Agreement is the agreement between the US and the EU that all the companies in the US, which are members of Safe Harbor, have to obey EU data protecting rules. However, right now, Google, Facebook, Microsoft are not obeying Safe Harbor rules because they leave an open door to the NSA to gain all the data which is stored on their servers. The debate in the European Parliament is going to be whether the Safe Harbor agreement is still to remain valid or not. The other one is the so-called TFTP agreement. We all remember the SWIFT affair 3 or 4 years ago, when it was discovered all of a sudden, that all SWIFT data goes directly to a treasury department to a mirror server of the NSA. Then, another agreement has been signed between the US and the EU and now this agreement is probably going to be opened again.

Being asked about the biggest challenge in the future for EU data protection authorities, Nataša Pirc Musar answered that one of the biggest challenges is going to be how to internationally supervise what is going on in the open sea of Internet. To compare the open sea law and the Internet law, many years ago maritime lawyers gathered and wrote an open see law. But from 1995, when the Internet was introduced to the general public, people are discussing how to enact the global law of the Internet. No single law was enacted and most probably this will not be something that will be done in the near future. Regulating the Internet is a challenge and will probably not happen in the very near future. Although, from the point of privacy and from the point of law, this will have to happen, otherwise it is just a World Wide West and not a World Wide Web.

JOHN GIUSTI, Head of Spectrum GSMA Association, United-Kingdom, commented on the question of what are the key steps policy makers can take to foster greater convergence:

GSMA is the representative of the mobile ecosystem with over 800 mobile operators and 250 associated members, including vendors. GSMA annually holds the Mobile World Congress in Barcelona.

GSMA is very much focussed on the issues confronting the broader mobile ecosystem. What governments need to do in this changing landscape of growing data and converging services, is to make sure that the right environment is created to foster investment and innovation among the mobile space. We have already seen the benefits that digital can bring to the efficiency of what we do. We have seen it in the digital transition and digital dividend that has been released first in the US and which is now progressing in Europe. We have already seen in the US unprecedented levels of investment and network deployment in LTE, mobile broadband technologies by Verizon and AT&T.

What are the challenges Europe is facing in terms of being able to have the same growing levels in investment and infrastructure? One of the striking realities is the growing rate of video traffic over the Internet in the mobile space. 2012 was the first year that video became more than 60 percent of the traffic of the mobile networks. In the UK, in the past year, video had increased 262 percent. We see growing data demand over the networks. We see growing video being transmitted over the networks. We need to look at what are users experiencing, Are they (especially young users) viewing this in the same way that we historically have looked at different services, whether it be mobile, broadcasting, other services?

What needs to happen when looking to convergence: The government should be one looking to make sure to staying up with data demand. Releasing harmonized spectrum for mobile broadband, both to meet the market needs and the data demand. Also, to assess the cost – there is always a cost when it comes to transmission. We saw that in the digital television transition, both in terms of to broadcasters as well as to TV users. We also need to make sure that the regulatory framework is one that is going to continue to improve investment. One of the advantages the US has had in deploying its LTE networks, has been the certainty in its licensing. There were auctions recently in Austria where people having to bid for the same spectrum they already had and in some cases not getting it, whereas in the US they know that the spectrum they have now, they will be able to continue to use, invest and innovate. Also very important is to make sure how to make more spectrum available, what the challenges are in terms of freeing up the 700 MHz in Europe, and what is the roadmap to going forward – as much certainty everybody can have. That way people can plan, you can make sure that people's needs are being met and that costs are being managed.

John Giusti then addressed the question of the role spectrum management plays in convergence:

It is one of the few very competitive industries, where there is clearly a necessary input to deliver service that comes from a government regulated holding, which is the spectrum.

There is very much a shared agenda between the operators and the governments in terms of making sure to expand connectivity, to have more subscribers, to reach more peoples and more areas. 1) Expanding the base of subscribership to operators and 2) to meeting national or regional broadband goals.

One thing that really needs to be happen is a mutual understanding of each other. The governments' control of the spectrum resource is a necessary input and part of the market dynamic and there need to be a recognition of what challenges the industry are facing. Brussels does understand some of the issues facing the industry, but there is a need for more dialogue and a common understanding of where to go and particularly to make sure not to put to heavy regulation on the industry that then prevents the investment in the very infrastructure that the government wants to be more broadly deployed.

One of the biggest challenges is making sure that the right regulation, which is always necessary in the context of spectrum, it is as light as possible to make sure that there is predictability, that there is market flexibly, and the ability to do spectrum trading to make sure that Europe is able to re-establish its leadership role in the mobile space.

In the US, there was great competition between two big players, AT&T and Verizon, which spurred unprecedented investment. Europe should look at this and at Asia as a challenge for Europe to make sure that it is creating the environment that is going to be most conducive to a more mobile broadband future.

Many of the emerging markets are very much recognizing the challenge that they have in terms of being as competitive as they can by making sure that they are harmonizing with the big markets, so that they have economies of scale and equipment to drive down affordable prices for mobile broadband to their citizens.

GSMA recently opened an office in Nairobi to understand more directly how to meet some of the ongoing challenges, certainly with coverage, faced.

John Giusti was asked whether he sees any win-win scenarios that will allow more sub-1 GHz spectrum to be released for mobile broadband while at the same time creating new opportunities for video content delivery.

This is one of the big questions. The economic benefits of mobile broadband and expanded access to broadband generally are well established. The key spectrum for that is the sub-1 GHz spectrum due to its good coverage characteristics. This spectrum is occupied by broadcasting. There are also non economic benefits, many services including broadcasting, we need to look at. There is a need for both, mobile industry and the broadcasting community, to think creatively, especially with regards to changing viewing habits and delivery changes. People are valuating the content. There are certainly political and cultural aspects as well. The challenge is to look at the different ways to make rich delivery of content available. As peoples' habits are changing, broadcasters and mobile industry need to look at the landscape of the reality they are in: How to continue content delivery? And how make sure that people have the access to the spectrum they need to meet these growing data demand? And certainly video is one of the highest user of data today. It is time to ask, what is the roadmap that can get us there?

CLAUDIA SELLI, E.U. Affairs Director AT&T, Belgium, [www.att.com], was asked what does AT&T think of the next steps for network operators, particularly in Europe, to get ready for the digital future?

The past 6 years have mainly been about the human interaction with devices, but the next 6 years will be even more impressive. AT&Ts customers in the US are leaving the old regulated PSTN network technologies and services and are using more and more the wireless and VoIP services, and this trend is accelerating. The next wave of innovation will move our societies towards an area of truly intelligent and digital life, where everything will be connected.

AT&T has announced plans to invest billions to expand its wireless and wireline IP broadband network in the US. The company is also planning to transition to an all-IP type of network by 2020. AT&T will use these technology to offer better services. Consumers are at the centre and they are paving the way. They don't really care whether they are on LTE, broadband or VPN – they just want to have a fast and reliable network connection that follows them from home to the office to the car and wherever they are going.

At the same time we have to ask ourselves, how long do we keep the old rules that require old telecomm companies, such as AT&T, to invest money in old technologies instead of investing money in our digital future. It doesn't really make sense to continue investing in old PSTN networks while building at the same time IP kind of networks. Operators certainly need to keep up and invest in the networks, but at the same time, governments should follow and should do their work in modernizing the policy framework which paves the way for technology and doesn't follow technology.

In the US, AT&T is paving the way for "new rules for new wires" and is asking the FCC to initiate several trials. In this regard, Mrs Selli was asked about her opinion of what would be the ideal policy framework that would create an environment that would foster development in digital networks:

The question to be asked is "what regulation makes sense in the 21st century landscape?" Technology has advanced very fast, particularly during the past 6 to 10 years. If looking back to 2007, some types of applications didn't even exist: Twitter didn't exist, Apple was just a computer company, and the application revolution had not yet happened. Technology has advanced very slowly in the last 17 years, but has advanced very fast in the last 10 years. There is a need for a regulatory framework that can keep up with all this. A framework which is flexible and which doesn't stifle innovation. There is a need for a more harmonized regulatory framework instead of the very fragmented market that AT&T is experiencing today particularly in the EU where the company is subjected to 28 regulatory markets.

The EC is currently working on these issues in order to propose a more harmonized approach. There are good elements there to develop.

Mrs Selli than was asked about the open policy issue that has the potential to make the biggest difference in the digital future:

Spectrum is definitely among the most important issues. The best way to drive innovation and investment is by giving large maps of spectrum into the hands of the carriers in order to develop applications.

The second issue is licensing agreements. Approaches that give carriers a license for 10, 15 or 30 years are much more constrictive than having long-term approach like in the US or UK. The problem is that although the carriers can use the spectrum for 10, 15 or 30 years, they will not be able to develop it very much. Instead, they can do much and conserve also the resources when having a long-time agreement.

The technological decision within a spectrum band can also result in an under-utilisation of the spectrum over the time and markets are best suited to drive innovation and also to drive the decision done by the regulators.

Spectrum harmonization is also another important issue especially for companies operating in different geographical areas. AT&T for instance is operating globally and outside the US the company is providing services to big multinational companies and they expect to have the same type of service wherever they are located.

Spectrum harmonisation is positive for the carriers and large enterprise users. The question addressed to Mrs Selli was why it is also in the benefit of consumers and users?

Certainly consumers are benefiting from all the services that are provided. When thinking about the evolution of the Internet has had over the years, a lot of services were not existing some years ago and today, everything that is important is mobile. Important areas are for example education, entertainment, social life and business – we are shaping a kind of mobile world and it is important for operators to be able to provide these services and to innovate. Proscriptive regulation would certainly stifle innovation, this has been proven over the years. And the Internet of tomorrow will be even more dynamic, so this will become even more important.

THOMAS SPILLER, Vice President Public Policy, EMEA, The Walt Disney Company, Belgium, shared valuable thoughts in terms of what is the state of the EU market regarding content offering:

Tom Spiller introduced the three Cs: content, consumer and culture. Culture is an important aspect, not only in the European context but also in the context of emerging economies.

If looking at the Walt Disney Company, Walt Disney is in Italy since March 1930 when the first Topolino (Mickey Mouse) was issued.

Culture is important to gather people around means of communication. Walt Disney, for example, is in the Internet space because kids are there and increasingly kids are going to be there. It is clear that content drives Internet adoption in emerging economies. There is a lot of amusing stuff like dancing cats etc. in the Internet, but this is not what drives Internet adoption. What is driving Internet adoption is professional quality and local language content, whether it is in Africa (Nollywood), the Middle East or Southeast Asia.

The market for content in Europe is booming. From 2006 to 2012, only for 20 countries, the online video transactions grew by 2 350 percent. Mobile devices are certainly key in this development. Today, TV has become just another screen among various others. And kids in particular are driving this revolution.

Walt Disney carried out a social study in the US and asked parents to install cameras in the bedrooms of their 8 to 9 years old children during daytime to see how they consume media. The typical situation is the following: The kid has already done his/her homework, the TV is on, he/she is playing with the Playstation, while texting to a friend and being on Skype and watching some real TV programme. When asking the child, what he/she is doing, the answer will be “nothing”. Because for the child it is nothing, but the child’s brain is engaged in five different ways of using digital media. This gives an idea of the revolution to come. Of course, this has to rely on networks, on broadband, on mobile sets etc. It is part of the ecosystem.

Convergence is happening and there is an explosion of content offerings in Europe in all languages. As far as content for children is concerned, parents want their children to watch TV programmes in their native language, at least up to a certain age.

The market is booming and there are a lot of great offerings throughout Europe. We are also in an area of experimentation. Walt Disney, for instance, is trying new ways to reach new consumers every single week, whether it is online or offline, through mobile platforms, video games etc. Many ideas are thrown to the wall – some will stick, but most will not. Regulation is important, especially in terms of online child safety – but it has to let the market evolve.

The next question addressed to Mrs Spiller was about the regulatory frameworks at the EU level. Apart from online child safety or data protection, what are the next measures that need to be adapted?
The Audiovisual Media Services (AVMS) Directive is one of the key directives for the content industry. There are ongoing discussions in Brussels to update this directive – however, it seems not to be the right moment, because everybody is trying new things. Why bringing new regulation when we don’t know what will be in 5 years! All of the recent predictions have proofed wrong. Things are changing in surprising ways. Consumers are driving the market in their fashion and the content industry is trying to be there when they need a product.

Data protection and online child protection are absolute crucial. This is an area where governments, and in particular the EU, have a very important role to play. However, when it comes to media regulation, there is less need today, simply because we know that the market is changing, convergence is happening, but we don’t know where we will be in three years. An example is Netflix: two years ago Netflix was not known at all, today it is expanding its services all over Europe. This is the result of a market driven evolution.

Mr Spiller was asked whether the Audiovisual Media Services Directive should be put on hold for one or two years?

There are many calls for reopening it and there are certainly some issues. For instance the broadcasters are regulated in a way that the OTT are not. This is definitely not fair, e.g., in the context of advertisement. In the future, it is not going to be “either /or” it is going to be “and”.

Walt Disney always put online child safety as a priority, and this is a role for governments, not for private companies. But as far as the AVMS directive is concerned, it might not be useful because the market is changing every single day.

INNOCENZO GENNA, Founder and Partner Director Genna Cabinet, Belgium, was asked about the main points of the Network Neutrality reform proposed by EU Commissioner Kroes by the single market package:

The reform of the net neutrality which has been proposed in September this year will have a strong impact in Europe and there is already a hot debate around. The proposal can be summarized in two pillars: on one hand, the reform put a lot of emphasis on specialized services, which means special connectivity services with high quality. On the other side, the reform is rationalizing the right of the end-user in the non-specialized/best effort Internet. However, these rights are not clearly framed, since they are just indicated as “freedoms”. The point is that “having the right to” and “having the freedom of” is not the same thing… Apart form that, on the base of this reform customers will have the freedom to have access to an open Internet without the possibility for network providers to downgrade, obstruct, throttle or block access to services, unless there are using a reasonable network management practice for specific parts, which can be congestion, security, protection or privacy.

Innocenzo Genna then was asked whether there is a need to provide a legal basis for the suppliers of specialized Internet services in the EU:

Currently there are no legal obstacles on the market for an operator to provide special connectivity services throughout Europe. Therefore it is a bit intriguing why the European Commission is putting so much emphasis on such services. Currently, you have all the business markets which are based on specialized services, although normally not on IP platforms but based on special data connectivity. In any case, even now you can provide specialized services on IP – there is no legal or market obstacle for that.

Remarkably, the current European Commission lead by Commissioner Kroes is a “deregulatory” body, since there is particular emphasis on deregulation as such. Therefore, when such a “deregulatory” Commission suddenly introduces new regulation, then one would expect a big business case or a spectacular market failure to address – otherwise they would not do this. But when asking why there is need for such kind of specialised Internet services, there is no clear answer from the Commission’s offices.

Who will be the beneficiary of specialized services? Potentially, all the OTTs. Skype, for instance, which is providing videoconferences everywhere, may need to have a specialized end-to-end connectivity in order to improve their services. But if you ask Skype, whether they are requesting for this, their answer would be “no”. They are worrying about blocking or about throttling, while for end-to-end quality they have their own technology. And this is the same for Google, Facebook etc., no-one is demanding such kind of services (at least via regulation) To sum up, since there is nor legal obstacle to fix neither a market failures to address, one should wonder why the Commission gives so much emphasis to specialized services.

The following question addressed the fact that there have been heated discussions on

Commissioner Kroes' plans by libertarians, civil rights representatives and consumer associations. Why are they so concerned about the reform?

Mr Genna explained that regulating net neutrality is not something that can be done in an easy way. The reform of Commissioner Kroes is courageous, but there are some gaps, which have to be covered. And there are some dilemmas which are inherent to net neutrality. The first one is the dilemma of quality: potentially everybody will be happy with more quality. However, let's imagine an Internet access provider decides to sell a kind of high-level quality Youtube: nobody would buy it as long as people can get Youtube on the best-effort Internet. The paradox is that the only way to provide high quality services is to a have a crapped, non working Internet. That is a dilemma. Of course this is not the intention of the Commission to encourage the deterioration of the best-effort Internet, however this could be the result of the reform, and this is what libertarians and consumer associations fear at the end: the emphasis on specialized services might lead to the end of the best-effort Internet as we know it.

There is a second point: a gap which is currently in the reform, is whether or not ISPs will be able to differentiate the price of the connectivity. Could an ISP say to its customers: "this is the package you get with such kind of services – but if you want more (namely services provided by third operators), you have to pay more"? If this business model develops, Internet will regress to broadcasting. Because the ISPs will select a number of services, which might be own services or agreed services from third operators, and there will be a package for a given price for the end user. If the end user wants to surf or to have more, basically to be in the normal open Internet, he/she has to pay more.

This is not the intention of the European Commission, however some gaps in the current reform may allow or even encourage such kind of developments.

The following question was about the potential impact the reform on the balance between incumbent telcos on one hand and over-the-top providers on the other hand:

Mr Genna supposed that the reform is slightly changing the balance in favour of telcos. In the reality, however, nothing will really happen, especially with regard to big OTTs. If Telecom Italia, for instance, tries to charge something on end-users for accessing Google, this will not work, because users will leave Telecom Italia and Google has too much negotiating power.

The balance might change with the small OTTs. Imagine Skype or Facebook 10 years ago in the infancy of their services. If at that time their services would have been charged with an additional fee, end-users would not have chosen them. Why should they pay for something they don't know? Today, if you charge Facebook or Google, this will be a revolution in the market, but 10 years ago this would not happen. Therefore, the new balance introduced by the Kroes' reform will likely affect start-ups and new services, not incumbent OTT. Therefore,, in case the reform goes in this direction the main problem will be for innovation. In any case, the balance between the big telcos and the big OTTs will not change.

OLIVIER DUROYON, Director Public Affairs Alcatel-Lucent, France, [www.alcatel-lucent.com], was asked about Alcatel-Lucent's perspective on how public policy frameworks have dealt with convergence so far:

Convergence is multifaceted. Historically, it started with the convergence of the different telecommunications protocols used for networking. They all converged to all-IP. The aggregation and the core networks have moved from vertical silos to one flat network, one non-hierarchized and supporting multi-service and multi-application on one single network. Regulatory-wise this first level of convergence has led in the US to the separation of the information services and the communication services in 1995.

The second level of convergence came along with the Internet access. In Europe, broadband access has started with the DSL and then fibre. It has become wireless, mobile and ubiquitous with the smart phones and tablets. All devices have become mobile, but mobile has also become fixed with a need for tremendous backhaul capacity. Regulatory-wise Europe has introduced the concept of technology neutrality, which is a difficult concept to implement.

The third level of convergence is what we are seeing today in the content delivery world. This is driven by new consumptions of end-users, new patterns of content based on multi-screen and non-linear programming. From a primary broadcast medium, we are shifting to a unicast to an on-demand world. This content delivery convergence will be accelerated with the cloud. The new architectures we are seeing from a technology standpoint start from our hand, the device, connected to a ultra-broadband access to a new networks to the cloud, where the content resides. Here, the policy framework has not followed yet. Privacy, security, data protection are the new concepts to deal with this third level of convergence.

The following question concerned recommendations for creating an environment to foster optimal investment in networks:

When taking about policies for the converging digital future, one don't have to forget that in Europe, it still remains a problem of infrastructures. Telecommunications are facing an unprecedented increase of data. Forecasts are talking about a multiplication by 25 of data for coming 5 years in mobile. The response of the industry to this data explosion has to come along with investments. This impressive data growth requires investments by all the operators – and here Europe is lagging behind. It is not the point of blaming only the regulation for that. This would be too simplistic and not taking into account some side effects of regulation and of the industry.

Alcatel-Lucent appreciates the courage of the European Commission to come up with the Telecommunications Single Market Package, which might have some gaps, but also contains measures that could foster investment: The first one concerns the NGA wireline world: The last regulatory framework of 2009 tried to leverage the past unbundling concepts to move from copper to fibre, but this has failed. Alcatel-Lucent welcomes the recommendations of Neelie Kroes: To improve the predictability and stability of the framework to attract long-term investors in fibre with a stable copper pricing, and to reward the risky investments in fibre through pricing flexibility in the competitive areas.

The second element is the proposal of harmonized EU virtual access measures. The promotion of virtual and wholesale accesses in Europe is the right step towards investments in the NGA.

Mr Duroyon was then asked whether he would like to make any changes to that framework in the OTT environment:

When looking at the different levels of convergence, we have seen the technological evolution, at the same time we haven't seen the same evolution in the structure of the industry. There is a dividing gap between regulated technologies and less regulated activities. The next century public policy environment should not increase this gap.

With regards to the net neutrality point in the framework, it is the right time for Europe to adopt some explicit high level simple rules for net neutrality. The measures that are proposed in the package are fine as they are – meaning that operators are allowed to monetize the data flow through service differentiation, which is called in the package "specialized services". They are key to foster innovation, they are key to make the market ready for new services and meet demands at different levels of quality.

In addition to provide a best-effort delivery, operators will be able to develop their capabilities to provide edge-to-edge quality of service delivery and become real actors in the cloud and the content delivery networks' world as providers, of course by preserving openness and non-discriminatory rules.

The framework package found the right balance between the consumers' benefits and the competition and the economic sustainability of the industry. It is a way to achieve a level playing field among telecommunication and Internet players.

To conclude, net neutrality has been an American invention – for potentially good reasons of ensuring competition between providers at that time (about 10 years ago). Europe has imported the challenge and the issue. Meanwhile, the Americans found a solution and solved the issue and maybe Europe is going to end up through its policy approach with stricter rules on a topic it hasn't really been suffering from. It has to be careful of not going too far with that.

PAOLO PLEBANI, Founder & CEO Powerplex, Italy, provided on the ground thinking in terms of which problems he observed in Italy relative to the smart cities projects and the public administration and which solutions could be adapted with the current spending:

What makes a city smart? It is not only a matter of technology. It is not only intelligent streetlights or energy savings. A smart city is a place where all the essential and core processes are revised to radically improve life quality, opportunities, wealth and social and economic development. It is not possible to think about a smart city without smart inhabitants living there.

We have to invest both in technology and in culture in order to do this. At the moment, there are different smart projects which are applied to a huge number of fields, such as energy, Internet, ICT, town planning etc. In many cases these are really interesting but bad coordinated projects, well away from the concept of cost reference and cost optimisation required by spending review policy. The real critical aspect of the smart cities' realisation is the lack of organisational and coordinative reference models for all stakeholders. The reference model should have the goal to drive everyone to play its part in a coordinated and coherent way. Finally, there is a lack of regulation.

Through the ISO Smart City Initiative, its members commit themselves to create an optional rule, an ISO standard. Thanks to the involvement of the autonomous province of Bolzano (Bolzano is a city in North Italy/ South Tyrol) the project is laying the foundation to define an international standard in order to arrange, implement, use, control, maintain and improve the smart cities management system. Further partners of the initiative are Accredia, the Italian Accreditation Authority, the Italian Electrical Committee, the Italian Authority for Standardization, the European Committee for Standardization and ISO.

This international standard will adopt the so-called “plan, do, check, act model” and will provide a strong example to successfully apply the implementation principles for smart cities. It will be possible to interconnect smart products, services and processes and to compare them with efficacy and efficiency goals only through a systemic logic.

With regards to the ISO 9001, nowadays they consider a common requisite for every big and private organization. They enclosed requisites are now obvious. Just 10 or 15 years ago, the same requisites seemed to be unreachable.

A smart ISO standard should at least take 7 aspects into consideration. All the processes started up by a local administrator should be first planned and then provided. Among the elements to be considered in the planning there should be smart requisites. Citizens should be able to express their point of view on the already planned smart logics in order to suggest possible improvements. All the processes should be realized in controlled conditions in order to ensure the repeatability of the performances. All the analogue services and solutions should be converted to digital ones. All the service desk processes should follow. The one stop shop or one call solution criterion, i.e., the possibility for citizens to use a complete service without being sent back to other desks. All the services, products and processes of the management system should be measured in terms of performance, efficacy and efficiency. The results have to be provided to the citizens with full transparency.

The first steps to turn this initiative into reality have been taken. Now the project is looking for partners from all over the world, telcos, IT or ICT companies, interested to participate.

The moderator would like to know what would be the best way for public administrations to facilitate smart cities. Is there a need for a new standard or a new law?

Paolo Plebani referred to his experience that public administrations generally do not know exactly what they need and where they want to go. The idea is to organize an transnational round table and all the companies have to present their ideas to the public administration. There is a need for rules in order to assist the politicians.

--- ✦✦✦ ---

Q&A

The moderator invited the panellists to give some short concluding remarks:

Claudia Selli, AT&T, referred to net neutrality. Particularly traffic management is a technique that has been used over the past years, it isn't something new. Having prescriptive regulation would not really help to make innovation happening. All the innovation that happens, happens thanks to the fact that operators where able to use traffic management. Consumers also benefit form that.

Nataša Pirc Musar, Information Commissioner of the Republic of Slovenia joked that privacy profession seems to be the profession of the future.

John Giusti, GSMA Association, highlighted affordability and harmonization. In addition to facilitating investment it is important to make sure that the policies are such that there is affordability and harmonization. We work in a global environment and the vendors make equipment based on the ability to sell it. Currently people make equipment for certain bands. You can't just have a certain bit of spectrum in one country and then in another and expect equipment to serve that. The more we look at 700 MHz globally – if India were to move forward with its plan and Latin America is moving forward and Australia has already done so -- we start to see that in that particular band and that particular context there is possibility to make chips that are much cheaper and it become much more affordable to people to access mobile broadband.

Thomas Spiller, Vice President Public Policy, EMEA, The Walt Disney Company, Belgium, emphasised that one has to pay attention with regards to the regulation of the Internet when it comes to privacy. Different countries around the world might have a different interpretation of regulating the Internet, e.g., when it comes to human rights. It doesn't mean the same thing to everybody.

Innocenzo Genna, Genna Cabinet, stressed that innovation is a word which is often used with a lot of emphasis. Everybody is looking of innovation, but what is the source of innovation? A source of innovation is when you enter the market and when you don't have a consolidate position. Big operators, whether telcos or bigger OTTs are never innovating, because for financial reasons they are comfortable in their position. In order to preserve innovation, it is important to preserve competition and to preserve entry to the market.

Fiona Taylor, Verizon, focused on cloud related issues: Fundamentally, the cloud is about new business models rather than a technological revolution. The Cloud is complex and there is no "one size fits all" approach that fits all the variations of cloud services: public/private/hybrid, consumer/enterprise, IaaS/SaaS/CaaS. More specifically, business and residential users have different needs and therefore necessitate different policy considerations. Given the differing characteristics of business services, residential user

policy considerations should not be extended to business users..

The next question from the audience was whether or not companies such AT&T and Verizon would participate in a model of selling wholesale access?

Claudia Selli, AT&T, explained that it is a model that AT&T could participate in, in a sense that AT&T, on a European level, is already buying from other operators wholesale access and selling it to big multinationals. It is a model that is already in place, it is a different background because AT&T is providing it to multinationals and not to consumers. It is a business model that has to be thought but which could be feasible.

Innocenzo Genna, Genna Cabinet, replied that telecommunications operators are normally vertically integrated operators and they sell wholesale on regulated terms when they are forced to do so. When they do it on a commercial basis, i.e. voluntarily, there has never been a very successful story from the buyer's side.

John Giusti, GSMA Association, added that one thing he has seen in the spectrum issues globally is that there is different wholesale models out there and the extend to which companies are engaged in commercial wholesale arrangements. There are probably many aspects in which that is a very successful business model, both for the supplier and the purchaser of the wholesale.

There is a growing trend towards mire government intervention in the wholesale model to different degrees in different countries. One of the important considerations is how to make sure that the underlying company has the incentives to invest in its networks and its infrastructure. The question is always, if you create a heavily government-backed approach and a strong regulation and pricing, are you going to get the investment in broadband infrastructure that you want? That will be the only question as these models are discussed.

Olivier Duroyon, Alcatel-Lucent, added that, as regards wholesale products and offerings from a technical point of view, there was tremendous challenge and evolutions in the ability and the capacity. Due to the technology evolutions, equipment providers, access providers and network providers are now able to offer wholesale products from the mobile to the fixed on multiple technology. It is not a technology issue anymore -- even if it is a very complex issue, because it is not only networks, but also management, control etc.

There is nothing new with wholesale models and it might bring an answer to many different scenarios today. Some scenarios are politically driven, regulatory driven (e.g. Australia or New Zealand), others are based on economical studies on the last sustainable points where physical unbundling doesn't make no sense anymore (typically at the sub-loop level of access). Some are driven by technological limitations, such as in the vectoring technology which is a great technology in copper to bring predictably and performance access. There are plenty of scenarios where virtual and wholesale products make a lot of sense, both in mobile and fixed.

--- ✦✦✦ ---

Development & Data for eHealth

The session's moderator, **SHAI MISAN, CEO Medic4all**, Israel/Italy, [http://en.medic4all.it/], welcomed the panellist and set the frame for the upcoming presentations with some brief introductory remarks. The session will touch over the issue of how technology and data transfer can become a real service for the citizen and for the patient. The session shall provide a nutshell of what is the actual service that the customer or the patient or the citizen is receiving at the end of the day.

GIAMPAOLO ARMELLIN, Head of Research Unit GPI Group, Italy, [http://www.gpi.it/en/], chairing, opened the session by sharing some valuable thoughts on the role of technology in our healthcare systems:

Towards a Digital Healthcare Environment

A question raising when talking about eHealth is, "is eHealth just a matter of technology"? Usually, the "e" in eHealth stands for "electronic something". It seems to be something for engineers… People particularly talk about healthcare data and this kind of data seem to be related to data bases and exchanging XML etc. Which kind of "data" to deal with? And, another important question is: What about services and organizations?

Healthcare and technologies -- what comes out of this is the meaning of services: Not just thinking about a healthcare system managed by electronic computers, but thinking about services and using technology as a common resource.

The challenge of healthcare systems is to think about individuals. The main goal is not to use technology just for the sake of technology. We have to take care of individuals, enabling effective and efficient services by introducing technology-based assets. Being healthy even by using technologies – using technology as a resource, as something useful that we can accustomed to introduce in the healthcare services.

The perspective should be to build up a digital healthcare environment. This means that we don't take care of necessarily introducing technology in healthcare processes, but developing healthcare processes by using technology when needed. Another important aspect in this context is related to personalization. "Personalization" does not mean that a product has to be simply "customized" -- "personalization" means "making personal". If we use technologies, we could perform a deeper personalization of the services we are offering to the citizens and to meet their demands and needs.

There are many actors involved and it is important to use technology to enable people to exchange information, not just data, but thinking about what is useful, what reduces the uncertainty of people.

Finally, we have to focus our attention on different ways of providing these services to people. The classical waterfall model is going to be discarded. We have to establish a continuous loop in terms of discovery, in terms of the new design of services, in terms of establishing a relationship for partnerships with the customers – they are going to be partners. It is a different model and we need to focus not only on technology but also on organization. This is very important to develop something new!

PAOLO BARICHELLO, CIO Azienda ULSS N. 8 di Asolo, Italy, presented an ambitious European project:

Sustains Project –
Support Users To Access Information and Services

The Sustains project supports users to access information and services.

The project started in January 2012 and the duration is 36 months. Sustains is a EU project with 16 partners from 10 European countries.

The target of the project is to join the European Digital Agenda through the Key Action 13 which supports “pilot actions to equip European citizens with secure online access to personal health data by 2015 and spread widely telemedicine services by 2020". In this perspective, the overall goal is to initiate, promote and evaluate a set of services that allow citizens the online access to their health information.

There are 3 areas the Sustains project is working on: Citizen empowerment, clinical results, efficiency and sustainability. The Veneto Region goal is make a first pilot site for some functionality of FSER addressed to citizens and analyse the perception and the level of use by the latter.

The project is coordinated by a Swedish partner. Azienda ULSS N. 8 di Asolo develops 8 of the online administrative services and 4 of the clinical services addressed by the Sustains project.

With respect to the timeline of the project, in 2012, Sustains has to implement the 12 services. 2013 is mainly dedicated to the recruitment of users and the upgrading of the services. In 2014, the results will be analysed and a study will be carried out to see which are the services that are used by the citizens.

One important service is the online book or rebook services. There are 2 methods: In the asynchronous mode, the citizen requires the appointment online. ULSS8 within 24 hours offers the first available date by email. In the synchronous mode the citizens access to agendas directly online and can book the appointment. This mode exists but is not running as there is still an open debate on which agendas should be made available to citizens (low, high or very high priority) and for which typology of healthcare services online booking should be allowed. There is the need to avoid a chaotic management of the waiting lists.

Another service is online payment in order to enable patients to pay their fees online. However, currently, only 1 percent of all payments are made online.

The Sustains project also addresses notification services, which means that patients are notified either by voice message or via SMS 3 days before the appointment. Moreover, exam costs are listed online in the portal.

"Ask a question to a physician or a nurse" is another service addressed by Sustain. Patients complete a form to ask questions concerning specific laboratory results. Furthermore, there is a service allowing to update in the EHR contact information of close relatives or caregivers.

Another services enables patients to provide input to EHR on other clinical documentation. A delegation of access allows patients to delegate other people to have access to their EHR, for a limited period of time.

The service "masking data in the EHR" allows citizen to mask documents for particular categories of operators. There is a visibility matrix, which is used to distinguish access modalities based on the roles of operators. This matrix was issued by the Ministry of Health.

The service "consult and audit trial" allows citizen to consult operation list made in his EHR by others operators (document access, delegation making, delegated access, etc)

Sustain also supports integration of data relating to patient's self-monitoring. This service allows patients and physicians to directly consult data achieved from telemonitoring devices in the EHR.

To increase the number of HER accounts it is necessary to open new "hotspots" with respect to actual administrative district points, where the citizen currently goes to sign or receives documentation for the activation of the HER.

An observation made by the EC is that Sustain implemented the services in different matters and with no unique method. This is a European problem, because there are monetary and political similarities, but in this case of healthcare, countries have different approaches. It is necessary to work on harmonizing services and methods of accessing online services.

CARMELO BATTAGLIA, Commercial Director Public administration and institutional relations, InfoCert, Italy, [http://www.infocert.org], expanded on the topic

Exploiting Trusted Healthcare Data

Digital health is one of the focal points of the Digital Agenda. Today, more than ever, digital healthcare is important to have as there is a real need for it. InfoCert, together with other market players, has created a model of digital health through vertical application.

The vertical application proposed by InfoCert is the following: Digital signature, time stamping, registered email, document management and digital preservation. The digital signature in Europe is possible as USB token for digital document subscription, as OTP remote signature for online subscription without devices an as massive signature for automatic large number document subscription. The time stamp is the date and time stamping in the documents.

Registered e-mail is a certified digital communication maintaining legal value of paper communication. Document management is the digital workflow management of documentations. Digital preservation ensures the integrity, readability and authenticity of documents stored. Document presentation maintains the legal value of the original paper document.

Today, a completely digital workflow, 100 percent paperless, is possible in eHealth. The healthcare document lifecycle comprises the repository or the central document archive, the document acquisition, and the document exploitation.

As regards healthcare documents acquisition, there is a regional authority and InfoCert and a healthcare provider. Documents acquisition comprises the consolidation of document assets, the management of digital validity and archival for full legal validity and long-term preservation. Document exploitation is an important part of the project. The identity management is requested to manage access to the documents. Identity management today is very simple. Different authentication methods are available: Patients can use either smartphones, tablets, smart cards or a USB stick.

HealthCare has strong need for trusted services: Checking documents, possibly including digital signature, consolidation (time stamping), archival for full legal validity and long-term preservation and identity management for proper document access. The Trusted Cloud, i.e. cloud infrastructure and trusted services, is a solution. Trusted services imply standards and law compliance, quality certification, accreditation and a general culture of security and trust.

GIORGIO CALZETTI, CEO & ALESSANDRO BORGATO, Sales Manager, Solinfo, Italy, [http://www.noemalife.com/index.php?id=1], introduced

Global ICT Outsourcing Service: A New Service Model

Solinfo is a NoemaLife Group' company with 55 employees and annual sales of 4.2 million euros. Solinfo is localized in the Italian market and focuses on healthcare software solutions and ICT services.

Solinfo has obtained the following certifications: ISO 9.001 in 2008 for Total Quality Management, ISO 14.001 in 2004 for Environment Management, ISO 20.000-1 in 2001 for ICT Services Management and ISO 27.001 in 2005 for Data Security Management.

Today is a period of depression. Nevertheless, healthcare structures have to provide even more services, even if their budgets are cut of. One way to face this period is certainly to retrench expenses – but also investing in technologies is able to provide savings: Through ICT services it is possible to achieve efficiency in process management, increased productivity and costs governance.

The market moves toward integrated ICT services. The user only needs the right equipment to insert and retrieve data. Besides this, there is a black box working for the user -- just like people use their credit cards or like switching on the light of a room without reflecting on the technical infrastructure behind.

A first step towards this model has been done within the Treviso Healthcare Unit experience. The experience concerns an ICT outsourcing contract from 2010 up to 2017.Whithin the framework of this contract, Solinfo is managing about 3 000 workstations with 15 percent turnover per year, 221 virtual server. Moreover, the task is to manage about 60.000 tickets per year. Together with Telecom Italia, two sites on the business continuity and disaster recovery have been build up. There are about 20 specialized employees on-site. More than 120 software solutions working in the data center.

GIAN LUCA DEGLI STEFANI, HCIT Regional Commercial Leader Italy, Malta & Israel GE Medical Systems Italia S.p.A, Italy, provided a most interesting overview on

GE Healthcare

We are moving to a different phase, which can be called the Industrial Internet. The Industrial Internet means that eHealth is not only sharing data between the user or the patient, but to interact with the medical devices or a device in general. The Industrial Internet is a process that will impact all the devices and all the machines and of course, in the future it will be possible to know when and where big data goes.

First of all, one has to understand that the devices are producing a huge amount of data for the healthcare process. In this moment a lot of users are not able to analyse the impact that they can have on the patient.

Two concepts will come along with the Industrial Internet: Interaction with the device, from the patient and from the user, and the possibility to manage big data.

What will change in the process? This change will increase the centralisation of the clinical hub, it will lead to really fast decisions in the healthcare process, the use of new tools for the diagnosis will avoid the patient's transfer between one hospital and another, and in particularly it will be possible to bring the delivery of the service to the patient at home. It is possible to create a completely new model for the citizen and for the patient. The health care service will be for the citizen before the patient.

Fast decisions making is very important inside of the stroke network, in mammo screening or cross-reporting phases, where access to the data to share information with the colleagues is required. As regards the new organization, the main important point will be the workflow from the different departments, the different hospitals and the different healthcare services. The new workflow will create new synergies and again new healthcare services.

Looking at the solutions that we have in many hospitals today, there are EMRs collected in different departments with different departments information systems and different archives. To move to the Industrial Internet vision, it is important to move from this scenario towards a cloud healthcare service layer that is the unique interface of the healthcare service for the patient and for the users.

Three areas, where this will have a really important impact: Digital pathology: We will move from the glass to digital data. Nowadays, it is possible to provide in 90 seconds the digitalisation of a glass. This can really improve the diagnosis. Imagine a doctor in Malta who can ask within 90 seconds a college in England about his/her opinion on a case he/she has never seen before.

The second area is the digital radiology: We are moving from a PACS to a new concept that is a VNA (vendor neutral archive). Information are collected in a unique archive which is able to elaborate all the data, not only images about the patient. A unique archive able to work with an intelligent algorithm.

The third area is eHealth. We will move from data moving to data access. Imagine what it means to move gigabytes of data from one hospital to another. In the future, we will not have to move the data, because moving the data increases the risks for the patient, but just accessing data.

Two examples are an XDS regional project where 21 hospitals are involved. The idea is sharing the eHealth community desktop. All the architecture behind is to create an eHealth community desktop which is able to provide new healthcare services for the citizens. Another example is Canda Infoway, showing how the Industrial Internet is able to save money and at the same time create new healthcare services.

SERENA LA MANNA, Project Manager R&D Division, DEDALUS SPA, Italy, [http://www.dedalus.eu/], outlined the requirements and expectations from the future in eHealth, the meaning of cooperation in healthcare as well as initiatives to shape a challenging eHealth in the near future:

The vision of Dedalus for interoperability innovation in the eHealth sector

The future sustainable and effective healthcare requires a citizen centric approach, because it is important also to address well-being, prevention and other concepts that are related to people that are not yet patients. Another important aspect is to better use resources in order to reduce costs, such as the number of hospitalisations, accesses in emergency room, days of hospitalisation etc. Another main aspect is chronic care that should be addressed according to new care models, such as the Chronic Care Model.

Requirements are to integrate different healthcare settings, i.e., hospital-territory integration, primary care and homecare, but also to involve different professional roles and cooperation within multi-disciplinary activities, such as the activities related to chronic care management, and then to address the management clinical workflows.

The core technological solutions are cooperation infrastructures for EHR and EPR systems.

The challenge is to evolve from integration to cooperation. We do not only share information and data, but we share objectives and the question of how to reach these objectives. The technological approach needed is to adopt the corresponding architectures and health standards.

What is required of healthcare information systems? There are a lot of monolithic solutions, but they are very expensive to maintain and to evolve. Generally, to define integration there a many point-to-point integrations which are very expensive to extend and which often are bottlenecks of the transactions. The next step is a general purpose integration middleware -- this kind of approach is more effective and scalable, but unfortunately is unable to support real cooperation, including also well-being and social information.

Thus, the proposed approach is a platform called “X1.V1” which is an interoperability framework supporting application cooperation among different settings and different professional approaches. It is possible to make cooperating primary care, secondary care, and also homecare and assisted living. It is completely based on eHealth standards and also supports the workflow management for clinical and care pathways. The platform also supports a multi-professional approach.

The idea is to have a platform which is not only able to deal with different management solutions in healthcare to share information, but also to cooperate in order to define a workflow and to cooperate in order to achieve the objectives. For example, the

order workflow starting with modelling the entire order workflow and making also notifications to all the actors involved in the process. Moreover, all documents produced in the entire workflow can be accessed by all actors involved in the workflow.

What about the social aspects? Now we are facing a specific moment in the evolution of healthcare systems, which needs also to address the social workflows which represent a large part of our healthcare systems.

Dedalus is currently working on 3 different projects in order to let X1.V1 evolve and to guarantee support for all these approaches. The first project is aiming at implementing, on the top of the X1.V1, HSSP approaches, which are standard services for healthcare sponsored by HL7 and OMG.

Another project is Asso, which is based in the Tuscany region. Here, the focus is to integrate and to support the continuity of care and integrating the hospital and the territory as well as to manage the clinical risk and to enforce patient empowerment in his/her own clinical care.

The third one is the Adapt project with the endorsement of Regione Veneto, whose aim is to realize of a comprehensive citizen well-being, starting from health and social pathways to define added value services also for socially underprivileged categories. The idea is to define a virtuous circle where the pathways produce a lot of information and data which feeds information in electronic and social health records supporting the definition of policies. Once one of the policies has been activated, than information gained in this workflows will feed again the data source.

LUCA GIOBELLI, AOUI Verona, Italy, presented an innovative project realised at the AOUI of Verona:

The hospital of Verona is a big hospital composed of the two hospitals Borgo Trento and Borgo Roma. There are 83 specialized hospital wards. Since 2012, the hospital of Verona is integrated with the faculty of medicine and surgery. With 57 000 admissions per year and more than 8 million exams per year the dimensions of the hospital are impressing.

Experimentations with drug prescription started in 2003. In fact, in 2003, the first experimentation has taken place, but difficulties occurred because the software on the market was not yet good enough. In 2005, a second experimentation took place with the automatic dispense ward. After these observations, the hospital of Verona has published a public tender in 2010 for the implementation of computer software. This project started in 2013.

The hospital has implemented the software solution provided by GPI. It permits computerized prescription and administration of drugs. It also permits the use of robotic dispensers in the wards, a pharmacy logistic as well as the management and control of the robotic dispensers.

The hospital of Verona has decided to implement only the first part of the project, the clinical management of the drugs, not the remaining two. In November, the hospital will start implementing this system in the wards, by also utilizing the treatment registry. This system permits the doctor to use his/her own tablet directly by the bedside of the patient and to directly display the treatment registry. The system also facilitates the administration of drugs for the nurse and allows to directly use the trolley and the PC tablet at the bedside of the patient.

There is an alarm system which is capable to reduce the mistakes. The system is known as the “6A”. 6A means that there are 6 very simple rules: The first one is an alerting system to avoid delays or forgetfulness during administration. The second rule is a secure identification of the patients by reading the barcode. The third one allows clear and precise interpretable instructions. The forth and fifth rule is to give the right drug to the right patient and in the right dose. The six rule is registration according to the standards required by the Joint Commission.

The advantages provided by this system are the followings: reduction of clinical risks, optimisation of human and economic resources, control and monitoring of the entire logistic process, adaptation to the international standards for the accreditation of healthcare facilities, and improvement of the perceived quality by the user and the community. The system enables savings -- there are savings resulting from the reduction of supplies, savings resulting from the reduction of consumption, savings resulting from the reduction time in the operating unit and savings resulting from the reduction of clinical risks.

SARA ZANCHIELLO, Technology Transfer Broker, AREA Science Park, Italy, presented a number of simple and down to earth solutions, realized within a model putting together public administrations, researchers and companies:

Moving towards an integrated regional eHealth ecosystem:
FVG as a L@b

The region Friuli Venezia Giulia defined a smart specialisation strategy which also covers the Ambient Assisted Living domain. Friuli Venezia Giulia (FVG) as a Laboratory – the administration FVG, through the integration of the “health and social inclusion” and “research and innovation” sectors, has set on September 2012 the Regional Laboratory for the promotion of home living and accessibility. It involves 2 regional authorities (health and innovation department), 4 science and technology parks, 2 universities, 3 public administrations and 39 companies. The first goal is to create a platform putting together public administrations, companies and researchers.

FVG decided to take part in a national cluster call and FVG as a L@b is now officially established as regional cluster on the issue of Ambient Assisted Living and included in the Italian national cluster initiatives. The Laboratory provides an organizational framework to support the development of a network among local, regional, national and international actors. The objective is the promotion of dialogue and cooperation between public and private partners on demographic change issues and on the role of technology in the development of tailor-made products and services.

The lab focuses on domestics (housing and independent living), active aging at home (social innovation and PPP), and ambient intelligence (ICT, robotics).

In terms of the context of ambient active living, the local health administration supports sector proposals and sustains initiatives through community area welfare.

During the last 16 years, FVG Region has developed a complex weave of legislative and project-based interventions aimed at promoting home living for persons with disabilities and dependants at the best conditions possible in terms of quality of life. The projects concern

service and product innovation, innovation in social-health services and the creation of new partnerships.

Help Key TV, for instance, is a project for elderly in which a platform has been developed, putting together simple instruments for elderly, e.g., TV with a lot of services coming from the local administration.

EasyHome is another project with the goal to improve home safety for elderly and helping them to stay and to live at home with the help of simple technology elements.

Another project was about home automation systems for the guidance of people with difficulties in confined environments. A further project on domotics apartments realised in Trieste addresses people with physical disabilities and provides training areas for these people to test technologies.

The activities that FVGasaL@b carries out are management of knowledge and information for the dissemination of ICT; coordination of a network of actors active in the field of innovation intertwined with the perception of ageing society; project-oriented and organizational support to FVG Region aiming at strengthening its presence in research and development projects at national and international level; development of documents and background material useful for orienting public and private entities committed to design management solutions for social housing projects; promotion and implementation of initiatives encouraging the culture of accessibility by developing contents and training for the enhancement of competences in the field of accessibility and quality of life at home.

The ambition is to “fluidify” the traditional RDI process that moves on from the laboratory to the prototyping phase, and from the testing phase to product or service engineering. Important aspects are the co-creation in the Living Lab supporting user-centred RDI projects – with the Living Lab being an open access platform for large scale pilot projects, but also using PPPs Public private partnership as a mean to integrate between Living Lab innovation and sustainability policies.

ALBERTO STEINDLER, CEO Insiel Mercato, Italy, delivered a remarkable talk on

The Holistic Approach to eHealth:
A New Model Aiming at Excellence

Present challenges are an increased demand for healthcare services due to an aging society, the request for cost reduction and increased efficiency, as well as a need for personalized care and widespread communication.

The Internet of Things is also true in the healthcare environment. A few years ago, the number of medical equipment was in the range of a few thousands in larger hospitals, now we are moving to the home of the patients bringing the number of medical devices connected to millions. This is a completely different scenario.

When it comes to the people, they are today real actors in their own care processes. It is healthcare 2.0 where people want to be informed and involved in their care processes.

When looking at the history of the medical record and digital management of clinical data, there were two very important moments, quantum leaps: Back in the 1970s/ early

80s, when everybody was taking about paperless. This move away from paper-based patient information was the mainstream at that time. If looking back at the 1990s/ early 2000s, the first leap was in the filmless world, where the complexity of managed data moved to megabytes. This was a huge quantum leap in the complexity of our systems. Today, the phenotypic and genotypic data move the complexity of the systems to terabytes. This is real revolution of what we are supposed to mange.

There is a need for an holistic approach to eHealth. We have to look at health management as a whole. For instance the Kaiser pyramid that is used in healthcare: The goal is to keep the patients off the top of the pyramid. They have to be at the bottom of the pyramid, because they feel better but also because they cost less. How to do this? Through information. We need to know the population before they become patients. Healthcare is an information-dependent industry.

Another issue is disease management, in particular chronic diseases which consume a large part of the healthcare budget. We have to stop thinking about healthcare like isolated events, but start to think in clinical pathways where everything is interconnected. A case study is the Super Scheduler System that is implemented in the University Hospital Birmingham. In this case study elected inpatients are addressed through clinical pathways: booking their examination through precise clinical pathways and avoiding unnecessary examinations.

The next issue is patient management, focussing on the single patient. In this case, a multidisciplinary approach is required, where the healthcare professionals have to work as a team in a system. The multidisciplinary approach is performed through information flows. A case study in this field is the local health unit of Alto Adige, where a very advanced multidisciplinary medical record is implemented .

Management of people and their social networks, even before they become patients, is another important issue. The main actors are not anymore the doctors, but the families, NPO, etc. Everybody is involved in an enlarged healthcare system. Information plays a key role to connect all the stakeholders. A case study is the home telemonitoring of patients with chronic diseases implemented in the Veneto Region.

The point in technology management is that the huge amount of medical equipment, which is producing a huge amount of information, should be interconnected and should feed in the most simple way all the electronic medical records and clinical documentation. A case study is the healthcare authority of Rovigo, which reached the stage 6 of the HIMMS analytics, which is now the benchmark that is used worldwide to measure and score analytical maturity.

With regards to performance management, this holistic approach allows the realization of the resources and the improvement of clinical outcome.

DIEGO PONZIN, Director Veneto Eye Bank Foundation & Corneal Consultant, Italy, expanded on the particular topic:

Information technology, corneal transplantation and eye banking

As a reference center for corneal transplantation, the Veneto Eye Bank Foundation is involved in procurement, screening, storage and distribution of ocular tissues for transplantation, mostly for corneal diseases. This generates about 2 millions of pieces of information per year. The Veneto Eye Bank Foundation is a high volume eye bank, accounting for almost 50 percent of the corneal transplantations performed all over Italy. Many of this information concern security and/or quality issues. They are very relevant to the final clinical outcome of the surgery.

The problem that the Veneto Eye Bank Foundation was facing is that the information are generated or coming from different sources – in most cases they are manually generated and reported. Only in few cases they are processed with an IT approach. As a consequence, there was a lot of paper work, many repetitions of operations and it was mandatory to have a redundant system of control in order to avoid mistakes that could affect the safety of the patients.

The Veneto Eye Bank Foundation decided to implement a project to make a kind of ICT revolution of an eye bank. It is the first project of this kind in Europe. The Foundation was lucky to find partners, who supported about 50 percent of the budget. The remaining 50 percent came from the revenues of the Foundation's economic activities.

The Eye Bank Foundation implemented a web platform system, in which each operator contributes, either remotely or locally. Remotely means in the hospital where the tissue is donated or recovered, or locally, e.g., in the laboratory, in the administration department or in the programming and statistics department. All the data are now collected and stored in this unique platform and this allows automatic processing of most of the data, automatic controls and reliable and permanent storage.

One example of the interface that was developed for the internal operator or the physicians that go for a recovery is that they do not work with paper anymore, but with an iPad that communicates remotely and automatically.

As a partner of the project, InfoCert assisted in implementing the digital signature and the substitute archiving of all the information. It is mandatory in Europe to store this type of information for 30 years after surgery.

It took 2 years to establish the network of partners and further 2 years to develop the platform which is now being tested and will be validated by the end of this year. The total cost of the project will be 400 000 euros.

MICHÈLE THONNET, Official Representative of the French Ministry of Social Affairs and Health in the European & international e-Health Domain, France, addressed the challenges of

eHealth for eHealth: Designing Services for Healthy Citizens

We all face the same challenges, in the US, the EU, Asia and Middle East, but in order to move forward it is very important to cooperate and to co-design since the beginning with all the stakeholders. This is a very big challenge, because, even if people use the same words in international English, it is not so easy to understand the same things behind the same words. Interoperability is very important, not only of technology but also of syntax, of culture, of semantics and to use as far as possible the directives, the law, the regulation etc. – not to make new pieces of text but to reuse it in another way as a facilitator. How to reshape the legal barrier in order to be facilitator and try to create a circle of trust.

In most of the domains e-Services are very professional and there is no reason why for citizens and patients it would be less professional. However, for the time being this is more or less the case except for very well designed and customized local, regional or national projects, but not for all people wherever they would like to live of travel.

ICT gives huge advantage but it is less easy when trying to turn this into practice. Most people speak about reducing cost. France doesn't think that this is possible, but mastering costs through innovative models would be good news. France is trying to design, maybe not a digital healthcare environment, but a digital environment for people to be healthy and for the well-being and to forget about the care if we can as much as we can.

The difficulty s there: Healthcare is a very complex socio-technical specialized system of systems where the "goods" are alive and unpredictable. Reforming the healthcare system is a necessity.

The role of the public authorities is not to do everything, but to try to make things happening and to co-organise and to try to give the right incentive for people who could make it happen. The most difficult thing is to sustain the health system. A scalable solution and sustainability is the model everyone wants to achieve.

How to deal with this in different countries: In the EU, health is not part of the EU treaty. Health is a national prerogative and this is the reason why each country has different laws, but also why the projects are more or less local or national and less European -- unless there are sustainable EU projects.

Based on voluntary cooperation, the EHR modelling started in 2007. A kind of strategy or action plan was prepared based on the so-called Mobility Directive in order to provide the same services to the people who are travelling than the services that they get when they are at home. 2007 the work started with designing a very simple schema with the EPR in the middle -- and not the patient or the citizen, but something people could travel with, such as an USB-key with security issue. The work required cooperation with many people in order to ensure interoperability and standardization of the so-called functional element that needed. It is part of the ISO model, rebuilt for the eHealth world.

This was then tested in large scale pilots like epSOS, european patients Smart Open Services. The way the project was designed was to transform the ideal vision of politicians, industry and patients into reality -- in order to have lessons learned and to turn

these lessons learned into some more reality in terms of standards, the legal point of view, semantic services and citizens. The US is interested in learning more about this experience and its outcome.

There is a lot of law and regulation at the EU level.

The services address not only services such as EHR already in use, but also to give the possibility to each person, citizens, patients and health professionals, to get the most important value from the Internet, but with having in mind a possibility to judge whether the information for citizens, patients and health professionals is accurate and a safe information. This is a very different service, but it is important to not just get overwhelmed with all the information in the Internet and not knowing how to deal with it. That is why at the EU level, there are some kind of rules, such as the Directive on Patient Rights in Cross-border Healthcare in order to enable patients to know exactly what are their rights and how to deal with this in whatever place.

It is neither only bottom-up nor only top-down which is the best approach. We have to iterate between both, according to what the one is able to implement and what the other is able to implement. What is important is to not to co-design, not to develop and implement, but only when there is adoption in the daily use, we really gain something.

In order to reach this, a governance model on three levels was designed: policies, strategic and operational. It is based on an EU directive. Security, identity, authentication, patients, citizens etc. – all these building blocks together are needed in order to succeed. Therefore, the a system has been designed, not to harmonize everything in the various countries, but to build upon what already exists. It is not possible to rebuild from scratch, this can be done in EU projects, but not in the real world. This is one if the reasons why interoperability is key.

These three levels need to be arranged into some kind of operational level and the more political one, because if there are good results and solutions, but if the politicians doesn't give a any resources it is not possible. Therefore a simple kind of operational roadmap through what the so-called eHealth Governance Initiative has been created to give some power to the people in order to convince politicians and make the industry becoming part of it. The focus is on convergence, not to harmonization, because this would not be the right the solution.

This eHealth Governance Initiative is made of representative of public authorities dealing with some kind of common priorities and resources in order to make that happen. It is not from scratch but based on a number of projects. This paves the way for the next so-called Horizon 2020 of the EC. This initiative is dealing with how to reuse the building block of most of the EU projects regarding Identification, eTransaction, eHealth etc. in order to build what the EC calls "common European facilities" in order to make transversalily reality. We need to have both the decision making and the production side together in order to make this reality. We need adequate resources, but on top of the technology we need to take care of the culture and to be sure that the governance model respects each of the actors, because without all the stakeholders, standardisation and interoperability it is difficult to make it reality.

MARIO PO', Executive Director, Azienda ULSS Venezia, Italy, presented a public health provider's view of the current situation in Italy. He asked three questions in the context of

Increase safety of tourists and all people in Venice

The first question is: Why don' t we talk about the European Digital Agenda? Or the Italian Digital Agenda?

The Italian situation is not good. The ICT situation of the National Healthcare System is not good as well. Many rules, protocols, codes have been defined, but today we don't know if there is still a national authority that works on ICT and on the guide of Italy's digital agenda.

The second question: The development of the clinical documents management takes too much time. Why are we still working on Electronic Patient Records? People think that this project is right for high standards hospitals, physicians, nurses and maybe right for a good budget. I think, on the contrary, that the framework of healthcare is different: clinical and not documental issues. Here is our priority: the development of clinical activities thanks to digital technology.

The third question: Italy is lagging behind because it is not able to guide its health organization. Electronic Patient Records have been a default because of the organizational problems. Telemedicine, cloud computing, integrated systems, etc. have to be a chance. Why don't we approach the innovation by a preliminary management of our organization?

To conclude, we have to change many frameworks and references if we want the ICT divide in the Italian healthcare system not to be another default but a strong opportunity for a wise balanced growth.

The chair of the session, **GIAMPAOLO ARMELLIN**, Head of Research Unit GPI Group, provided some final comments: There had been many reflections on the issue of technology and we still talk about technology, because we use keywords and we use technological language. Nevertheless, we are strongly introducing other ideas concerning services, using a common language etc. We could adopt a very practical approach to make these services growing and trying to develop standards from the bottom. This could be very interesting in order to provide service and to make them running in a very concrete way.

The other issue is about sustainability. We always talk about the sustainability of our projects, but the problem is to make sustainable all the services coming out of the projects. This is a problem about business modelling. We have to face that and it is very important to involve people in this project.

The moderator, **SHAI MISAN**, CEO Medic4all, closed the session with some concluding remarks: Considering the systemic health process, meaning from prevention to therapy and to rehabilitation, that is basically the marketplace where the panellists will promote a solutions in the next future. The question we have to asked ourselves is: How these platforms will influence for example the traditional setting of doctor and patient relationship over remote platforms? Another question is how to align medical culture and services in Europe in a way to have the same level of services all over Europe? eHealth will turn down obstacles, but how to support that in the different geographies?

--- ✦✦✦ ---

eProcurement & Open Government Strategy & Reality

The **chair** and **moderator** of this session, **LUCA MASTROGREGORI, Head of eProcurement Strategies Department, Consip**, Italy, [www.consip.it], welcomed the audience and introduced the objective of this session.

The session aims at bringing the overall theme of the Global Forum, i.e., strategies to grow stronger communities and businesses, in the specific environment of public procurement. Citizens and entrepreneurs expect from governments to help the society and the economy to grow within an open approach to the government's activities. In public procurement this is very important and true. Public procurement accounts in average 15 to 17 percent of the GDP of the EU countries. Hence, it is a rather big leverage for economic growth and prosperity. It is very important for public administrations to drive public expenditure in an open way.

The session provides a journey trough some experiences made in how public procurement, through the adoption of eProcurement, is driving innovation in the government entities and in the industries. More and more governments are becoming a driver of innovation in the economy. In the public procurement and the eProcurement arena this is particularly true, because the public spending activity going digital is helping the entire economy to go digital.

The panel is composed of experts from public administrations, from companies, economic operators' associations and economic operators, both big and small. The will present some experiences in order to point out what does it mean to apply and to make open data in the public procurement environment a reality, and what are the opportunities and what are the obstacles and challenges.

NITYA KARMAKAR, Professor Macquarie University, Sydney, Australia, gave the overall framework and background for public procurement and discussed the question of the role of ethics in procurement:

Ethics in Procurement:
A Milestone for creating a transparent Business Environment

Ethics is about choices of individuals It is a concept that signifies how people act in order to make the "right" choice, and produce "good" behaviour. It should be taken very seriously. Ethics is the guidelines or rules of conduct by which we aim to live and should not harm to others. It is the study of what is good or right for human beings and what goals people ought to pursue and what actions they ought to perform.

Business ethics are ethical principles and rules in a commercial context. It examines the specific ethical issues in a business environment – open data, cloud computing, cyber security …. Whatever business it is, there should be this kind of values -- applied in specific business situations. It describes how one should act in a business or workplace.

Why are ethics so important? There have been recent high profile scandals involving organisations such as the organisations involved in the global financial crisis, Enron, WorldCom in the USA, HIH insurance, One-Tel or AWB in Australia. Ethics, corporate governance and accountability are all interrelated within an ethics framework.

Procurement is the entire process by which businesses acquire the resources that they need to carry out their missions and administer their projects and programs. There has to be a good relationship between buyers and sellers. Ethics is always an important issue in project procurement. Without any ethical values it will be useless to do anything.

There are several ethical theories: The normative theory, which is the consequential theory (or teleological perspective). This is the theory where actions are just morally-right according to their consequences. Then again, the duty-based theory, or deontological perspective where actions are just morally-right based on how well the action sticks on rules and duties. There is also the theory of rights referring to legal and contractual right, and the theory of justice referring to distributive justice.

However, in general, every business has its own values and norms. Utilitrianism is the model of ethical decision making. Is a very simple and pragmatic model: Define the problem and then, identify and prioritise the ethical principles. Identify all options, consider the options and finally, select the best option for the action.

With regards to procurement in digital age, trust, commitment and transparency are of highest importance to build up a smart enterprise.

Current trends in the industry: Politically, more legislation is needed. Socially, there is the search for trust -- easy to use, easy to obtain, ad low cost. Economically, reduce the costs for transactions. Technologically, a higher level of security is needed. New payment systems are created outside the banking infrastructure (e.g., eCharge Phone).

Whatever rules we set up, there are still people who would like to have quick money. Ethics are the implicit rules that guide us in our everyday behaviour, thoughts and actions. Morals are how a person approaches and responds to an ethical issue.

Grounds for justifying moral principles are religion, ethics and law. The principles of evaluation and rules of conduct are intrinsic, e.g., freedom and happiness, or instrumental, e.g., money, computers, …

Swami Vivekananda defined ethics based on Hindu philosophy. Money does not pay, nor name; fame does not pay, nor learning. It is love that pays; it is character that cleaves its way through adamantine walls of difficulties. This shows a deep commitment to social welfare and a strict code of morality. He supposed that there are two tendencies in human nature: Harmonize the ideal with the life and live the life to the ideals. If we live our life to the ideals, than we shall not do any bad things.

The seven deadly sins by Mahatma Gandhi: Wealth without work, pleasure without conscience, knowledge without character, commerce (business) without morality (ethics), science without humanity, religion without sacrifice, and politics without principle.

Ancient wisdom based on Vedanta (Hindu philosophy): 1) Morality is an expression of the innate purity of the Self while immorality is born of ignorance of our true Self. Ethics is based on freedom not compulsion. 2)That which is selfish is immoral, and that which is

unselfish is moral. 3) Ethics is unity, its basis is love. This expression of oneness is what we call love and sympathy, and it is the basis of all our ethics and morality. 4) Basis for equality and equity. 5) Strength.

Ethics is always an important issue in business and life. eProcurement can help communities and business to grow through digitisation and transparency.

The chair and moderator, **Luca Mastrogregori**, Consip, emphasized trust and transparency. eProcurement is not just a way to speed up and to rationalize processes as it is. It is not just a way to get value for money thanks to the openness and competition that eProcurement and digitisation of the processes can bring. It is a way to put trust into the public procurement environment. Trough transparency, the public spending, that is such an important part of the governmental action, can gain trust and the public spending marketplace is going to gain trust from both parts of the market – the buyer's side and the supplier's side. Transparency is the building block for trust.

ROBERTO DE RICCARDIS, Head of Strategies, Program Management & Business Consulting dept., ARCA – Agenzia Regionale Regione Lombardia (Regional Procurement Body), Italy, provided an impressive presentation of

The Region Lombardia Experience

The Lombardy region is a very large and the most populated Italian region (more than 10 million inhabitants) and produces more than 20 percent of the GDP of Italy. The Lombardy region is as large as some of the smaller EU Member States. With 1 546 municipalities the region has the highest number of municipalities in Italy. It is working a lot with hospitals and regional and local entities.

ARCA was created in 2007. The organization is first focused on central procurement, i.e., optimisation of the public procurement expenditure, bundling of public needs and awarding public contracts or concluding framework agreements. ARCA is also promoting and developing eProcurement, using the SINTEL eTendering platform and other instruments. Moreover, ARCA is providing specialist consultancy to its clients and as SUA centralized contracting authority is also performing the complete tender management of public entities.

ARCA has more than 1 700 clients, the public entities it is working for, but ARCA is also dealing with all the Italian and European companies. At the moment, there are more than 16 000 firms using ARCA eTender platform. The organisation does its best to put together the need of the regional market with suppliers from all over Italy and Europe.

When taking about eProcurement, ARCA doesn't like to talk only about eTendering. Most people who are talking about eProcurement usually focus on eTendering. ARCA's vision is that eProcurement should involve the entire process, from A to Z.

ARCA developed several instruments to collect the market needs, to talk to the suppliers by means of web instruments, and to collect the data to analyse the market and the needs. In 2008, ARCA developed the eTendering platform SINTEL, and in 2010, the eContracting platform NECA. The organization is now working on eInvoicing and ePayment. These are the main instruments, however, besides this there are other instrument to help managing the eProcurement process: The web portals, forum and collaborative tools to facilitate

collaboration between all the actors and enabling the 1 700 entities to talk to each other, to share experiences, documentation and knowledge. ARCA developed data warehouse and business intelligence instruments to analyse the data and to share the data with the government just monitor the expenditure, to carry out analysis and reporting and to realise cost savings as far as possible. Moreover, the is the customer relationship management and ARCA also uses certified emails and digital signatures. ARCA is working and developing these instruments to make eProcurement as strong and as effective as possible.

Since 2008, more than 10 000 eTenders have been launched on the platform, which corresponds to a total value of almost 6 billion euro. There are more then 16 000 registered economic operators and more than 1 000 regional entities using the platform. Not all of them are obliged to use the platform: in the Lombardy region only the central government and the main entities are obliged to use eTender and eProcurement instruments. The local municipalities are free to use them. If there are more than 1 000 entities using the platform, this means that these municipalities find it useful and effective to use eProcurement tools to launch tenders.

The same for the eContracting platform: At the moment, there are 26 framework agreements managed on this platform. The total expenditure in terms of orders amounts to almost 400 million euros. There are more than 2 000 products on the catalogue and 146 buyers on the platform. ARCA is currently working on the automatic integration between all these systems, the local and regional entities and the suppliers.

ARCA is working a lot on data integration and data availability to reach the goal of open and transparent eProcurement. Once all these systems and the integration between systems as well as the functionalities and data management is available, it is possible to spread these data outside the company and to share these data with all the stakeholders of the regional procurement government, but also other companies or even citizens. Open data is not only affecting interaction between suppliers, firms and other regional governmental entities but also citizens. At present, in Italy there more than 7 900 datasets from public administrations; all of them are available in the open data format. The Lombardy region is at the second position (603 datasets).

ARCA contributes to these open data and at the moment there are 4 datasets available in the regional systems: There are datasets concerning the eTenders launched on the platform, and datasets which are the same than the previous ones, but at a lot level which is much more detailed. Moreover, there are datasets concerning public real estate offers and these are data which citizens are really interested in. The fourth dataset available concerns ARCA's own operations, the ARCA framework agreements.

There are two channels through which data are accessible: the Arca portal and the regional open data portal. The regional open data portal will be connected to the Italian open data portal very soon. There is also the European open data portal, but this is still in a project stage.

In the ARCA portal it is possible to have access to all the datasets. In the regional open data portal, data concerning the tenders on the eTender platform and details at the lot level can be accesses. However, very soon, datasets about real estate and the ARCA framework agreements will be available. The regional open data portal was published one year ago has already a lot of visits and downloads.

The Lombardy region has more than 600 open datasets available and these datasets are ranking 6th at the moment, which means that people are using it. Last year, the Lombardy region promoted and financed the development of Android and iOS Apps to make this open data available and useful for people. Open data is a first step, another step is to make the data easy to use. Many young people participated in this promotion and today, some iOS Apps available. Companies and firms can install the App and have the possibility to check and to navigate all the information. They also have the possibility to save favourites and reminders on tenders deadlines. It is a way to promote the participation of small companies in public procurement.

As regards the impact of eProcurement on tendering transparency, an IDC report has been published in June 2013. According to this study, the Lombardy Region has the best ranking concerning transparency indicators.

An aspect that could be improved to further increase transparency is the online availability of documentation. This could be much better. The reason for this is that it is not mandatory. When entities are using the platforms, they are not obliged to share their information -- it is possible to do it, but it is not mandatory. The same for non-discretionary technical evaluation of bidders. This is another issue which could be improve transparency.

What can be done else to improve transparency? First of all, laws and regulation could make documentation sharing mandatory. But also on monitoring the open data availability, integration and common standards to make open data really used. Second, strengthen the platforms by improving functionalities to manage non-discretional evaluation criteria, integration between platforms and a better use of Business Intelligence. And finally, a change of management, both on the supplier and government entities side.

The chair and moderator, **Luca Mastrogregori**, Consip, then stated that putting eProcurement in place is difficult. The adoption of eProcurement in public procurement is rather low. In average, only 10 to 15 percent of all the public procurement activities in Europe are performed on digital platforms. The adoption of the technology for public procurement started in 2000. This shows that the process of digitalizing public procurement is rather slow. However, this process is the basis to build up data in order make open data policy in public procurement a reality.

The Lombardy experience shows a real adoption of open data in public procurement. It shows that it is possible, and this is one of the reasons why we are putting IT into public procurement: to provide communities and businesses with data about how money is spent in governmental activities.

The most important element is the cultural element -- the change management point outlined earlier. The chair then would like to know how was the reaction of the public administration to the publication of public procurement data in the Lombardy region? What where the main obstacles and issues for using the ARCA platform in this context?

Roberto De Riccardis, ARCA, explained that at the moment ARCA did not encounter any resistance or problems concerning the publication of data. First of all, because ARCA remained at a higher level. There are information at lot level, but as mentioned, it is not mandatory to publish documents or tender documentation on the platform. So, if a local entity or regional agency doesn't want to publish its documentation, it just won't do it.

There would be problems if ARCA aimed at publishing data concerning transactions, orders or contracts. ARCA is able to do this, because on the eContracting platform all this precious data is available (what is bought, how the money is spent, what is spent on a daily basis, etc.), but at the moment, it is not put in the open data format for privacy reasons.

AUGUSTO CORIGLIONI, Chairman Information Technology & Delegate for Research and Innovation, UNINDUSTRIA (Confindustria Lazio), Italy, focused on how economic operators are living this innovation in public procurement:

Unindustria is one of the main business associations in the Confindustria, the main organisation representing Italian manufacturing and services companies.

In Europe, all associations are supporting the Digital Agenda of the European Commission. When it comes to public procurement, we are facing one of the most exiting challenges. First of all, because we would like to innovate the relationship between the government and suppliers or vendors. But it is not just innovation on the government's side, companies as well should do something new and act differently. Moreover, we have to guarantee the respect of the rules and regulations in public procurement, because citizens have the right and duty to understand how the money is spent by the government.

Technology is not an issue, it is an opportunity and an enabler. The main topic is how we want to use it. In addition, when talking about public procurement, one has to keep in mind that technology changes very fast and definitely faster than bureaucracy, rules and regulations. Bureaucracy – in the sense of a public organisation – and politicians have to realise that their role and their way of thinking have to change.

Smarter enterprises is also a question of culture, education and support. In Europe, there is not so much public procurement by electronic means. On the other hand, there are a lot of SMEs in Europe. The EU is saying that any single euro invested in innovation will return in an increased GDP. On the other hand, there is a cultural issue. SMEs need support. This is one of the role of business associations, together with the government.

They have to understand that they must invest in technology and in new tools. On the other hand, it is important to gain trust in public procurement. This is a worldwide issue. Probably eProcurement can solve the issue, but we have to gain trust in that! To enable innovators or newcomers to enter the global market, or at least the EU market, there is a need for clear regulation and rules.

The Lombardy region is a clear example that something can be done. But regions are different. It is also the task of associations such as Unindustria to push SMEs.

Unindustria is trying to convince its members to change their point of view. It is not a matter of the cost of innovation. They should realize what is the cost to not innovate, what is the cost to not have the opportunity to compete differently and to change.

As regards the opportunity eProcurement provides together with open data, it is very interesting for smart enterprises to analyse what is going on of the market, to understand the behaviour, for instance the buying behaviour of the Lombardy region: what they buy, when, which cycle their follow etc. – but even if it is a very important experience, but from a global perspective one singe region is not enough.

Smart enterprises should go together with smart governments. It's a joint effort, hopefully based on the right legislation and a unique legislation across Europe. There is no need for so much legislation, because technology evolves so fast. There is a need for some guidelines. And the need to talk to each other -- governments and enterprises, for two main reasons: to be clear and to simplify. Communication is important because it is not possible to play a game where only one of the two parts has the right to define the rules of the game. To play this new game, enterprises and governments all over Europe need to talk in order to ensure that the rules come from the reality, from the daily life, from real experience, from the governments with their constraints but also the enterprises with their particular situation.

Companies, first of all, need to understand this process, and the government needs to show what is inside and try to understand that we need to make our life simple. Cooperation is key. Public spending could be something that could reactivate the European economy. Moreover, eProcurement could be important to guarantee more transparency and effectiveness. But there is no need for so much laws.

They are large differences, some countries are more effective in the use of the Internet than others, but politics are quite the same. We need to be more effective now, because tomorrow it could be to late for many European SMEs.

The chair and moderator, **Luca Mastrogregori**, Consip, highlighted the call for public administrations to open the door to make information available in order to help enterprises, and in particular SMEs, to grow and to participate.

Based on some legislation, ChileCompra, the national procurement body in Chile, has now put online almost 80 percent of the public procurement transactions. They launched last year the public portal Analiza, which is a portal to analyse the data of public procurement in Chile. It is very interesting to see how public administrations, enterprises, academic people and citizens can analyse data about public procurement in order to know who is buying what, where etc. They also have some Business Intelligence tools in order to understand how many companies respond to a certain request, what is the ratio of participation etc. These are a lot of data which are made available to the entire market place. This is possible with procurement today – once we have the data. It is possible to open the doors of public procurement to enterprises and citizens.

DIEGO BRAVAR, Chairman & CEO, TBS Group, Italy, [http://www.italtbs.com], presented the experience of TBS Group in the healthcare industry, showing how data and information are key to competitiveness. It is the example of how public procurement data can help a company to become more and more competitive:

Clinical engineering & ICT outsourcing services for better procurement and management in healthcare

TBS Group was founded in 1987 as the result of an Italian Research Council project. Today, the company has about 2 300 employees and is active in 18 countries. TBS is managing medical and ICT technology. TBS is an AIM listed company since December 2009.

TBS Group has been founded after identifying a low level of efficiency in the medical technologies management in Italian hospitals, compared to a US benchmark.

The vision of TBS is to improve the quality of healthcare and to reduce costs related to the medical and ICT systems. TBS Group develops outsourced integrated clinical engineering and e-Health services and products in order to ensure that the use of technology in hospitals, social healthcare institutions and homes is safe, effective and efficient. To this end, "technology" means biomedical equipment and other medical devices, medical IT systems and solutions, telecare and telemedicine systems and solutions.

Today, TBS Group is managing more than 900 000 biomedical equipment, 150 000 ICT systems and 40 000 telecare and telemedicine systems. The vision of TBS is to grow in an ethic manner. TBS' technicians and engineers are working in all EU countries, in Asian hospitals or public administrations. TBS is headquartered in Trieste, but is working in Europe, Asia, Africa and South America.

Medial equipment today is a medical IT system. 50 percent of the medical equipment are producing data signals and images. Today, we have a digital hospital with a need for different products and different services. The idea is how to mange all this and at the same time improve quality. TBS Group has developed an integrated approach to the clinical engineering and the outsourcing of medical and information technology services.

Today, hospitals buy too much medical equipment and ICT systems and solutions. This is a waste of money. It is physician driven, silos purchase. Physicians want to help their patients, but on the other hand, there are not enough resources. The medical equipment is about 20 percent of the total medical assets. The ratio of the medical and ICT maintenance cost and the total medical equipment and ICT acquisition costs is around 4-6 percent. The richer a country is, the more it spends for care and the more medical equipment is purchased. The US has the double of medical equipment of Europe, because they are spending 16 percent of the GDP per capita (against 8 percent of the GDP per capita in Europe).

However, at the end, developed countries and emergent markets are facing the same problem today, which is the economic crisis. As an example, the average delay in payment of suppliers in Italy is 259 days (against 30 for Germany and 65 for France).

Clinical engineering and ICT outsourced services can solve the problem. The estimated current value for a possible lease back operation is around 4 billion euros for paying debts or for doing medical and IT investments. Further possible savings in the Italian hospitals through further implementation of integrated clinical engineering and ICT outsourcing services could amount to around 140 million euros per year. Further possible

savings in the Italian hospitals through efficiencies and scale economies with integrated purchase of medical and ICT technologies could amount to around 110 million euros per year.

As a result of a strong demand for tools for a greater rationalization of the sector of medical devices, the Italian Ministry of Health has conducted many important projects that involved the contribution of TBS Group in the field of clinical engineering, ICT projects and related data banks. Today, the TBS Code Data Bank comprises more than 2 000 classes of medical equipment and over 9 000 companies.

TBS Group has successfully carried out two special projects for the Italian Ministry of Public Health: The experimental establishment of the national Observatory of Prices and Technologies and the consolidation and effectiveness in the Italian National Health System of the Observatory of Prices and Technologies. These projects continued until 2010 with the maintenance and update of the CIVAB codes. Since 2011, TBS Group continued the development of these codes (now TBS Medical Device & ICT Codes) and data-banks. Today, the TBS Group Prices observatory contain more than 20 000 records with data from all over Europe, India and China. This data base is used to participate in tenders to expanding business: Three contracts have been signed in China and one in Honduras in 2013.

But there is not just procurement, there are other value added services: Providing an integrated plan for procurement and related integrated services, such as medical equipment, ICT systems and solutions, installation and testing, user training, maintenance and consumables availability.

Today's entrepreneurs have to think globally and must work with ethics. Otherwise they will fail.

CARLO PARMEGGIANI, Director Public Sector - South Europe, Intel, Italy, presented a most interesting insight into Intel's experience:

One could say that Intel is transforming sand. Specifically Intel is building its components with the silicon that is in the sand, to provide its components and solutions to the market in order to basically enable this digital world.

Some figures coming from the Confindustria Digitale last week, showing the gaps – or opportunities – in Italy:

By 2015, 50 percent of the Europeans should buy online. Currently, the average in the EU is 45 percent, and 17 percent in Italy. This represents a rather important gap, or opportunity, to cover. By 2015, 50 percent of the citizens are using the eGovernment services. The current average in the EU is 44 percent, the Italian average is 19 percent. By 2015, we should expect 33 percent of the EU companies selling online. Today, only 6 countries in Europe are above 20 percent, in Italy there are only 4 percent. The opportunity is huge. However, one has to keep in mind, that this digital world is not linear, but logarithmic. Once things start to happen, they are happening very fast.

Intel is investing several million dollars in transforming education. Education is key in order to seize the opportunities that exist in the world.

Consip is one of the leading companies for procurement around Europe. Intel took the example of the electronic market for the public administration, which is basically a portal where public administration can buy any kinds of goods. The company is trying to use the potential of this digital instrument and to address and to promote such electronic portal for the public instructing. It is a portal dedicated to the leaning systems, where people are able to test solutions. One of the big issues we have to address is the fragmentation on the market -- the school system is more or less on the same stage. The opportunity to have a portal to address the solution for the school system is something that helps the transformation in a school.

Intel started to address this two years ago. Probably in one month, the system will work in real life. This will enable a different scale of the transformation of the school system, also because talking with the education world in Italy means taking to more than 50 percent of the Italian population. This might generate an ethic system in using the digital devices, that can also expand, not only on a school transformation, but also on inclusion of the citizens that were not able to get the usage the digital systems. This is very important because, once public administrations are offering eServices to the citizen, they also have to address how to involve the entire population. Europe is quite in good shape as far as broadband is concerned. Maybe there is still a bit more to do on large broadband, because due to the increasing amount of data to be managed over the Net.

The chair and moderator, **Luca Mastrogregori**, Consip, briefly summarized the session: We are at the beginning of a long and difficult way, which is to build the basis for a real open data area in public procurement. And the basis is to put online public procurement, because if we don't have data, there is no open data. It is not easy and technology is not the issue. The issue is the culture of the entities that are working in public procurement, and the culture is made of education, law, rules and praxis. It is a very complex world and it is difficult to manage the change in this world. However, the today's session once more confirmed that it is the right way to go.

--- ✦✦✦ ---

Q&A

Several questions were addressed to **Roberto De Riccardis**, ARCA: How the eProcurement platform of the Lombardy region relates to the Italian Public Administration e-Marketplace (MePA) managed by Consip? How enterprises taking part in the regional platform manage to be at different platforms? Is the number of companies currently participating satisfactory? What are the private data addressed?

Roberto De Riccardis, ARCA, explained that, as regards the relationship between MePA and the platforms of the Lombardy region, there is a difference: MePA is a marketplace. Consip has a lot of certified suppliers and they can sell products on the platform. The two main platforms of the Lombardy region are the one for eTendering, which all the entities can use for free and independently of their own to launch of tenders, and the other one for eContracting and eOrdering, which is at the moment only for ARCA framework agreements. Hence, all the entities can buy, but there should be a framework agreement of ARCA. It is not a marketplace, but a platform to make eOrders and eContracts and to track the process

between each independent entity and the suppliers.

As many regional and local entities don't have information systems, ARCA is also providing its platform as outsourcing to be used by less advanced entities. It is possible to manage through this platform the organization, the budget, the workflow, order tacking etc.

With regard to number of suppliers, one has to consider the two platforms. The companies can register to all the platforms. There are 16 000 companies, of which 80 percent are micro or small firms. They are informed about the tenders, can participate, receive newsletters and information on what is going on in the regional government. There is a lot of transparency, information and training for these registered firms. Of course they could participate even without the eProcurement platform, but this way it is easier and there is a lot more transparency.

The other one is the eContracting platform: There is no good or bad figure concerning the number of suppliers -- these are the suppliers who won a tender.

As regards private data, ARCA's vision is to put in relationship the data related to ARCA's framework agreements and transactions with the other data available in the Lombardy region. In the Lombardy region and at the national government's level there are observatories, thus data warehouse and information, about products and prices. ARCA's vision is to put together the information. However, eProcurement is still a small piece of the total procurement.
It would be possible to put together ARCA's data with other data available in national observatories, regional observatories, medical observatories and the Italian authority for public contracts. But at the moment, this is private data because every entity is buying, spending money, having a budget and ARCA doesn't know if they want to share these information. Then, there is the regional government. Again, there are data about the regional expenditure and maybe they want to share it with Consip -- maybe not. It is a system matter. If the Italian system decides to put together all the data, it would be feasible. It requires a central authority decision and strategy. At the moment there are limits to this kind of vision.

Augusto Coriglioni, UNINDUSTRIA, added that its also a question of education enterprises, all over Europe. An company trying to innovate its daily business or to sell internationally, or at least European-wide, will encounter problems because there are different systems in each country. There is a block of people who don't want to innovate – on both sides, governments and enterprises. It is an excuse for not changing. On the other hand, innovators have not an easy life. It is not easy to interact – there is a need for standards, something that helps them understanding how to work. Within these standards could be some exceptions, but we can't have everything different. Europe should take some tough decisions: Is the best procurement model is in France, Italy or elsewhere, we should try to adapt to this model. We don't have much time to loose. It is a big challenge, especially in the area of procurement, because it is about our money, but sometimes one has just do things. The same is for open data.

In his conclusion, the chair and moderator, **Luca Mastrogregori**, Consip, stated that putting online 100 percent, or even 70 percent, of public procurement in Europe or Italy, is a very hard job. And it is very difficult to do this on just one platform. In Italy in 2011, there were more than 1 600 000 contracts awarded by more than 60 000 awarding authorities. It is very challenging to understand what is the right level of centralisation of buying activities, centralisation of platforms in order to rationalize this world. And this is the same situation all over Europe. There are some strongly centralized public procurement systems in Korea or Chile, but these are exceptions. The logical way is to centralize, but less than 60 000 awarding authorities. And not just one for all. Standardization is the way to find out principles, to find out standards, to find out processes in order to share this experiences and to have this homogenous public procurement environment. This is the way ahead, but it is a long way.

--- ✦✦✦ ---

WIL -- Women in Leadership
Women's careers in the Digital Age

On October 29th, WIL participated at the Global Forum in ICT conference by hosting a breakfast session focused on "Women's Careers in the Digital Age", which looked at two aspects, the first being the opportunities offered in the Digital Sector and the second focused on best practices from companies- what is being done to encourage and retain women in digital sector.

WIL has been involved with the Global Forum for the past 4 years thanks to Sylviane Toporkoff, WIL member, Founder & Partner at Items international and President of Global Forum/Shaping the Future. It is always wonderful to both attend and participate in an event such as the Global Forum, and this year WIL had a full room of men and women, as well as a wonderful panel of speakers including Maureen Ohlhausen, Federal Trade Commissioner for the United States; Thaima Samman, WIL President; Gabrielle Gauthey, Executive Vice-President Global Government and Public Affairs, Alcatel Lucent; Eliane Filoet, Co-Founder & Editor of Ubergizmo; Marta Turk, President of the CCI- Regional Chamber of Commerce-Ljubljana & Founder of the Association of Women Entrepreneurs in Slovenia; Marcella Logli, Director of Corporate Communication and Public Relations at Telecom Italia SPA and General Secretary at The Fondazione Telecom Italia and Claudia Selli, EU Affairs Director at AT&T. WIL also included one of our great Emerging Leader's Myriam El-Ouni, Alliance Manager at Microsoft in the session to deliver a wrap-up and short testimony.

Ms. Ohlhausen, delivered an opening keynote where she imparted a wealth of knowledge and encouraged women to identify future career trends, not just present day opportunities, particularly when working in fast paced innovative sectors like ICT. Additionally, Ms. Ohlhausen expressed the importance of networking and finding a mentor, as they are integral to gathering information, making connections and getting yourself known.

Delving into the panel session, Thaima Samman set the tone of the discussion by highlighting the issue of the lack of women working or pursuing careers in the ICT sector and explaining the need to look at the root of the issue and find solutions to improve gender equality.

Opportunities in the Digital Sector

On the perspective of opportunities offered in the Digital Sector, Gabrielle Gauthey emphasised the vastness of the ICT sector and the diversified careers that encompass it, from specified technical opportunities to broader opportunities in areas like Human Resources and Government Affairs. Ms. Gauthey expressed that these opportunities are not only within the ICT sector itself, but that ICT related jobs exist in other sectors such as industry and transport. Bringing a different angle Eliane Fiolet, Founder of Ubergizmo, shared with the audience the surge of career possibilities in the field of online media such as blogging. She highlighted that more women than ever before are pursuing careers and becoming successful in blogging and internet media because women are the majority of users and there is significant work flexibility in this new field of work.

Re-emphasising the aspect of flexibility in digitally inclined careers, Thaima Samman shared that a recent internal study conducted by Lenovo on the topic of Women in ICT revealed not only that women enjoy working in the digital sector but also that the flexibility, challenging environment, innovation and contribution to core activities were the main reasons why. Marta Turk, then shared the perspective of female entrepreneurs and expressed that ICT is becoming the base for future development in entrepreneurship, both in the ICT sector and outside of it, hence the need to encourage women to seek opportunities and start businesses that are tech friendly.

Women in the Digital Sector & Best Practices

Sharing their best practices, Claudia Selli and Marcella Logli explained how their respective companies are addressing the recruitment and retention of women in ICT, Telecoms and Teleco's. Claudia Selli shared how AT&T is challenged in finding women with engineering backgrounds, especially now that the company is undergoing a transition into IP. To remedy this and encourage more women to enter the sector AT&T is offering the first tech-online degree with Georgia Institute of Technology in the United States. Additionally, AT&T has started an internal women's network with the aim of mentoring and fostering the potential of women, because they recognise that women bring a different and valuable perspective to the work place.

Marcella Logli similarly expressed the need for more women with ICT backgrounds, emphasising from her own personal experience as a graduate in informatics the number of career opportunities available. Ms. Logli advised that women actively seek out mentors and engage with them, as it is a valuable way to gain knowledge and greater understanding of any sector.

Wrapping-up the session WIL emerging leaders Myriam El Ouni summarised the advice that was shared and stressed the importance of encouraging women to pursue both education and careers in ICT to better equip themselves to take advantage of the endless opportunities offered in the 'digital age'.

Cross-Boundary Innovation Culture

JAY E. GILLETTE, Professor of Information and Communication Sciences, Center for Information and Communication Sciences and Senior Research Fellow, Digital Policy Institute **Ball State University**, USA, moderating, opened the second day of the Global Forum.

Pushing Paradigms for Innovation and Success: Factors Defining Primary Perception (Paradigms)

Paradigms are factors of primary perception. They are the frameworks that people use to look at as a sort of lens or window to look through the world. This phrase has been popularised by science writer Thomas Kuhn, in his "Structure of Scientific Revolutions".

What is our primary perception? People say, let's have a paradigm shift -- however, that can sometimes not be so easy on everybody. But how do we think about things that are new? How do we bring in the new? How do we push a paradigm from one place to another? What sorts of paradigms are we looking at?

One can see a pattern concerning people's primary perception or if they are oriented in or oriented out: For undergraduates and people on the lower schools the chief goal is self development, but at a graduate level it is professional development. The next is individuals who are self-centred. When looking at a three-years old, that person is actually the centre of the universe, in his paradigm. And as we grow older and more mature, we become other-centered. Leaders can be leader-centred. This can work out in various ways. Some bosses are good at the center of the organization and the organization shines outward from them like a fire of the sun, but the best leaders are group-centered and they put their people before them.

An organization which is internally-focused can change paradigms and become market and environment (externally) focused (e.g., by letting their staff working with clients in order to lean more about the clients' needs). R&D Management changed the paradigm and pushed from closed innovation to open innovation.

We are all in societies that are ethnocentric, centred on their own people and we would hope societies to become more cosmopolitan and more concerned with the world. Think locally and act globally. This is the paradigm push that is common to all of us.

Research results have shown that "extroverted" firms and regions do better -- confirms what we already feel: to look outward is to make a much better advance than looking inward.

"A key managerial implication of our research is that "extroverted" firms are more productive and derive disproportionate benefits from advances in IT and workplace organization. Companies that exploit this opportunity by using more information from customers, suppliers

and competitive benchmarks appear to outperform their rivals". "Our findings may also have implications for policy makers. There has been recent discussion of why IT appears to have led to greater productivity growth in some regions within the US than in others, and in some parts of the world than others." "Our findings suggest that the degree to which firms are networked with customers, suppliers, and partners is a potentially important factor explaining differences in IT-led productivity growth." [Tambe, Prasana, Lorin Hitt, and Erik Brynjolfsson (2012). The Extroverted Firm: How External Information Practices Affect Innovation and Productivity]

The sessions's chair, **BROR SALMELIN, Adviser Innovation Systems, DG CONNECT, European Commission**, shared some most interesting points:

Reflections from Open Innovation 2.0 paradigm

It is all about the change. The 2.0 generation of open innovation represents a clear break from the past. The Open Innovation Strategy and Policy Group has published a paper on Open Innovation 2.0 and what could be considered the drivers for extrovert companies and extrovert societies as well as how to position yourself in the ecosystems for new kinds of networking.

Innovation is simply to make things happen! One can have ideas, but if they are not making a difference, they are just ideas – not innovation. When we are looking at the innovation success factors, it is about speed, about how to create entirely new markets at the same time when being part of the innovation process and about what the constellation is when making this happen.

When looking at old innovation literature, there has been the view of linear innovation models, even in the first generation of open innovation models. Science-based linear innovation is not mainstream anymore.

Today, there is the mash-up innovation type, where the users are more in the centres, where you are actually more opportunistic than planning innovation for the future. Another important keyword is experimental – we need to do experiments in real world, to see what works and what doesn't in order to stretch the boundaries of technologies and societal development, even for policy-making. This is also true for the question of open data: we should experiment to see what to do far as policy measures – what works, what doesn't?

Talent attracts talent and when we are speaking about knowledge, one of the key issues is, how do we make the spikes grow? How do we attract talent? How do we multiply? How do we make these reflections? We are not bound with the physical boundaries anymore; we are in a global world. The key again is, how to make innovation successful, how foster in these spikes attracting talents.

And again, when looking at the Maslow-style hierarchy of needs of an organization, there is nothing new in the approach per se. We know that cost savings, revenue generation and customer satisfaction are those drivers which traditionally need to be okay in any organization. But the key in new innovation systems is how you position yourself within the ecosystem among the others. Are you open in your mind for those external ideas -- external implications which are reflecting the behaviour of your own company and also positioning? That is the key and that is a decisive factor.

Open Innovation 2.0 is a landscape of various kinds of elements, e.g., quadruple helix innovation. We hear a lot about triple helix innovation, where the public and private and civic sectors are working together with the research. But when looking at new markets' creation, there is the need to work more and more in real world, a fourth sector, so to say, with real people (for example, crowdsourcing), to create the win-win game, because otherwise one is risking entering the win-lose games. Other important elements are intersectional innovation, multidisciplinary.

One very important factor regarding intellectual capital is the more you have structural intellectual capital in a region, the more competitive it is. It is really about interaction of the various kinds of competencies. Again, as a consequence, we need to look at an innovation ecosystem, where we all are there and have multiple roles. And those companies who can manage and match the ideas competencies within this ecosystem, whether they are using more or less open or closed approaches, will be the winners. Because then they are creating the win-win game.

Innovation ecosystems, where we are all involved and really talking the opportunities will be the winning paradigm. If looking at statistics on innovation, competitiveness and happiness of the people, one can find all the same regions in all of those statistics. There must be something in this kind of quadruple helix Innovation process—private, public, civic, and people sectors.

GARY SHAPIRO, President & CEO of the CEA - Consumer Electronics Association, USA, delivered a great talk on:

Innovation is a belief system

One possible definition of innovation is that innovation is something which is different, which people are willing to pay for. However, this definition does not work when talking about innovation in government. There is value, efficiency etc.

Innovation is often defined by patents, by start-ups, by entrepreneurs. And we define it ultimately by counting revenues, because when you are innovative, you will do well.

What is it that makes us innovative? A lot of people point to Silicon Valley as the model for innovation in the world. Silicon Valley is very innovative in many ways, but it is not the only place in the US, and not the only place in the world. But it does have some benefits and the US has some benefits.

If you look at the number of Internet companies, the start-ups, the wealth created, you look in the content world, content creation, TV programming, motion pictures, music, articles etc., the US has some very good statistics in terms of innovation, wealth generation, content creation. So what is the US is doing right?

Culturally, the US is doing it right: Kids in the US are starting out by becoming an entrepreneur with a lemonade stand or as a paperboy. They are taught early on to make money. They are also taught to ask questions. The biggest question for American kids is "why?" or "why not?". Indeed, there are 200 000 Chinese students studying in the US at earlier and earlier ages, because the Chinese want to be innovative. They have a 10-year goal to be innovative. They must have 3.3 patents per 10 000 people according to their 10-

year plan. They realize that they do very well at manufacturing and copying, but they have not done well at innovating, so they are sending their kids to the US to learn how.

The US also benefits from phenomenal diversity. Homogeneity is a good thing if you want everyone to agree with each other, but if you want different ideas and thoughts, you need different people in a room. The US is the most diverse country in the world.

It is also the genetic pool in the US of people who wanted something better. 98 percent of immigrants came to the US because they were escaping; they wanted something better for their children. They came with very little money and had to innovate to succeed.

Furthermore, the US laws protect newcomers. There is the “due process clause” and the first amendment, so the government can not “crack down” on those challenging the status quo. If you are innovating and succeeding, you are probably changing someone else’s business model and by changing their business model, they are likely to run to the government and try to stop you.

When discussing what governments can do to encourage innovation, the first thing they can do is stop protecting the old businesses, because that is the tendency. Government should perform basic services, focus on infrastructure and focus on some of the good things in society that are innovative: easy access to capital and lowering taxes. When talking about innovation in Europe -- France raising the tax rate to be the highest in the world, is not the way to be innovative.

Having a flexible workforce is important to encourage innovation so that start-ups can start, people can invest, and can also shut it down if it is not working. That can not happen in Europe. Requirements are put on by governments that make it difficult to innovate. You have to be able to encourage new companies to come in and to get out. This is very important.

The US is jumping forward with new ways to raise capital through crowd sourcing and funding. It’s worth visiting www.kickstarter.com, they let anyone with an idea to come forward.

The Consumer Electronics Association represents 2 000 technology companies in the US. CEA also produces the world’s largest innovation event, the International CES, held every January in Las Vegas. That event has over 3 000 companies exhibiting, but there is also a separate area just for start-ups with over 200 companies. Anyone with an idea can share that idea with over 150 000 partners and retailers, over 5 000 media, and over 35 000 people from abroad, and innovation be encouraged.

Any region can have innovation because innovation is more of a mindset than anything else. Everyone has a Silicon Valley, but you have to look at your strength and address your weaknesses. Ask the question, what is it that we can do really well?

How can you become innovative? Look at the existing barriers to innovation and then create some positives. These barriers are partly cultural, but also legal. You have to have a legal structure that allows innovation to occur by removing these barriers. Also be careful not to protect the status quo businesses, because innovation is about creative destruction. It is about some old models dying so that new one may be created.

A book just came out in the US, showing that 100 percent of all the job growth in the last 5 years has come from creation of new businesses.

ENRICO FIORE, Chairman Truyoins, Israel/Italy, delivered an enthusiastic presentation on open innovation.

Innovation can be synthesized in three words: novelty, adoption and value. We have to think at different innovation. Different innovation is open innovation.

[A short video on open innovation was shown]

Life is to short. However, human beings are incredible resilient and we have to sort out between what we do for the living and what generally care about. We learn to be part of a world that makes sense, rather than accept the accidental allegation imposed by the market force, not only money. We have to live with our heart first and this is what makes us human.

Human beings are incredible resilient because we first of all listen, because we are close to other humans. By talking to other humans we can learn a lot and because we are humans, we can act. This is another of the key words in innovation.

But no fear! Don't fear to do mistakes! If children don't make mistakes in their young age, when should they? Learning by doing is the best way to learn. Another issue is to try – try – try – and if you are tired, don't worry, try again. This is very important for innovation, in every company and every team. We are individuals in a team -- this team could be a company or mankind.

Be the same harmony like an orchestra. Different voices, different instruments, but at the end all is one world of sound. It is beautiful. This has to be innovation. Innovation doesn't only have to be money and patents. It also has to be this of course, because it creates more money to invest in the new innovation.

The name of our company "Truyins" stands for "trust your instincts". Before you have to try, you have to follow your instincts.

As Isocrates said in the 4th century BC, value what you have, but seek for more. This is innovation.

Visibilia ex invisibilibus is the Latin motto which reminds that all that is visible in our life, all that we see and touch, what we call reality, comes from invisibility, our ideas and dreams.

Maybe, someday, intelligent machines will be able to think and to learn, but they will never be able to dream. Dreaming is the most important human activity. Our unique feature is not thinking, it is dreaming. Because dreaming is innovation.

NICOLE DEWANDRE, Adviser for Societal Issues, "Digital's Social Sciences and Humanities" DG CONNECT, European Commission, provided an excellent insight in

The Onlife Manifesto

Once upon a time, we had in mind this motto "the sky is the limit" for innovation. Then, it became "the earth is the limit" with the idea that we reached sustainability limits, and today we are the very moment when we are learning as a society that "the self is the limit", with limit meaning both what you want to go beyond and what you have to cope with and accept.

We speak about change and speed, but by over-focussing on change and speed, we may miss what we are at for the moment. As a society we are really living the times, where offline and online world are blurring. This convergence of offline and online is a real challenge to all of us as individuals, as companies and as societies.

We have to remain strong footed and calm in this area where there is this blurring. It is a little bit like we used to know that we were fooled by our senses, but we are approaching a moment where we are fooling ourselves.

We need to think of three different forms of otherness: one is when the other is an object, the other is an object when the self is manipulative. Birds fly because apart from two legs, they have two wings; and men and women manipulate, because apart from two legs, they have two hands. This form of otherness is a relationship with an object. It is instrumental, we fabricated it because we know what we want out of it. What matters in an object is the attribute, how it functions and it matters that it is predictable. And in that it is a control, the fluid that goes through this relationship of otherness. This could be called vertical otherness.

There are other forms of otherness: It is when the other is a self, and that is when the self recognises that it is plural. Plurality is at the heart of human condition. We are all equal. That means that when Bill Gates crosses a homeless person, they know that they are of the same kind – even if a lot of things are standing between them. Each of us is unique. Our face is unique. Nobody will be like we are and nobody has been before. It is a conjunction of equality and uniqueness that needed to be articulated in something different than just multiplicity.

And the third characteristic that closes this plurality notion is reflectivity. The fact that each of us is blind partly to him or herself. Our identity is such that we need to appear to others to know who we are. The identity is a sort of double key feature that you don't hold alone and it is by articulating these three things, equality, uniqueness and reflectivity that we experience freedom.

That freedom is not against relation, it is against the idea that you would be more free if you were alone – no, you are free if you appear in front of others and are recognized as who you are. The fluid that circulates in that forms of otherness is attention, and not control because you don't control, you are precisely dependent on the way others look at you – not to be dependent in a bad sense of the term, but in a good sense of the term. Recognizing the fact that we are these selves when we are partly blind to ourselves -- and this partial blindness is not an imperfection that needs to be overcome, because then we would become object to ourselves and we wouldn't be selves. So this reflectivity of the self is key for being selves to each other and that is when we engage in horizontal otherness. The third type of otherness is when the other is the environment. That means, that the other is neither another self nor

an object that I control and master. This third form of otherness can be called global otherness.

In these three forms of otherness, you reply to different questions: The first one is “who are you?”, that is when you experience horizontal otherness and when attention is the fluid circulating in the otherness relationship. The second question is “what is it?”, that is when you experience vertical otherness and when control is the fluid circulating in the otherness relationship. The third is "where am I?”, that is when you experience global otherness and when exploration and orientation are the fluid circulating in this form of otherness.

For the moment, in the policy making world, we are often confining ourselves in a one dimensional world: we are considering only vertical otherness. If we are not controlling, we are controlled. We have to open up and recognize that there are three forms of otherness and combine them as appropriate. So, not only the vertical one but the two other ones: indeed, innovation flows from a combination of these three forms of otherness.

Natality is recognized, which means being born being, we know that we will die at a certainty, but the fact that we are born is the result of an infinitive improbability. We have to adapt the baseline of what nature is to where we are at each moment in time.

The last thing is to connect. We are not so far from hyperconnectivity, because instead of focusing on transparency and control, which are concepts that are grounded in a vertical otherness approach, we need to go to "avoid-fooling" and becoming a digitally literate society -- and that is the big innovation that we are all striving for.

The "avoid-fooling" in the pre-digital society is highly regulated and socially managed. We have to, also in the digital, see how we allow each of us to orient ourselves -- not to be in control, but to orient and to be fair. For example, when we are engaging online, we need to know if, for example, the price we are offered, takes into account profiling information or not. To be able to recognize when we are recognized is the basic rule we need to set up.

And the last point is to nurture and cherish attention. The attention we pay to each other is not just a commodity and asset. Seeing attention only as the currency of the Internet is problematic because attention is what allows this horizontal plurality and this is part of us. We suffer, as a person, when attention is over-solicited. We can be multitask, but there is a limit! And as a society we are at the moment where we need to protect our attentional capabilities, because they are more vulnerable than they used to and it really can spoil our life if we loose totally control, not only of our data, but perhaps more importantly, on our attention.

ANTOINE-TRISTAN MOCILNIKAR, Energy Digital Infrastructures Head, Interministerial Delegate to the Mediterranean, France, discussed the topic of

Innovation and Digital Society in Mediterranean

The recent European Council Meeting on 24 and 25 October 2013 focussed on the digital economy, which shows the importance of the subject. One of the topics discussed by the 28 heads of state and government was the Snowden affair. In this context, one can state that, to some extend, the problem of trust came from the digital society. The digital ecosystem has to provide answers to distrust problems.

François Hollande included in his mandate a strong push towards Mediterranean projects. He wants to foster the creation of project oriented partnerships based on co-development, the respect of values and the history of partners and trust. France is pushing a strong European agenda and also a strong Mediterranean agenda. The European base is a strong base to develop Euro-Mediterranean partnerships.

As regards, the digital economy in the Mediterranean space, France does not oppose digital economy with economic and sustainable development, democratisation. There is a need for a holistic approach and France wants to participate to the building of a EUROMED digital ecosystem.

Internet, in the recent years, played a catalytic rule in the Arab spring. It helps to break the wall of fear and it changes irremediably the situation in the Mediterranean area.

According to the World Economic Forum, the southern and western part of the Mediterranean area, is not well ranked as regards the Network Readiness Index. However, things are changing rapidly:

Out of the 290 million inhabitants of the eastern and southern part of the Mediterranean area, there is already a 100 percent penetration rate of mobile phones. There are 100 million Internet access subscribers and 60 million people on Facebook. The shape of the Internet and digital space in the Mediterranean area is a very mobile-oriented one.

In Tunisia 7 percent of the GDP is already digital and the half of the growth in Tunisia is coming from the digital space. Besides these digital issues in the Mediterranean area, there are the classical ones, which are completely connected. The GDP north-south divide in the Mediterranean area is the highest in the world. Furthermore, it is a time of political transitions and the known geo-political problems. In addition, there is still a financial crisis, which makes that the financial way of doing things will never be the same.

We have to act now. Some projects France and its partners are involved in: Open data is a revolution. Open data in the Mediterranean area is democratisation. In addition, open data creates a lot of business for many people, so it is economic development. For instance in the transportation system, open data is also sustainable development. Open data has its own EU programme called HOMER. France appreciates the fact that the G8 signed a declaration for open data and embraces the EU directive on open data. It is a strong push that should be continued in the Mediterranean area. France also supports an open society platform called Wikimed.

In the future, in order to continue to increase exportation, the first ingredient is to increase importation. We have to double importation and in particular we have to increase the Mediterranean part in the importation. This is why France pushes the idea of a single window, of eAdministration, eSignature and eBusiness. All this is critical to build an ecosystem in the Euro Mediterranean area -- and of cause states, local entities, customer have a strong role to play.

Then co-development: The “Alliance numérique franco-tunisienne” (the French-Tunisian digital alliance) has just been launched with the objective to generate a catalyst effect between French and Tunisian corporations or entities in order to create partnerships, joint ventures and to engage in new markets.

At the end, there should be a clear and accepted agenda in the Euro Mediterranean area concerning the digital society. In addition to the examples mentioned above, France is interested in building a shared agenda on important topics, such as eHealth, digital urban development, research, or eEducation with massive open online courses.

YOSHIO TANAKA, Professor Tokyo University of Science Graduate School of Management of Innovation Studies; Emeritus Councilor National Institute of Advanced Industrial Science and Technology, Japan, introduced Japan’s definition of

Servicization

Traditionally, Japan has been contributing to the world in the manufacturing arena. Japan provides a lot of good products, new functions and high quality.

Japan’s product manufacturing DNA should be cultivated and contribute to Japan’s future industry. However, only making a new product is not enough, an overall systematic design for new products has become necessary. Mechanisms that can provide systematically products and services used in the Internet area. There is a need for a new scheme in Japan, but also all over the world. This must be one of the biggest innovations.

The concept of servicization is the key success concept for innovation. Servicization is almost equal to innovation. Product differentiation, and in particular hardware differentiation, is very difficult today and Japanese companies, such as Panasonic, Sony or Sharp suffered from this. There is a need for a new scheme on the market: service design with value add.

Servicization is defined as an added value to a product used by ICT. What value is generated? Servicization must be one of the enabler for product manufacturing to combine services and products. Think about cost, usability, satisfaction and green impact. If using good servicization architecture, it is possible to save cost, improve usability, develop a green product with high customer satisfaction.

A good example is Komtrax by Komatsu. Komatsu is one of the world's largest manufacturers of construction equipment. With Komtrax, owners, managers and operators can monitor their Komatsu machines on the Web, anywhere and anytime. It supports remote operation from a headquarters (location, machine operation time, maintenance, fuel, allocation, …) and management of the equipment (cost, eco, utilization, antitheft, …). It is an example of good use of ICT.

If we consider the role of ICT in servicization, it can be considered supporting XaaS in-house, especially in manufacturing, R&D, and sales and marketing. And also servicization and architecture to using big data and visualization and virtualization for new services.

Japan has just launched a new study group comprising representatives from the industry, government officials, consultants, faculties and professionals. Servicization will provide a good innovation support.

ANN-MARI FINEMAN, Head of IT Applications & Services Department, VINNOVA - Swedish Governmental Agency for Innovation Systems, Sweden, focused on opportunities, the opportunity in innovation and some of the positive things that governments can do to encourage innovation:

Cross-boundary Innovation

VINNOVA is Sweden's innovation agency. Its task is to help capture opportunities and turn them into innovations for sustainable growth and for the benefit of society.

This is mainly done by providing funding for innovation projects in different types of organizations – in universities, in research institutes, in SMEs or other corporations, in the public sector and increasingly in a combination of organizations.

However, money alone doesn't always solve the problem. Throwing money at something doesn't make the problem go away necessarily. Thus the agency also works a lot with connecting, catalysing and stimulating innovation in various ways. That is where the cross-boundary innovation comes in.

Innovation projects are aimed not just at developing individual innovations but also to create an environment or an innovation system that promotes innovation in its various forms. We see increasingly that the complexity of the today's society calls for cross-boundary initiatives, if any initiatives are to have the desired effect.

They are organisational boundaries, they are national and regional boundaries, boundaries between disciplines and between sciences, between industries and sectors, between private sector and public sector, between age groups, between people with different backgrounds. There are any number of boundaries that needs to be crossed and addressed in order to achieve the full potential of the opportunities in innovation. A combination of skills, competences and experiences are required to foster creativity and innovation. Collaboration is key!

A selection of three initiatives of the innovation agency to capture the opportunities and to promote cross-boundary innovation: Innovation procurement, open data and open innovation processes. They are not necessarily mutually exclusive but can also be used in combination.

Innovation procurement, this is about the public sector, basically about buying goods and services that don't exist. However, this is not easy. What is done by, are development projects. The most well-known method is called PCP (Pre-commercial procurement) and it is used especially in the UK and the Netherlands, where they had a number of successful projects. In Sweden, they have continuously open call for PCP. The reason for doing this is it can help the public sector solve its problems and create more efficient organizations as well as provide improved public services. It can also stimulate a demand for innovation

and can be an effective tool in efforts to address major societal challenges. The process requires diverse skill sets and it encourages trans-national collaboration.

The Silver project, for example, is the first trans-national European PCP. It is a collaboration of 5 EU Member States, the UK, the Netherlands, Finland, Denmark and Sweden. It is about supporting independent living for the elderly through robotics. Recently, 7 SMEs from different countries have been awarded contracts for the first stage of the process.

Another example is a traffic project in the suburb of Stockholm, which is a combination of competition, PCP and which uses open data. 6 projects have been put through the first phase, and again, it is a collaboration of a number of different actors in the innovation system.

Open data can provide transparency and increase democracy. It is the raw material for innovation. It is mostly the combination of data sources that is important and what really creates value. An example is the combination of Wikipedia and cultural data provided within an App for visitors of Stockholm.

VINNOVA has a government assignment to provide a technical platform to publish open data (oppnadata.se). It is open to both public and private data sources. It is available as beta version at the moment -- a new version is being launched at the end of November. The challenge here is getting organizations to publish the data.

There are a number of initiatives in the area of open innovation. Sweden is working with innovation competitions, Hackathons and Makeathons, as an extension of that. There is lead-user innovation, where innovation is actually not just user-driven, but made by the users. There are Public Innovation Do Tanks, crowd funding, Makerspaces and co-working spaces. All these phenomena exist on their own -- the challenge for a government agency is to promote and support them without destroying them in the process. A government agency has to be very careful not to impose its own bureaucracy on things that are innovative on their own.

What are the key success factors for organizations in order to do these things and to work with open innovation? It takes courage, leadership and commitment. This is really important. It also takes increased awareness and knowledge of the processes, a structured approach, tools and processes, incentives and measuring of the success. It also requires a budget and resources and a ”good business” approach.

In terms of challenges and risks, the biggest risk of all is doing nothing.

MICHAEL STANKOSKY, Research Professor George Washington University, USA, delivered a remarkable talk on

How to Design a Successful Knowledge Management Initiative

"Strategically stuttering steps"—if the world could get together, we could do anything. But we don't get together. There are still 700 definitions of Knowledge Management. We don't communicate.

In terms of input and output processes, the output here is three things: effectiveness, efficiency and innovation. The input are our ideas, data, information, intangibles, dreams… We all know what a barrel of oil is worth, but we don't know what a barrel of brain is worth. It's not on the stock market, and yet, that is our wealth. In America, 80 percent of the 17.5 trillion dollars is produced by nothing but ideas, knowledge, information and data. However, it is the process that is the challenge here. How did a maestro get to the point where no one is looking at him, but yet, he is in control? Four things have to happen:

The first is codification. That is why Google is worth so much, they codify everything. We need Google, we need Wikepedia – the question is how to categorize the terms? For example, when they were codifying in the early days Walt Whitman and his classic poetry collection "Leaves of Grass", Google put that under "gardening". We still don't know how to codify things very well.

The second thing is collaboration. There are Facebook, LinkedIn – we are starting to collaborate. Codification and collaboration are two major strategies to cross borders, but we need to bring them together in a more coherent (third thing to happen) way.

The fourth one is convergence. Most innovations happen at the boundaries of sciences and disciplines. Biochemistry, physics… And universities are the worst place to converge, because we organize universities by departments, by deans – and people don't talk to each other, professors hoard their knowledge.

One could add a fifth aspect: the language, even if English is considered the lingua franca of the world. However, the real lingua franca is music, notes and numbers.

When talking about innovation, we talk about dream and hopes. Out of these things from a governmental level and operational level and tactical level all have to happen. We do live through "strategically stuttering steps," we don't know how to get together.

The moderator, **JAY E. GILLETTE**, Center for Information and Communication Sciences Ball State University, thanked the panellists for their great presentations. When it comes to things that are complex, such as innovation, it is a mistake to try to make things always simple. Some things are complex and can not made simple, but they can made clear. The moderator complimented the panel for having made a lot of complex ideas clear.

The chair, **BROR SALMELIN**, European Commission, closed the session with some concluding remarks: The session highlighted the urgency of making things happen. There are plenty of papers on innovation and there are plenty of definitions – but it is not the time to talk about definitions, but to do things. Several presentations underlined the creation of innovation ecosystems. There is an interesting study from MIT from the year 2000 showing that the more you have diversity in your team, the higher the probability for breakthrough innovations.

There is also the question of breaking boundaries. We need to break boundaries, both regionally, nationally but also across disciplines, across the various traditional organizations. We should say “organiczations” (that is, “organic-organizations”). We should dare to innovate.

It is crucial to create these environments and mental settings where we can experiment with things in a real world, with real things. How to make people not objects for innovation but active agents from the very beginning, seamlessly to create the market?

It is about winning more by doing things differently, by creating a mindset and working together to dare to create and dare to do. It is about doing things now, and not about conceptualising.

--- ✦✦✦ ---

Content & Creativity – Evolutions in the Digital Future

The session's moderator, **JEAN-PIERRE CHAMOUX, Professor Université Paris Descartes**, France, opened the session by welcoming the audience and providing a short presentation of each panellist.

THOMAS SPILLER, Vice President Public Policy EMEA, The Walt Disney Company, Belgium, chairing the session, set the frame of the debate:

Walt Disney has been doing creativity and content for 90 years. As Walt Disney used to say, it all started with a mouse. We are living in very interesting and exiting times, when it comes to content and creativity and it is not just movies or animation features for kids or Disney products. Innovation is everywhere.

When looking at the entertainment sector, storytelling is key. You can have the best product, the best technology, the best broadband network or the best broadcasting system, you need to have a good story. Put a good story in front and people will come and ask for more. When combining great storytelling with great technology, you have a winner.

Disney was the first company to invent the first full-length animation feature, the first movie with synchronized sounds in the 1930s and the full-length cartoon. This has grown, seeing Disney online or opening a park in China – all this is part of the same family. Think about storytelling, talent, and how to develop talent to tell stories.

Storytelling is different between regions and cultures. In Africa, storytelling is based on oral traditions, in other parts of the world it is based on written traditions. But storytelling is what glues the people together -- we all relate to stories. Now it is how putting these stories into the right technological approach and the right policy framework.

Storytelling, technology, and risk, because you have to take risks and try new things. Most will probably fail, but some will stick and will create great success stories in terms of technology.

It is also important to have to look at how young people use technology and storytelling. They are showing the way forward, even if this might be disruptive for many industries. Kids between 5 and 10 years use multimedia platforms, mobile devices, tablets and no longer the TV as the main screen. This changes the way of producing content for kids. It is difficult to produce a 2-hours full-length feature. Kids want features of 2 minutes, because if they get bored, they just switch to something else. There is constant evolution.

And finally, globalisation: There is Hollywood in the US, Bollywood in India and Nollywod in Nigeria – with Nollywod being the number one film producer in the world (44 movies per week). Recently China announced to develop their own Hollywood. They are investing in Hollywood Studios to know how to make movies, to know how to groom talents, to know how to use technologies, such as 3D etc., and to create their own studios in China.

INGRID ANDERSSON, Senior Advisor Patient Certificate Scheme, Sweden, talked about global challenges, content and creativity and a great programme:

We need to have good and smart creativity and content in order to face our global challenges. Most contents that are produced today are not really tackling the societal challenges that we have. There is nothing wrong with Crushing Candy or Angry Birds, but there are other things that can be done with content creation.

As regards societal changes, many of these challenges have its source in human behaviour and the human factor is playing a strong role in this. Together with the King's College, Karolinska in Stockholm and a Japanese University, Patient Certificate Scheme put together elements and peaces into a behavioural change model, which is called LearnforLife.

In the following, a LearnforLife diabetes prevention programme has been launched in the United Arab Emirates. 25 percent of UAE's population is suffering from diabetes type 2, which is a lifestyle change based disease. This programme has been the first step, other programmes followed.

Currently a LearnforLife programme is launched in UAE and the Sultanate of Oman to support the prevention of road crashes. This is important, because these countries are among the Top 5 when it comes to deadly road crashes on the street. Thus, there was a need to have a programme for the young male drivers. And even if this programme should not be a driving game on the street, it had to include elements of a game and it had to be to some extend entertaining. Patient Certificate Scheme, together with a team of researchers and young male drivers, identified the most dangerous situations leading to crashes: During the week-end, with friends in the car, while eating, when having the mobile in the car.

LearnforLife is also looking at other applications, such as safe child birth for some countries in Africa, targeting pregnant women, or waste management and making people more green in India, where waste is a very big problem.

AMADOU DAFFE, CEO\Co-Founder Coders4Africa, USA, delivered an impressing talk on how technology and content creation make a new Africa emerging:

Reinventing Itself
By Creating Digital Content & Applying its Creativity

There is a status quo in Africa. For far too long outsiders have been telling the story and culture of Africa to both: African themselves and the world – malnutrition, lack of sanitation, child soldiers, diamond minors, unrests in Egypt, safari.

There is a new generation of Africans that is working towards giving a new different image by creating their own content, levering the creativity. This is possible by ICT. ICT reduces time and space: it is possible to make a phone call, a videoconference call to cross the world, handle business in 2 minutes. It feels like being in the same place and you save a lot of time. The other thing is the rapid access to information via mobile or PC. Moreover, ICT increases impact and allows to scale.

Coders4Africa focuses on the coders and content creators. And there are thousands of these young people.

TechCrunch is a platform of the US to put forward start-ups. The TechCrunch Finalist 2012, young developers coming from Ghana, has created an App that has been downloaded millions times: Saya Mobile offers an instant messaging and SMS service to feature phones geared specifically to emerging markets. The first thousands of downloads came from Syria, because they couldn't get any other way to communicate and SMS was the easiest way to do.

Other examples of events are the BlackBerry lab, the Coders4africa Lab in Senegal, or the Hackathon in Nigeria organized last week by IBM.

Africans are some of the most creative people in the planet. One can see this creativity in art, culture, fashion, sports, music, storytelling, literature and many more.

A 25 year old Egyptian created Bey2ollak, an App providing real-time traffic information on Cairo. Nigerian game developers create games that are relevant for the everyday of Nigerians. There are taxi services Apps in Ghana and Nigeria.

LetiGames, a Ghanaian and Kenyan game development studio, develops mobile games, based on African history and folklore as well as African heroes and heroines.

3D-animation is very hard to do. The South African company Triggerfish created a 3D-animation film to be released on this year in the US and South Africa.

Nollywood is very simple. Nigerians create movies at a second, they even have their own TouTube channel with over 70 million viewers.

Wrestling is a very popular sport in Senegal. A Coders4africa's product is Laamb24 promoting Senegalese wrestling and African martial art.

Kenya was the first developing country to have an open government data portal.

How all this possible? As J.M. Ledgardis, Nairobi correspondent of The Economist's, said "in a continent with few computers and little electricity, a smartphone is not just a phone—it's a potential revolution".

Kenya (40 million inhabitants) has almost 25 million mobile phone subscribers and 10 million mobile Internet users. Soon, everybody will be connected. They are currently building the "silicon" city Konza, Kenya's "Silicon Savannah". There is enormous potential in Kenya.

What is missing are investors and venture capitalists. People who see this and would like to help these entrepreneurs, but also collaboration in content creation, skills training and especially outsourcing.

Coders4Africa is striving to be the largest network of software engineers in Africa as well as the largest company for outsourcing towards Africa. During the past 6 months, Coders4Africa has incubated groups in Ghana and Kenya out of which 13 applications were born for in different domains (agriculture, businesses, entertainment, sports, health, supply-demand).

Coders4Africa is currently working on a Tablet designed for the African market.

Africans may have missed the industrial revolution, but they will not miss the digital revolution.

ELLWOOD KERKESLAGER, CEO Information Futures, L.L.C, USA, commented on an African Digital Revolution by offering a proposal he based on what happened in the US in the 1990s and how to move forward so that Africa does not get unduly delayed.

There has been a lot of progress in Africa on the personal level, the professional level, the training and the creation of content, in spite of the fact that very little has yet penetrated into the countries, even though things are falling in place. But they are falling in place after decades of delay.

For example, there is a fibre optic ring around Africa, there are even multiple fibre optic rings around Africa capable of connecting Africa to Europe, the Americas and Asia, but it took 20 years to make it happen because of government and other delays. And even now they are not fully utilized.

The 1990s was a period in which the US had a new President and a new Vice-President who loved technology. Vice-President Al Gore felt that it was the government's role to provide the "Information Superhighway". He felt that the US government should continue the Internet as it was originally developed and in place as a research/academic network and the government should expand it for use by the public.

However, something happened on the way which modified the project: The President and the Vice-president organized a meeting on the "US Economy" including CEOs of the corporations involved in ICT. While there was much agreement overall during the meeting, there was also a clear position of businesses that it was not the government's role to develop and deploy the Internet. That was the role of the private sector. There are very important roles for governments to play in the Information Age, such as regulation, spectrum allocations and standards and making the government itself more efficient and open by using ICT, including the Internet. The government has a role as a leader to help move the economy along and help structure how to move forward.

The solution to that debate was an Advisory Committee commissioned by President Clinton, led by Vice-president Al Gore, of CEOs, corporations, labor leaders, educators, libraries, public safety, healthcare organizations and others. This high-level group, supported by experts, worked for almost two years to identify and commit to policies, practices and programs to make clear and effective the path to introducing ICT, and the Internet in particular, for the best effect for all in the US.

This was taken very seriously by all parties, both government and industry, and the outcomes have been very good. Consultation and cooperation involving all sectors of society proved very effective.

African nations are at a point where they need to start a coordinated/accelerated initiative for the path to their Information Age. A number of countries are already on the path individually; coordination and cooperation will help all and speed up the progress.

Anyone who would like to be involved in such an initiative is invited to contact Mr. Kerkeslager. The way to approach Africa will not be the same as in the US, but there are lessons learned and experiences to be used.

DENIS GARDIN, Senior Vice-President, Head of New Technology Ventures, EADS CTO, France, provided an inspiring presentation on how to bring in new technology and content in the manufacturing process of a leading aviation manufacturer:

MiRA – Mixed Reality Application: Linking The Objects to Their Digital Genome

Airbus is using the same technologies everybody can use, however for a different purpose, which is to bring augmented reality to the workers. The application is called MiRA – Mixed Reality Application.

Aircrafts are very complex machines with hundreds of thousands of pieces and it is important to guarantee the quality of the way they are assembled. Airbus went through rather difficult times, especially with the interruption of the Airbus A380, which was the largest and very complex aircraft. There have been many problems, especially due to the fact that the aircraft was not produced in one single place.

Meanwhile, Airbus went through the harmonisation, the Digital Mock Up, which is the full digitalisation of the aircraft. Moreover, the company started looking for technologies in order to improve the quality of manufacturing.

Airbus now applies augmented reality, which means the linking between the digital world, the 3D digital mock up of the aircraft, and video of real parts. An application has been built in order to provide the workers with a the 3D view digital view of the aircraft. MiRA provides the production with a device that automatically navigates the DMU according to the users position and point of view in the aircraft and enables the workers to compare the manufactured with the designed product and capture its status.

MiRA provides a full 3D support of production activities, which allows to check the aircraft ten times faster and to prevent non conformity, but also to have rapid feedback loops with the engineering support.

After having introduced this technology in the manufacturing part, it is now deployed in the in the maintenance part, so that airlines can inspect the aircraft and check if everything is ok.

The operational deployment of this technology has been a great success and MiRA got the Airbus 2012 Top Award for Excellence.

Initially, MiRA was developed for internal use, but it opens the way to new and added value applications in other industries, such as nuclear, automobile, oil and gas. As soon as industries have a 3D mock up of their environment, they can use this kind of technology to improve productivity and quality.

[A short video showing how MiRA is utilized to inspect the wings of an Airbus was displayed]

The commentator of the session **JANE MAGO, Executive Vice President General Counsel, NAB - National Association of Broadcasters**, USA, underlined how all these applications and technologies have a way of learning from each other. An important question when looking at all these content applications, is how they can be used in a entertainment mode, and educational mode, in all of the different pieces that can flow together. Content has the ability to change lives. You must have content that is compelling, you must have a monetization and the ability to bring back some sort of value in order to keep it going.

BLAZ GOLOB, Director of GoForeSight Institute & Chairman of the Center for eGovernance Development (CeGD) SEE Regional Platform, Slovenia, shared some most interesting facts about how South East Europe considers the Digital Agenda:

South East Europe is characterized by various players and various initiatives. One of them is the South East Europe (SEE) 2020 Strategy, addressing challenges on the ground, such as the creation of real business opportunities in these region.

In the context of promoting the successful development of an Information Society in South East Europe, a model of 7 pillars has been elaborated. These 7 pillars correspond to the priorities set from the point of view of the South East European countries to evolve towards a successful Information Society.

The idea behind this priority setting was to adapt the model to the regions' needs. For example, even if the European Commission declares eHealth as a priority, this might not be applicable to the South East European countries, who don't even have proper eGovernment (and thus, eHealth stays out of reach). The model is actually bringing together a top down view (Brussels centric), and bottom up – what is the real need in the ground. The 7 pillar model towards a successful Information Society has been elaborated by the industry, IT associations, and governments.

The following 7 priority areas have been identified for period 2008 to 2013: eGovernance, eDemocracy, eBusiness, eEducation/ eResearch/ eCulture, eHealth, eJustice, eSecurity. They are implemented on top of all by education curricula. Moreover, 32 events and 20 research projects have been realized. This corresponds to an involvement of 2700 participants and 350 experts during in 5 years. In 2008, the start up capital was 40 000 euros, in 2013, it amounts to 1.5 million euros.

The policy principles "sustainable development", "equal opportunities", and "good governance principles" affect each of the 7 pillars. This means that ICT is considered simply as an enabler for coping with the societal challenges.

The SEE 2020 Strategy sets out a vision for the development pathway of the South East European countries that should help implementing the EU policy priorities on the ground and support economic growth and job creation. Currently, 5 main pillars of new development have been identified: Integrated growth, smart growth, sustainable growth, inclusive growth, and governance for growth.

The priorities of smart growth are 1) Support to ICT driven public sector. 2) Accessibility and interoperability of services 3) Online availability of services, both national and cross border 4) Development of regional broadband infrastructure to provide high-speed Internet access 5) To provide network security and data protection 6) ICT training for public administrations

and citizens 7) ICT for eInclusion of marginalized groups, i.e., persons with disabilities, Roma, rural areas.

On top of that, the real work has to start now. We need to translate these high level policy objectives into real issues on the ground.

Cities were recognized as the generators of innovation, economy and societal development. Together with 7 key stakeholders, among them a number of smart city initiatives, the model of the City of the Future has been designed. The capitals of South East Europe (Vienna, Ljubljana, Zagreb, Belgrade, Sofia, Bratislava, Beograd, Bucharest, Tirana, Skopje) can adapt this concept to their domestic needs.

The model merges with foresight technique in the three major areas: urban development, societal development as well as economic and technological development. It then goes on the services level, i.e., what are the city services needed.

The model should provide a framework for the European Investment Bank, which will support the building of smarter cities in the region from 2014 to 2020.

FRANCO GROSSI, Professor State University of Kazan, Republic of Tatarstan, Russia Federation, proposed to consider ICT in an holistic mode, integrating it in an ergonomic user-centred design, and applying it to a small community:

Holistic ICT,
an Innovative Ergonomic Approach to the New Media

The third millennium opens with the great challenge of global communication, which allows the use of information and knowledge by all in real time and in any place. We are now in the area of knowledge.

Niklas Luhman asserted that the social system “consists not of men, but of communications between men”, from which the importance of communications in the study of the movements of social transformation in contemporary society.

What about our extended senses? As Marshall McLuhan, prophet of the new media, wrote 1964 in his book “Understanding Media”: Entering with the electric media our physical bodies in our extended nervous systems, we establish a dynamic by which all previous technologies, which are only extensions of the hands, feet, teeth, and body temperature controls – all these extensions, including cities – will be translated into information systems.

McLuhan, with his intuition, anticipated the possibility of “remoting” the senses of our body, using specialized sensors in the service of the individual sense organs, in order to increase our reception capacities and transmission. And his imaginative speculation went so far as to predict an integrated use (holistic) of all technologies at the service of mankind.

The new ICT technologies extend our nervous system to a complex network, which surrounds our planet into a global embrace, defeating both time and space. The global village extends to the whole human society the creative process of knowledge, as well as “new media” have extended our nervous system and our senses.

The 80s were characterized by multimedia, that were used for different transport channels to extend our senses. In the 90s with the transition to digital, one channel was enough to transfer bits of audio, video etc and that was brought about convergence. In the 2010s, the sharing area, it was learned that it is perhaps more important to share what one does not possess, movies, music, text etc. Nowadays, we enter the area of partnership, of cooperation and collaboration, the knowledge economy area.

The new paradigms of the 21st century are shared knowledge, anywhere, anytime. Making use of new media. We all are know knowledge and information workers and we must be more flexible and mobile.

ICT is the discipline of Information Technology, i.e., the world of computers, Telecommunications, i.e., mobile, wired, and wireless communications, and the digital world, i.e., audio, video etc.

The methodology of the ergonomic design carries out to the anthropocentric realization of the optimal adaptation of the man – machine environment of work to the capabilities and psycho-physiological limitations of man, through the study of appropriate interfaces.

The AUAF model is a new reference model, that represents the design methodology developed in an anthropocentric (ergonomic) modality. It needs to have, a priori, active feedback from users (Active User Feedback in Advance), where are implicated not only the users and end-users, but all those who are involved in the process (technicians, operators, etc., and also the end-users).

In order to utilize the user-centric design, one has to consider the study of the interface. Between the user and the artefact a two-way communication relationship is established. The user uses the artefact, which produces an effect. The organ exchange (also including encoding and decoding) of information between user and artefact is called interface.

The goal is to satisfy all 5 senses, sight, hearing, taste, touch, smell. Therefore, we need to use all the present and future technologies to extend them.

The proposal of the holistic proposal includes the new ICT applied to all 5 senses through an innovative ergonomic design, so as to satisfy the most different desires and needs.

Transforming an existing town into a smart city within this project would be impossible, because the costs would be too high. However, it would be possible to start from a smaller reality, with municipalities below 10 000 inhabitants. In addition, as well as smart, i.e., integrative with new media, it could also be green, i.e., sustainable and environmentally friendly. Thus, from the global village of McLuhen to a green smart city.

The challenge is to find a municipality in the Friuli Venezia Giulia Region to carry out this project.

OLIVIER LAS VERGNAS, General Delegate for Inclusion, Training and Professional Activities; Director Paris La Villette "Cité des Métiers", Universcience, France, illustrated how an organization can use content and creativity for training:

About the link between "on line" innovation & "physical world" innovation

How can we deal with creativity tools and contents in the specific context of employment and guidance services? Universcience is the Centre for Science and Industry in Paris. 20 years ago, it proposed to create a centre dedicated to help people to find solutions, information and counselling about their professional choice and professional life. The idea was to have a multimedia library, a programme of events (workshops and debates) and counselling desks in this library.

Such a "Cité des métiers" (CDM) is an integrated employment and guidance multi-partners center, focused on user needs, with rather pragmatic goals, such as choosing professional orientation, organize ones professional and training pathway, find a job, change professional career or create ones own business.

The Cité des metiers is a centre based on the architecture created 20 years ago and it is still open. A CDM is now defined as a place for guidance and employment services, respecting 5 criteria: to be focused on user needs and to be open to anyone, to be broadly accessible, to be dedicated to any professional sector or topic, to be supported by a wide number of partners and to be based on interaction of different type of support and media.

1993, the 1st Cité des metiers was designed in Paris. From 1999 to 2000, 3 new CDM opened in France, 2 in Italy. 2001, 10 CDM in 5 countries and the creation of CDM Network NGO. In 2013, there are 39 CDM in 9 countries and more than 80 associated centres. There are CDM in France, Italy, Germany, Switzerland, Spain, Portugal, Belgium, Chile, and the Republic of Mauritius.

When the first CDM was created, Internet didn't exist. It has seen Internet arriving and the question was, is there still a place for multimedia libraries with counselling desks. Then, there were different steps in adopting and using ICT: The first step was just to explain how to come to the CDM and why (1995). The second step was to give online access to events and contents (1997) and then, the third step, in collaboration with the partners, to design complementary online tools and apps (2004).

The fourth step (2008) was a more relevant on, by deciding to create a tool, visualizing the guidance centre, the multimedia library and the workshop programme and to show what people can find online and for what purpose it is relevant to come to a physical place. People can click on the part they are interested in, see what kind of counselling they can have online or decide to get more personalized help by coming to a physical place. The idea was to explain step by step the interest of a physical social link in a physical place compared to the possibilities and abilities of online tools.

The fifth step 5 then was to add a Living Lab approach in the "physical world". The idea was to make the physical centers themselves evolve to compensate for the isolation resulting from the more and more frequent use of individual screens or the pseudo-conviviality of some social networks, as well for the "too much information" effect. But also to provide more listening and exchange (workshops organized in tracks, clubs, reception of users outside of the premises, evening openings, "last minute" self feed back interviews) and help

to discover and use the online tools (workshops “finding a job using the Internet”, training about the use of social networks). And finally, to support in a very proactive way new types of clubs, more or less informal, by helping creating them or hosting their meetings (deskilled migrants, chronically ill persons, elderly workers).

The CDM have created a kind of peer-support study circles. They are open on the evening, on Saturday morning etc. and people can meet and to work together on a specific topic they share. There are clubs of Latin-Americans who have problems with the diploma in France, clubs for women designing SME and many more. And all these clubs are peer supports. This is not something that can be found on the Internet. Of course, these people can find some information and help in social networks, but the physical world allows to go deeper.

The sixth step will be to use the feedback from those physical clubs and to become a new online tools incubator.

ERIC LEGALE, Managing Director Issy Media - City of Issy-les-Moulineaux, France, presented the vision of one of France’s most innovative local governments on how digital technologies can enhance the historic heritage of a European city:

The Digital Fort, a digital eco-district in Issy

The Fort of Issy is a new eco and digital district in Issy-les-Moulineaux built on the old basis of an historical military fortress. It is a 12 hectares innovative district inaugurated last June, with residences for about 4 000 new inhabitants. This new district symbolises the municipality’s vision of the city of tomorrow: a sustainable and connected city – or, with other words: a smart city.

The Digital Fort combines all the latest technology innovations: There is home automation in each residence (which is the most important deployment of home automation in France); optical fiber in every residence to provide Internet access; a waste collection without garbage trucks, thanks to a pneumatic system; geothermal energy, renewable energy, to satisfy nearly 80 percent of the energy needs; and, for the first time in France, a primary school made from wood and straw. Moreover, there is a Feng Shui swimming pool, a concierge service, a digital and cultural installation “Le Temps des Cerises”, …

The Fort of Issy is an important historic place for Paris and Issy-les-Moulineaux. One of the bloodiest pages of Issy-les-Moulineaux’s history was written in the 19th century, during the war between France and Prussia, and when a civil war opposed the insurrection of the capital, the Paris Commune, to the troops of the official government regrouped in Versailles.

Today, in this new, smart and connected district, the city wants to inform people about this history by means of the latest technological tools. The City of Issy-les-Moulineaux worked on creating an historical visitor-constructed trail using various modern tools like 3D, QR codes, augmented reality and even a robot.

The starting point of the trail will be in a cultural facility, which will open in spring 2014. In such installation, a room will be dedicated to the history of the Fort. The place will be strongly influenced by digital technologies, with a large glass wall on the facade, a digital signage and digital cultural practices such as a digital immersion workshop.

Inside the structure, a wall of memory will present a synthesis of historical events, through three elements: a relief map, cloud pictures (reproductions of historical documents, old photographs and engravings), and a "cross-media" device, with a documentary and a 3D reconstitution on the touch screen of the Fort of the 19th century.

Upon their arrival at the “Temps des Cerises”, visitors are welcomed by a small robot (approx. 60 cm) called Nao, who explains in several languages what the historical trail is about. The robot can tell historical scenes, sing popular songs of this period and then invites the public to download the application Issyspots on their smartphone or to borrow a digital tablet to do the trail. Nao asks the visitors to activate the touch screen created to illustrate the Fort as it was during the fighting.

The visitors, with their fingers, can walk on the ramparts, read old newspapers, circulate among the gun barrels and sandbags. This 3D reconstruction offers a real immersion in mid-winter 1871.

A Windows 8 application was especially developed to discover the history of the Fort. Those visitors who don’t have a tablet, can borrow one to move around the Fort.

The visitors are geo-located. They can discover the former site of the fortress, from points of interest located in different parts of the Fort. Their trail is guided through augmented reality (signs, radar, viewing of the Fort during the 19th century ...) and audiovisual content. The application is developed in the framework of an European project called RADICAL - Rapid Deployment for Intelligent Cities And Living. The project gathers 17 partners including the cities of Issy-les-Moulineaux (France), Santander (Spain) or Arhus (Denmark), the universities of Cantabria and Athens, as well as research laboratories and European SMEs. Its objective is to facilitate tools for the smart governance and flexible replication of services across cities and regions.

Issy’s goal is to allow the largest number of visitors and citizens to know about the Fort’s history. Those visitors who don’t have time to visit this cultural facility or to borrow a tablet, can also flash the QR codes located in different parts of the Fort and read a simplified version of the Fort’s history.

MANLIO ROMANELLI, President M-Cube S.p.A., Italy, [www.mcube.it], presented a most innovative company with an over ten years' experience in multimedia integration:

M-Cube deals with linking digital content, music and video to the location where it is displayed and listened, adopted to the peoples’ needs. M-Cube is a pocket-sized multinational company working in 68 different countries.

We live in a world where the use of digital out-of-home communication devices, video worlds, LED worlds and displays is increasing at an annual trend of 150 percent. The displays are deployed to show multimedia content, video pictures, text messages and graphs, providing information, promotion and entertainment. In order to be efficient, the content needs to be managed through an ongoing process of production, postproduction, scheduling and publication. This content needs to be managed efficiently in order to be effective. The process is not like a broadcasting TV channel, because it has to be cheaper but requires a dedicated communication technology, called digital signage.

The question is, what is the connection between the people's needs and content developing. When we are in certain locations, such as banks, shops or stations, we are within a triangle made of data bases accessed by the owner of the space, data mining through marketing intelligent systems, like fidelity cards or face recognition systems, and a communication media which can be called "omni channel", such as radio, monitors, touch screens and smart phones/ mobile technology.

Marketing intelligence systems provide information on traffic flows in a given area, peoples' profiles on age and gender, or the gaze time, the engagement with displayed content. Although the technology could provide more in-depth data, this is protected by the privacy law.

An omni channel is a new concept to include the visual and auditory communication system together, that can be activated and integrated in a location, especially suited for a retail environment but not exclusively. They provide information and interact with the people. The message communicated is personalized by combining the information from the data base and the marketing intelligence system.

There objective is to increase the integration among the various digital ambiances -- convergence doubles its volume every two years. The trend has been set in motion. The development of automatic communication among different devices and the interaction with mobile technology is increasing. Therefore the challenge is to create dynamic procedures to manage this new content.

As commentator of the session **JANE MAGO, Executive Vice President General Counsel, NAB - National Association of Broadcasters**, USA, shared her valuable observations with the audience:

The last presentation took the concept of content in a different way than the rest of the panel. It was talking about content from us to a central source, which is an interesting concept, because it also entails discussions on privacy. How to look at the issue of privacy as it relates to the content that is created by someone in their own space and how to deal with that? This is an issue that requires more conversations.

Privacy leads to another important issue, which is piracy. The panel talked about the value of content and the importance of content, but also the importance of being able to monetarize that content, and in order to be able to do that to have to have some elements of control to maintain honesty. It is important to be able to say that a specific content is something you have some control over to maintain quality.

Content is storytelling, content is clearly something that has the ability to entertain, the ability to inform and to extend our minds in many ways. It gives us an ability to express ourselves, but to do all of that one has to have content that is compelling, one has to recognize the uses that it will have in the future, how it applies to the next generation. It has to have a cultural component to it. It has to recognize the regions that it is from and recognize those that are trying to deal with it.

And finally, government has a role in content creation. This is something that can be very useful for improving the lives of citizens and being able to move forward. But it is not only government. There needs to be the private enterprises to go with it as well and the two have to come together in order to provide truly compelling and improved content.

The chair of the session, **THOMAS SPILLER, The Walt Disney Company**, closed the session with some concluding remarks:

When talking to Nollywood executives about movie film production, one of the key challenges they are facing is investment in a new cycle of movies. And one of the subset of that is because piracy is ramping because there is no infrastructure.

More generally, one of the issues of modern piracy, whether it relates to industry or secrets or citizens' data, is the issue of a rule of law online. That rule of law online is the same as the rule of law offline. There is no philosophical difference. Now there is a question mark concerning the younger generation. Young kids today may be used to other forms of trading data against other economic benefits. If this is going to change or not – we will see this in the coming 5 years. However, the rule of law concept is absolutely crucial for the health for the Internet ecosystem and all the rest, including broadband development and others.

--- ✦✦✦ ---

Q&A

The question was about the panellists' feeling about the US saying "content is king" versus the typical Marshall McLuhan statement "the medium is the message":

THOMAS SPILLER, The Walt Disney Company, explained that video is actually the new medium in many emerging countries. Content is king, video content is going to be king. Kids in the Middle East, Africa and Latin America are producing their own video-based content. Something, that again is linked to the development of mobile applications.

Recent research as shown that in the US, ¾ of the children are spending an increased amount of time on smartphones and tablets, including nearly 40 percent of babies under the age of 2 years.

--- ✦✦✦ ---

Managing Enterprise Risk – While Globally Sourcing

The session's **chair, COLIN WILLIAMS, Director SBL**, United-Kingdom, welcomed the participants and set the scene by some insightful introductory remarks:

Context is everything, it is definition. Our context is challenging, complicated, disruptive. We have post-imperial, post-modern, post-industrial context. We are post-"a lot of things", but we are not entirely sure what it is that we are onto ourselves at the moment. We apprehend a global banking and financial crisis, China apprehends an Atlantic banking crisis. The access of geopolitical power has most certainly shifted. We countenanced the dissolution of the United-Kingdom. On mainland Europe, we contemplate the dissolution of the European project. Not inevitability, but a possibility, more so now than it was 20 or 30 years ago, and with it the dissolution of the mainstay of peace on mainland Europe.

Across North Africa, the Arabian Peninsula we see the final dissolution of the final remaining cold war proxies, the last expression of the post-imperial context. It unsettles and disturbs us. And in this context we are compelled to raise our eyes beyond the immediate, the proximate. We are all busy, we all have challenges, targets, and goals – however, we are also in our own way leaders. We therefore have the responsibility to gaze beyond our immediate.

Computers used to be big, they were expensive and they were experimental for a long time. And then the world changed, and then computers changed and they carried on changing. Computing and computers are in everything, they are of everything. They are literally in fabric of everyday life and they are going to carry on changing at the most remarkable rate. And we will at some point in the immediate time frame remove the human operator. This is not an abstract possibility, this is an imminent reality.

Computers were locked in a context, they were product of the context and the exercise that impact on that contexts. It was the context of the cold war. Confidentiality was a premium. We were preoccupied with confidentiality, with integrity and availability, because these machines needed dedicated rooms and power supplies. They were unstable. You did not buy them frequently, you leased them. And therefore preservation of stable states was for a whole host reasons a desirable attitude. We adopted a mindset which expressed all of these preoccupations in a security architecture, a commercial model, an entire industrial supply base, what Eisenhower called the military industrial complex. The cold war was definitional and existential. We could not afford to lose it. It was more than a battle of ideas, ideas being instrumentally important. It was a battle for survival and we came closer to the brink than we ever whished to on at least one occasion.

This was the context of the machine age. It was also the context of vertically integrated businesses. One example standing at the genesis of the computing revolution, a British post-war phenomenon, was a shop that sold coffee, tea and cakes -- an enterprise, so vast, that used so many vehicles and lorries to deliver its raw materials and its finished products, that it made sense for it to own rubber plantations in Malaya in order to manufacture the tires

themselves that went on to the lorries that they run and owned. They owned tea plantations across the British empire. That was an enormously vertically integrated business. That was in fact one of the characteristics of the economy of the immediate post-war period. The supply chain was vertically integrated. You could see into it, there was visibility and provenance. They could declare the totality of the supply chain because they owned it.

And the companies that were dealing with the governments, the principal consumers of computing at this time, were the large companies who were vertically integrated into a particular context. LEO (Lyons Electronic Office) at this period, outside the government agencies, was the dominant form of computing. It was the first commercial office application. Even customers that are using defence infrastructure, were using LEO in order to outsource payrolls, inventory and complex logistics.

In order to use the services of the Lyons Electronic Office, you had to submit to computerization. The “man in white coats” came from LEO and analysed your business process. Then, they told you how you are going to change it and made you adapt to the demand and the needs of the computer. You were passive. From this group of companies, we get the genesis of the modern standards movement. The British Standards Institute is formed as a subset of these companies. It adopts ways to thinking and doing which are formed by the normative practices established by LEO. LEO then became ICL and is today known as Fujitsu.

From this, not only do we get the modern standards context, we also get the modern systems integration context. The phrase “systems integration” presupposes you have discrete systems which you then bring together. We haven’t had discrete systems which we bring together for decades, but we still talk that language. We have a non-linear and non-deterministic system. We have something which in mathematical terms is chaotic. It is a chaotic system in the technical sense of the word. Cause and effect are non-linear and disconnected both time and space and we are only at the start of this interconnectivity. We are only at the start of the disruptions to the supply chain.

We can now print electrical circuits using carbon nanotubes, graphene will be the next revolution, we can print lithium-ion batteries, we can print clouds… There are machines able to limited self-replication, machines that are able to scan and render objects in binary form, transmit it around the globe and enabling it to be replicated on the other side of the planet almost instantaneously. This will completely disrupt and destroy values across the supply chain in multiple industries.

The disruption that happened in the music and the print and the film business is nothing compared to what will come. It is transforming everything, food, humans -- not just the nature of humanity in the abstract but the nature of humans themselves. And of course, there will be a market. And it is not confined simply to the commercial outliers, it is core government business.

Initiatives like Bitcoin or Kickstarter show that the capacity to mint currency is no longer the preserve of the nation state and never will be the exclusive preserve of the nation state again. Capitalism used to be defined on the restrictions to the access to capital – not anymore. Capitalism has changed.

Gaining assurance in the security of systems by component level analysis is no longer possible. As far back as Windows XP there were a million lines of code in just a video driver. Models of assurance, product certification and evaluation based on recursive code

level analysis is not possible, they are redundant. It puts the most enormous pressure on our regulatory and governance and compliance system -- it breaks it in fact, completely and irreversibly.

The supply chain is not merely the vector of an attack, it is the target of an attack. And it is vulnerable to the most profound asymmetry -- and we are in a profoundly asymmetric world. There is economic value. The counterfeit market globally stands at something like 600 billion dollar. It is really big business. Imagine the impact of 3D-printers micro-fabrication on the counterfeit market – this is a whole new world of pain.

However, there is an incredibly simple choice: We recognize that we are in the most profound mess and that our previous methods of attempting to make sense of this, to manage and to control it are broken, and we move on – or we would loose. Failure is unfortunately an option.

PAUL WORMELI, Executive Director Emeritus, Integrated Justice Information Systems Institute - IJIS; Innovation Strategist, Wormeli Consulting, LLC, USA, outlined with great clarity and insight the

NIEM: National Information Exchange Model

The Integrated Justice Information Systems Institute (IJIS) is a non-profit organization which has as its objective to help law enforcement, justice and homeland security agencies do a better job of sharing information. IJIS has brought together the capacity of 160 IT-companies to work together in harmony without competition to try to help understand the issues of information sharing on an international basis.

Information sharing in itself is at the heart of anything that one might chose to do to solve some of the important social problems that we face on a global basis. IJIS started with the core of law enforcement and justice missions and homeland security, but recognized that most of the really serious social problems that we face are global in nature and not limited to a certain country. Certainly the problems of human trafficking, drug trafficking, weapons trafficking or terrorism are absolutely international in scope. And there is no country, no matter how rich, no matter how powerful, which can solve this problem by itself. It is going to take global collaboration on a scale and in a nature that we have never thought of before.

One of the ways to do that is to develop the kind of facilities to exchange information about the problems that trouble us, whether it be in law enforcement, crime, justice or health and human services. What the US has done is to build a way to facilitate exchanging information amongst and across those disciplines, and potentially across nations, to share the data about the problems that face us globally. On the basis of having the capacity to share that data, to take advantage of tools that have been invented, with respect to handling big data, predictive analytics and other analytical tools allow us to become more innovative in finding solutions to these problems on a truly global scale.

One of the things that happened in the US after the tragedy of 9/11 was that the Congress passed legislation calling upon the US Federal Government to create an Office of a Programme Manager for building an information sharing environment, which is now been expanded to an information sharing and safeguarding environment. Its purpose under US law is to build standards for exchanging information and to coordinate the federal agencies of the US with state and local and international partners all over the world, in order to

build a better basis for sharing information that will lead to more intelligent decision making on attacking some of the social issues that the nation and the world face.

It is a small office and one of the things that it has done is to build a framework for information sharing. It has no power over all the federal agencies, local or state agencies, which are rather autonomous in the US. All has to be done by good senses and by arguing that collaboration is far more successful as a strategy than isolation.

The idea of an information exchange model that focussed on the data started as a ground roots plan, not dictated by the federal government of the US. The project was to come up with a vocabulary and a structure for that vocabulary to exchange information across all of the disciplins that may need to share information about people, events, and property and also to create a common acceptance of the meaning, of terms. It is called the National Information Exchange Model (NIEM). While NIEM started in the justice community, it has now been expanded to health and human services and other arenas. It stemmed from an understanding that if we don't create some standards for sharing information – and this is true on an international level as well, but it is also true on an individual national level – we will not have the ability to bring together the data that we need to solve some of these significant social problems.

NIEM is a federal, state, local, tribal and private initiative to increase information sharing between organizations. NIEM includes a computer based data model from which organizations can establish information sharing specifications. The whole notion was to cut the cost of sharing the information by these standards, but also to enhance the mission capabilities in law enforcement, homeland security, justice and then subsequently to help human services and other disciplines.

The notion was to realize that these processes are very complex processes. They are chaotic, but recognizing that and then coming up with standardized exchanges and most importantly a governance process, giving the way the US is organized, there is no way to do this on an national scale without a very effective and acceptable governance process. Certainly governance is a crucial issue in the international conventions that might be developed to better share information. All the stakeholders, from the smallest to the largest, have to be represented in governing this kind of information exchange.

NIEM was created to be a standard to facilitate information sharing across governments and on all levels of government. It provides more than just a data dictionary, but a structured approach, including a methodology for how to define these exchanges and how they get adopted, built and made available to the public. It is a data model with a very extensive process to harmonize the data across multiple disciplines and multiple government layers. And to create rules for all these data components to fit together in a structure that was borrowed largely from the XML-world to make it a neutral and open standard. It is not a propriety standard. It is not intended to be a way to replace the schemas in any data base and it is not just a data dictionary. It is not a programming language, it is a methodology and a data structure. The whole fundamental purpose is to find that middle ground to translate information from one legacy data base to another in a common format, so that it can be machine translated, as you cross organizational boundaries, discipline boundaries and even national boundaries – to not try to standardize inside legacy systems, but to be that layer of common formatting as you move to make automation of information sharing possible.

There are three parts to the movement: one is the building a community of people engaged in the governance process, in in support of the missions that you want to support. The second part is is creating the technical model with the actual data model, including design rules following international standards for naming conventions and built on many international standards, such as ISO and others, culminating in the creation of the information exchange package documentation which is the specification for how to build these exchanges. The third component was to build freely available support programme tools for how to do implement this methodology and how to build schemas and exchanges almost automatically without having to do a lot of programming.

There are now 15 different domains, or communities of interest, ranging from justice to cyber security to screening for visas, for immigration, up to international trade. All of these domains/ communities of interest work together to agree on what is the central information standards need to be for data that is of common interest in any domain, such as the name of a person, age, sex, etc. But then, for each of the domains to govern their own domains, whether it is justice or the health or the human services domain. Each domain has the ability to develop data standards that apply to that specific domain and not to any other. It has to be governed then by the participants and stakeholders in any of these specific domains.

Every state in the US has some projects going on to implement NIEM as a standard in one or more domains, such as justice, health or human services -- up to areas such as managing the security of pipelines, exchanging data amongst those who have security requirements for exchanging data dealing with pipeline management.

There are some beginnings of international adoption of this notion: Japan has done its own study to develop a similar solution in Japan and they chose to base it on the concepts of NIEM. However, it has to be tailored for any given nation. Japan, for instance, has a very complicated problem of dealing with 4 different language constructs and representation of characters. Canada has adopted NIEM for its own international visa management, exchanging visa information with other countries and with its own embassies throughout the world. Moreover, there is a joint project that started during the North America Day: the US, Canada, and Mexico agreed to exchange information on stolen vehicles, and on a pandemic expansion that needs to be shared across those nations. And all of that is based on the use of NIEM as a common way of exchanging information across nations. There was a project in the EU where the Eurojust organisation uses NIEM for creating a sharable criminal warrant in Europe. According the Eurojust it has saved half the cost and half the time to build that multinational criminal warrant and handle all the language variations.

It is time to have a standard for sharing information across national boundaries – and NIEM is a possible starting point. There is no question that each nation needs to develop its own version of NIEM for the exchanges that are important within the nation, but we must, as a global community, start thinking about the edge of the enterprise and not just about the enterprise that we are working in. If you build an enterprise information system for a particular social function in a country, whether it be the Ministry of Justice or the Ministry of Economics, it has to look not only on how do you serve that enterprise, but how this enterprise must connect to other enterprises within that nation and beyond the borders of each nation. We have to stop letting the borders be the boundaries to how we work together and one way to do this is to create some kind of international standards.

It is really at the metadata level – if it were possible to for the EU and other nations to develop this kind of capability and use something like the NIEM concepts and architecture, design and methodology, then it might be possible to create the metadata on an

international scale that allows to create the data repositories that help us understand what the problems are of terrorism and human trafficking and stop them. And to understand more how we treat the health problems that cross our borders throughout the world. The pandemic flu is not limited to the borders of any country. Why continue to isolate our health and human services delivery systems to national boundaries when the problems that they are addressing go beyond those boundaries?

All of the work in NIEM is freely available. It is an open standard. The model and the tool to automatically create exchanges can be downloaded at www.niem.gov. Moreover, there is a helpdesk run by IJIS.

MICHAEL STANKOSKY, Research Professor George Washington University, USA, provided a bright presentation on

Knowledge Assurance, 21st Century Risk-Management

Boing is building the 787 Dreamliner. It is their a future. They are building this aircraft with a thousand partners around the world. Managing enterprise risk while globally sourcing. Airbus is building in competition the A350. It's the same thing. These corporations can't build it by themselves. They need the data, information and knowledge of people around the world. That is the true value – they need their money, their experience, their ideas. How does one corporation bring in thousands around the world and manage the risk that they are giving away their ideas, their know-how, what makes their money? Because the true money is in knowledge. 80 percent of the US GDP is nothing but knowledge based. 80 percent of the output in America is nothing but data, information and knowledge. That is the new raw material of the 21st century.

How do I manage my risk when I have to share my knowledge – my money – with thousands of countries across the globe? Independent of this, these countries are trying to get my knowledge. The best hackers are not at a Hackathon – they are already making their money. The US does it, France does it, China does it better than everyone -- every nation has an interest to collect knowledge, information and ideas. That is why we never share. Strategically, stuttering steps! The true value is, you are not going to share ideas unless you see a competitive advantage. Boing has to do this, because they can not build the 787 without that need. So, they see a competitive advance.

Managing enterprise risk -- you mange what has a value to you. Put your valuables in three categories: nice to have, important and critical. We only ensure what is critical – but corporations still don't know what is critical to them.

If I came into your office a week from now, can you show me an inventory of your strategic assets? It is not possible to do business without strategic assets. It is a resource. There is no business without strategic assets. These are your critical assets, strategic assets.

Most people won't be able to give a list of its critical assets. They don't know what they are! Strategically stuttering steps... We can do 4, 5, 6 7 percent return on our assets. There is a book called "The New Edge in Knowledge Management" and APQC, the American Productivity & Quality Center, has a statement there: Those organizations that do knowledge management as it should be done, get a 200 percent return on their assets – which is profit.

How can people get a return on their assets, if they don't know what they are? They don't carry them on their books, they don't value them. We are talking about managing enterprise risk. And coming back to Boing, they still don't know how to do it – they muddled through to they get the 787 finally in the air.

The point is, knowledge is your asset and knowledge comes on the three flavours: Human capital, which a lot of people think is the only asset -- it is only 20 percent; organisational and structural know-how, which is 30 percent; and 50 percent is relationship capital. It is interesting because if you look at Google and Facebook, those are the capitals we are dealing with it, that is why they worth so much money.

If you want to manage enterprise risk, while globally sourcing, you have to think about this. We don't carry all of these assets on our books. We don't know how to name them. If you could name an inventory of your assets, you could manage and value them. But we don't know how. The US government recently decided to start doing some of the US R&D intangibles and alike, and they came up with 100 billion dollars added to the US GDP. They were laying on the floor!

To conclude, knowledge assurance has 7 attributes: security, privacy, integrity, availability, non-repudiation, reciprocity / congruent interests, and risk-value. These are the things that all have to come together, in order to make it sure to manage the risk. As an example, Coca Cola didn't even patent their formula, because a patent would have expired. You don't even know who has the formula or were it is. This is the critical asset.

The first thing of risk management is identifying the risk and then the probability of occurrence. The world is flat, knowledge is the currency of the 21st century and if we don't figure out to how to create this dialogue, you will loose your wealth and you won't even know it.

MAGNUS WAKANDER, Subject Matter Expert within Cyber Security at FMV; Visiting Lecturer & Course Developer Swedish National Defense College, Center For Asymmetric Threat Studies, Sweden, delivered an excellent presentation of the Swedish perspective on

Supply Chain
Enterprise Risk Management

Why do we need security standards? There are a number of reasons: We need a shared direction, shared values, defined compromises. We need to remove ignorance form the process, reduce uncertainty and create and maintain a body of knowledge. But in essence it is about being intelligent together.

A simple model of what a standard could be set to contain, i.e., the shells of a standard: The core are certain values that we need to create, uphold or protect, often with insecurities about protecting values someone else has defined. This is wrapped in a language. They tend to be different, Common Criteria has its own language, ISO 2700n has its own language and there are some things that are common. We then define a context within which the standard will be applicable, and around this we create relations and work with these standards. This creates our reality, even though we have different realities depending on which standards we are working with.

The process is basically a simplified process of ideology. What we talk about is our perception of reality, we discuss that this can go on forever, we define our opinion about the order and division of things in this world and we define our priorities, i.e., what is right and what is wrong. We then put this together as a basis for a value oriented system. The thing here is, however, it is very subjective.

The most important aspect when looking at men and technology is that cyber technology has changed us. And it is irreversible. We have taken a step forward and can not take the step backwards. Cyber technology amplifies the power in human networks and it enhances basic human properties – they are very irrational (the way we interact with groups of people, the way we create flocks etc). It is liberalizing and thus also challenges national constructs. It eliminates boundaries, but also creates new boundaries, and it brings the world to your door.

The information security is only within a cyber dependent community, e.g., banking and finance. They have information. But what happens when all these work together and create a mental space, the cyber space, that is much bigger than the fiscal construct that we have at present. It becomes very complex and this becomes cyber security. This is something we have not defined yet: how are we going to work with it on a global scale. There is no standard for this yet.

Another perspective into the problem is management. The difference between doing what you want to do or what is needed -- this is something we struggle with in the domain of information security. Intelligent control is making a process doing what we want it to do. Very few use tools such as systems dynamics for complex analysis of organizations. We do have the tools, we use the tools for developing fighting jets – we could use these tools within cyber security as well. Systems dynamics is a very important tool to complement what we are doing.

Control is slow as it requires precision. Do we need that specific slow? Control is not the same thing as performance.

According to the Oxford Dictionaries, intelligence is the ability to apply knowledge and skills, in contrast to ignorance, which is the lack of knowledge or information. Therefore, intelligence means removing ignorance.

The principle of increasing precision with decreasing intelligence (IPDI). Analytical functions are implemented using intelligent controls and functions with entropy as a measurement of the probability of uncertainty in the design.

Someone living in Sweden 150 years ago, at the beginning of the knowledge society, had a value in the herd of people if knowing things other people did not. That was the person's value, but the problem was that other people wouldn't understand what this person is saying because he/she has his/her own language for this knowledge. So, this individual had to learn how to express him/herself in order to make other people understand that he/she was relevant. In the today's Information Society most people have a direction. They are not fixed, they are moving and try to make an impression on people that doesn't understand. They try to find those who need to be lifted up, because today everybody knows so much. People try to be relevant by providing support.

If you are working with standardization and you realize that the problem has changed, than you need to do something. If you are 1 out of 10 realizing this, and you don't get everyone else on board while seeking for the creation of a shared understanding and finding a new shared direction, then there will be friction. You need a critical mass of people in order to question the solutions you have today and in order to find a shared direction and ambition -- and then to arrive at a turning point where everybody agrees to define a new body of knowledge that will last a certain time.

The model of increasing precision with decreasing intelligence (IPDI) means that when you increase the level of intelligence in the process, you remove ignorance. But when you reach the highest possible level of intelligence, then you are comforting in the fact that you can actually define with increasing precision the problem to be solved. And then it goes around like this in groups. One could say that it is a conflict between managers and leaders.

From an organizational point of view, you have an organization, then you need something that coordinates everything you do, and then, at the bottom, someone needs to do this. Thus, the precision in execution increases as you go down. From an organizational point of view, you need to have a lot of intelligence to remove ignorance in your decision making. Intelligence is in the head, it is languages, values, strategies, perspectives, ideas, the will – this is something rather abstract. Precision is in the hands, it is facts, mechanisms, metrics and a tangible feeling of what we are doing. There is a conflict between these two states. Some people want to do things with their hands, others want to work with the organizational, more abstract part of it. What you need to have when you have intelligent control, is that you need to have a switch in your system in order to make the balance between precision and intelligence work all the time. This is difficult and there is no security standard that provides an intelligent control in the community.

However, there is systems engineering and the ISO/IEC 15288 Systems and software engineering System life cycle processes. When acquiring defence systems etc., the Swedish Defence Materiel Administration bases its entire operation on this standard. This is the only standard you need when developing complex things, because it allows to define the switching between intelligent precision for each system. There is research, prototyping, development, utilization and support. At the same time, it is probably one of the most competence requiring standards in the world.

Add to the fact that we have different knowledge and language domains, if you work with security, just speaking security is not enough today. You need to understand what security is supposed to do and then influence people within all the domains to move in a certain direction in order to have shared values when it comes to security in the future.

The process of information security declaration at the Swedish Defence Materiel Administration started 10 years ago and was kicked off operational in 2012. We live in a reality full of threads, we have operations that are full of threats as well, we have equipment that has a lot of weaknesses and flaws. If you don't have an Intelligent Service that is dealing with threat analysis, you are better off looking at weaknesses and flaws instead of dealing with threats -- and that changes your way to do risk analysis.

The goal with this process is to establish a tolerable risk level with known economy. The key here is "tolerable". There is no quantification of the risk. Tailored assurance is key. The goal is to also to create balance between economy and risk and to deliver on time.

ISD is integrated into the operational systems that are based on ISO/IEC 15288. That means that when you look at the operational systems, you can not find the ISD process, because it is an alteration of the foundation that the operations are built on. That is integrated security.

When developing this, ISD draws on experiences from the US and UK, primarily US DIACAP and NIST and UK GCHQ/CESG Tailored Assurance etc. Furthermore, ISD is very lean.

Eliminating vulnerabilities requires knowledge about methods of exploitation – therefore the need for Intelligent Services. Eliminating weaknesses can be done using solid design principles. Systems engineering – when you don't have weaknesses, you don't have to be worry about the threats.

In terms of principles used for the process, the Swedish Defence Materiel Administration started with the people. This is why it took 10 years. Most other organizations start with the process (what is the good process? what kind of technology does the process need?) and then adapt the people. That hurts and people never fall in the process.

The process bases on the principles uniformity, transparency, simplicity, dialogue, education, separation of duties, everything we do needs to be done, structured management of requirements, evidence, traceability, increased efficiency, and increased competence.

To conclude: Risk management through intelligent systems engineering. ISD took time, people are different and there are different forms of cognitive ability. Most of the work was making it simple. Simple require prioritisations and there were feelings involved.

Uncertainty is almost never discussed in security, people always talk about risk and probability and consequences. There are two forms of uncertainty and you always have an uncertainty when you are doing things because different things can happen. When you have reducible subjective uncertainties, this can be fixed by applying more knowledge. But if you have an objective non-reducible uncertainty, this means that you have to change the problem. Be certain that you're doing the right thing before calculating the risk of failure…

--- ✦✦✦ ---

Q&A

Paul Wormeli, Integrated Justice Information Systems Institute –IJIS, stressed that transparency will be the fundamental guideline in building in anything that has value. This means that not only do the obvious stakeholders need to participate in things like governance and decision making, but the public in large has to have a voice. The difficulty is that you can never impart the level of knowledge that needed. For someone to make really intelligent creative contributions without an enormous education effort, is just not possible. You have to find a balance between this. We all are seeking better ways to involve the people who are in the end affected by what is done, whether it is part of keeping security alive or protecting assets.

Michael Stankosky, George Washington University, explained that the answer lies in younger people. The idea of security is a fiction. We all have our own values, our own property. There won't be one world, there will be many worlds. There are 7 billion people on the planet. You can't nor should you control them. It is a balancing act. We all have our different balance. Governments, organizations, enterprises operate within a framework of global framework – with business being the global framework, because this is where the money is and the jobs. Knowledge is the currency of the 21st century. Everyone has to define what is a value to them and then what are appropriate measures. Probably we can walk as a community, but at the end of the day it is evolving, because your value system changes, your risk changes. It is happening faster than we know what to do with it.

Magnus Wakander, Cyber Security at FMV; Center For Asymmetric Threat Studies, explained that in Sweden the dialogue has just started. A couple of years ago, when we started to get hacked and people could not pay with their banking cards etc., people realized that they are extremely depended on things they do not understand, the underlying mechanisms. The National Security don't drive that kind of things. They are waiting for other sectors of the nation to step forward, but provides any knowledge it has. The civil side of the nation has to take responsibility for it. The government is trying to do this, but it is difficult.

Colin Williams, SBL, added that during the student protests in 2010 in the UK, a politician decided that it were a good idea to propose that in times if civil disobedience the Internet should be turned off and social networking sited closed down. It was the UK Intelligence and Law Enforcement Agencies who publicly contradicted him on three counts: 1) Don't do that because you deny me the ability to understand what is going on – with other words, you cut of my intelligence. 2) Don't do that because if you do you deny me my ability to communicate with people and manage the situation effectively. 3) In a democracy you don't do that.

Paul Wormeli, Integrated Justice Information Systems Institute –IJIS, underlined that what we really do understand, no matter what discipline we are talking about, whether it is military, security, banking or general crime, one of the fundamental ingredients that everyone needs to understand is that dealing with the thread involves people at all levels, in all of these disciplines. One of the most nefarious things that is happening in the security world to challenge all of our systems is the idea of social engineering. The bad actors are getting smarter and smarter about how to trick people and to disclosing their passwords, getting access to the assets and stealing them. It is that social engineering thing that has everybody just petrified about the thread when combined with the technological capability to destroy systems. The focus throughout all of this is dealing with the people who use this technology and educate them, every citizen, every user, the enterprises.

The attacks are getting so much smarter. All we need to do is educate everyone not to open an email from someone who they don't know and check that the given address is the right one. It is those kinds of educational things. The biggest source of successful attacks is the fact that people don't patch their systems. The least protected door into an enterprise is the one that people will go after. And when people don't patch their PC at home and they have a remote access into their corporate enterprise, its an easy way. There is a ton of those kinds of education efforts, we failed to do over and over again. The biggest thing that can be done in the security world is to help people understand the thread and what to do about it.

Michael Stankosky, George Washington University, advised to trust but verify. You need to put in place processes. However, it is not just technology, not just people and not just processes. There is enough stuff that good companies are doing to protect their vital assets. Start googling these things. It is not a new phenomenon, it is been around for a long time.

Magnus Wakander, Cyber Security at FMV; Center For Asymmetric Threat Studies, recommended two books: Neuromancer by William Gibson (1984), for those who want to know what cyberspace actually is. The Tipping Point by Malcolm Gladwell (2000), for those who want to understand more about the spread effect concerning ideas and information in networks.

--- ✦✦✦ ---

Smart Energy: The Booming Field

HERVÉ RANNOU, CEO Items International, France, the chair and moderator of the session, welcomed the panellists and set the frame for the following discussions:

Cityzen Data

Items started working on smart energy a few years ago and today the company is focussing on digital innovation, smart grids, big data and smart cities. In parallel, Items has launched another company which is called Cityzen Data, because the core of all this is data.

Some landmarks of what we addressed when talking about smart grids and smart cities:

Smart grids, because digital technologies are going to assist renewable energies growth. This is a very strategic issue for many countries, in particular in Europe.

Cities, because they are the place for smart meters, sensors and array systems in many infrastructures.

Environment and quality of life is a question of sensors and data (e.g., air and water quality, noise control or traffic management).

Data, because this amount of data has to be managed, especially when talking about big data and open data.

Security, because energy is one of the biggest issues in the future and there are a lot of concerns in different countries all over the world. We are going to face critical problems in the future.

Usage, because we have a lot of questions about the benefits for people and the motivation of citizens.

The question of privacy, because we know that there are some risks for privacy, even if we don't know if these risks are more problematic than in the mobile context.

And last but not least, openness. It is a huge challenge for Europe.

JEAN-CHRISTOPHE CLÉMENT, Expert Energy Engineer, Chamber of Industry and Commerce of the French Riviera, France, illustrated how smart grids are developed on the Côte d'Azur.

Local Smart Grids Initiatives – Towards a connected ecosystem

Why does a Chamber of Industry and Commerce takes the challenge to develop smart grids and to help solutions to be developed? First of all, because the companies at the French Rivera consume about half of the electricity of the county. Undertaking efforts in smart energy can't be done without the companies. Second, because it is a real important issue to have affordable and secure electricity. Blackouts and expensive electricity is bad for the business of the companies in the region. Then, it is also a sector that can drive jobs and employment. The ClenTech cluster at the Côte d'Azur is about 4 000 jobs and a bit less than 900 million Euros turnover. Smart energy is considered as a convergence and meeting point between a need that we are at the end of the power-line and a solution that can be provided by the ICT world in Sophia Antipolis.

There is a need to develop local solutions, because there is only one power-line and if there is a fire or a storm blackouts can be faced very easily.

Many private and public actors tried to find solutions to this electrical leakage. There are many projects that are in development or almost finished: Each one is focussing on a different element of smart grids – some focus on production, some focus on transmission and distribution, other focus on technical aspects and some have a social approach. Each project has a different approach.

On example of a local smart grid project is NICE GRID. This project is driven by ERDF, France's national distributor. The aim is to test a solar eco district. The objective will be to develop a smart electricity grid that harmoniously integrates a high proportion of solar panels, energy storage batteries and intelligent power meters installed in the homes. On top of all this is the network energy management, it is linked to the weather forecast, as solar is very volatile, as well as to the forecast of the consumption. The network energy management tries to optimise all this.

The project is currently an experimentation that aims to test solutions to be spread all over the Mediterranean area. The big issue is to explain to the population how all this is working.

A more industrial example of a local smart grid project is REFLEXE. The portfolio of sites is primarily made up of tertiary buildings (offices and hotels), the airport, museums, industries, a wastewater treatment plant, photovoltaic plants, storage facilities using high-temperature batteries and pumping stations on the drinking water network in the Nice region. The idea of this project is to test electrical flexibility. What can be downgraded or upgraded in the processes or in the buildings in order to use energy when it is more available?

The Chamber of Industry and Commerce of the French Riviera would like to establish a reflection integrating all these various projects. As each one is focussing on one special topic, the idea is to assemble all the stakeholders, users, industry, research, producers, and to reflect about a global smart grid. As a first base a "Côte d'Azur Smart Grid Charter" has been elaborated and should be adopted by all players.

In the context of smart grids, one has to involve energy and ICT players from the product to the services layers.

The four steps to foster smart grids solutions penetration: 1) Definition of a local energy mix: What are the energies that are available today and tomorrow, at which cost and which environmental and socio-economic impacts? 2) Shared Infrastructure: Definition of the sharing of energy and ICT infrastructure. 3) Specification of the local and global piloting. 4) First set of elements to include a “smart grid” package in the specifications of the future buildings and infrastructure developments on the Riviera.

MICHELA VELLICO, Remote Sensing Expert National Institute of Oceanography and Applied Geophysics- OGS, CARS group (Cartography and Remote Sensing), Italy, provided an introduction in an impressive and ambitious European project:

The EnergyCity Project

The EnergyCity Project is one of the projects the National Institute of Oceanography and Applied Geophysics – OGS participated at.

The EnergyCity Project, which has just finished, was a European-funded project coordinated by the Budapest University of Technology and Economics, aimed at reducing energy consumptions and CO2 emissions of towns and cities in Central Europe. Selected urban areas of seven European cities have been surveyed with an OGS aircraft equipped with remote sensing instruments. Thermal and hyperspectral images have been collected in order to detect heat energy losses from buildings.

EnergyCity intended to contribute to the implementation of renewable energy sources and efficiency practices in cities in Central Europe through the implementation of these activities: Data collection and system development – a new innovative methodology to evaluate energy consumption of buildings. The implementation of common actions in cities. And then, to develop a common transnational strategy.

A series of pilot actions in the seven cities were delivering pilot training for carbon mapping, implementing awareness raising campaigns and fuel poverty reduction plans.

The partnership of EnergyCity included a well balanced mixture of 10 partners from 6 different countries coming from two main sectors: city/local authorities and research institutions. Together they represent varied views across a range of public and private stakeholders and interests and provide competent knowledge and experience in the field of energy efficiency, renewable energy sources and geographic intelligence, especially regarding urban environments and infrastructures in Central Europe.

A jointly developed final transnational strategy and policy guidance document was computed, in order to deliver a series of recommendations that are supported and complemented by the case studies, tools and examples developed by the EnergyCity partnership.

The recommendations target all levels of governance, from project stakeholders and partners to European institutions and national governments, regional and local authorities. The policy guidance will make a contribution towards the increase of energy efficiency in cities, in line with the ambitious energy and climate objectives of Horizon 2020 to reduce greenhouse gas

emissions by 20 percent, to increase the share of renewable energy to 20 percent and to make a 20 percent improvement in energy efficiency.

The seven cities surveyed have been Bologna, Treviso (Italy), Velenje (Slovenia), Budapest (Hungary), Munich, Ludwigsburg (Germany) and Prague (Czech Republic). These cities have been chosen because they are very different one from the other.

In terms of the methodology used, a Piper Seneca II aircraft has been equipped with remote sensing instruments. On the bottom of the aircraft, 2 instruments were fixed: a Thermo Tracer TS9260 NEC (a digital thermal camera working in the Near InfraRed spectral field, with a spatial resolution of 640x480 pixel) and a Hyperspectral sensor AISA Eagle 1K (a digital spectrograph imager working in the Visible Near InfraRed field). The airborne thermal images detects on-sensor infrared radiation emitted from roofs. The hyperspectral images provide information on construction materials through the analysis of spectral signatures.

When putting these two information together, you get the most important data in evaluating energy efficiency of a building, which is the building's roof surface temperature. The temperature must be set in relation to the ground temperature.

All this data have been inserted in a spatial decision support system that has been developed specifically for the EnergyCity project. Inside this spatial decision support system, you can query the city you want and you can obtain the information you want on a specific building you are analysing. The data is very easy to be acquired, but need very careful procedures to be processed.

The aim of the EnergyCity project was to develop the methodology which can be applied to every European city. Hopefully other municipalities will follow the example of the 7 cities involved in the EnergyCity project and request for a survey of their area.

MARCELLO GUAIANA, Senior Officer International Technology Transfer Programme, AREA Science Park, Italy, provided a most interesting insight in

Geothermal and Solar Driven Innovative Energy Plants
for Conditioning Residential and Commercial Buildings
as ICT-Based Network of Open Laboratories

In Europe, buildings are responsible for 40 percent of the total energy consumption. Each intervention in this area is important.

How to fund and deploy smart energy programmes at a national level? The answer was to create some demonstrators, using the ENERPLAN experience with the LID (Laboratori/ Impianti Dimostrativi) demonstration plant concept as optimal demonstrative pilot scale.

How to scale-up the LID concept at a European level? The answer was territorial cooperation programmes useful to boost newly established international network of Open Labs specialised in Solar Cooling Technologies.

The key competences that can be found in companies and research centers settled in the Friuli Venezia Giulia Region, cover the entire chain from idea assessment up to market

development, passing through research activities, product development and collaboration.

The energy programme developed at the national level is called ENERPLAN. The objective was to develop and diffuse innovative solutions for energy efficiency and energy production from renewable sources and alternatives to fossil fuels; and to make available demonstration plants (LID) to be used as laboratories for technological development and industrial trials.

For the time being, the programme is finished and there are 8 LIDs in place: High temperature heat pump; Building envelope active insulation; Energy recovery from waste air exhaust; PV systems; Micro gas turbines cogeneration plant CHP system; LED based road lighting; Ecological safety; Renewable District Heating.

There is a well functioning system of companies that can potentially produce this kind of energy.

Each time it was possible, smart LIDs were set up: ICT systems to monitor the performance of PV modules (monocrystalline silicon, thin film modules) and cogeneration units (internal combustion engines and gas micro turbines) have been set up. Enesylab (DIA UNITS) has also developed the software ENPAT-Energy Performance Analysis Tool aimed at designing and developing innovative energy systems for civil and industrial construction. It is a simulation software that allows designers to chose between different sources of renewable energy.

With about 9 million euros of investment, ENERPLAN is a very big project, partially financed by the Italian Ministry for Environment.

In terms of results, the photovoltaic systems have shown a good environmental impact: more than 51 000 kg CO_2 yearly are saved, which corresponds to an economic impact of savings of more than 11 500 euro per year.

In Trieste there are a lot of boilers that are using diesel. The idea was to change these boilers, with a very innovative system that uses geothermic energy and provides hot water at 80°C. With a very low investment people can replace their old system, with this new one with zero emission.

Thanks to a programme financed by a regional government, this technique entered the phase of industrialisation. In about 2 years this system will on the market.

AREA has focused on demonstrative small plants using solar cooling technologies (< 50 kWf) and strived for getting adequate funds to scale up its LID concept. This action turned up in two EU funded projects aiming at newly established international network of Open Labs focused on Solar Cooling Technologies, namely: Adriacold (Diffusion of Cooling and Refreshing Technologies using the Solar Energy Resource in the Adriatic Regions), and Emilie (Enhancing Mediterranean Initiatives Leading SMEs to Innovation in building Energy efficiency technologies).

Solar cooling is an innovative technology with a strong potential for development, since it combines two new technological systems: efficient solar panels (in particular vacuum and concentration solar panels) and ab/adsorbtion chillers.

Solar cooling provides a proven advantage: the period of maximum solar energy use for air

conditioning of buildings and premises corresponds to the period in which there is the maximum solar energy availability.
The challenge is to identify and test innovative technologies, competences, knowledge and products representing effective solutions for energy efficiency in tertiary building sector by means of innovative ICT-connected network of pilot plants.

The objective is to facilitate the wider and faster adoption of alternative energy systems for air conditioning in public and private buildings, fostering collaboration between public authorities, scientific institutions, economic operators in the "cold" sector and end-users with small power devices (range 15-50 kWf); to activate clusters of public authorities, manufacturers of equipment for environmental conditioning, tour operators, agricultural and agro-industrial products willing to increase innovation capacities at transnational level in the field of building energy efficiency, and to contribute to the EU 2020 target.

SERGIO LA MURA, Technical, Research & Development Director, Siram, Italy, delivered some most interesting insights in

Thermal Energy Smart Grid

The company's aim is to develop, build and manage more economical and environmentally friendly energy systems.

Thermal energy smart grids are today considered one of the most energy efficient solutions for cities. This is known as district heating and cooling.

District heating indicates the supply of heating and/ or sanitary hot water to users at a distance, through a system of pipes that transport heat from a power plant (hot water, superheated water or steam), that is generated by different types of energy sources (traditional fossil fuels, renewables, energy mix) going to replace traditional systems of heat of individual buildings.

The main components of district heating are the power plant of heat, the distribution network of hot water and the substations of use. The centralized production of heat enables to have a greater efficiency than distributed boilers in every home, with obvious energy savings and environmental benefits. District heating contributes to decreasing chimneys and to having a better control of toxic micro-pollutants. Power plants are energy efficient and have upscale control systems.

District cooling is a sustainable alternative to conventional electricity of gas-driven air-conditioning systems. As with district heating, the idea is to use local resources that otherwise would be wasted or difficult to use.

The befits are cost reduction (no maintenance cost, tax benefits and reduced energy cost of about 5-10 percent), high energy efficiency guarantee, higher security than a traditional systems (so risk for gas leaks, fires etc.), and environmental benefits.

Siram is part of the Dalkia Group, which is present in 35 countries. Dalkia International currently manages about 800 district heating plants worldwide. Siram is providing energy management services throughout Italy since 1912, both to the public sector and the industry.

Siram manages several district heating networks, e.g. in Milan, Tuscany, Florence, Turin and

in Udine. The Hospital Santa Maria della Misericordia in Udine has 721 650 m3 with a total thermal capacity of 80 MW, one half for the hospital and the other half for district heating.

Thermal energy smart grids are a reality. The technology allows significant primary energy savings and, as a direct consequence, a reduction of greenhouse gases with particular reference to CO2.

MASSIMO LAMANNA, Section Leader – Data and Storage Services Group, Information Technology Department CERN – European Organisation For Nuclear Research, Switzerland, explained how the big data experience at CERN can be useful for other applications:

Is the Big Data Experience at CERN Useful for Other Applications?

CERN is an international research institute located in Geneva. Originally, it was a European laboratory, but it has long-lasting relations with countries outside Europe, like the US and Russia as well as to many emerging countries.

CERN is the home of the largest scientific instrument ever built, which is the accelerator LHC 27-km hadron collider. In order to cope with the data collected by this machine, a worldwide collaboration just for doing the data treatment has been set up. This is called the Worldwide LHC Computing Grid collaboration. It is a truly worldwide collaboration, linking up more than 200 national and international grid infrastructures. CERN provides around 20 percent of the resources (CPU and storage) – which corresponds in terms of CPU to 90 000 cores and 100 PB data.

The CERN computer centre is located in Meyrin-Geneva, but will be extended to a location in Wigner, Budapest in order to double capacities, but also due to imitations concerning the power consumption of the computers.

CERN is a power user of computing technology. This has a long history: It was one of the first users of supercomputers in a time where there were only few supercomputers in Europe. However, CERN is not only a power user but is also doing innovation in this area (Web invention, grid computing ...).

CERN participated to the ITU conference in 2006. The problem was to do compatibility analysis in the context of assigning frequencies for digital radio and television. To solve this problem, the same infrastructure that is utilized for physics was used: the EGEE (Enabling Grids for E-Science in Europe) grid and a system used for CERN LHC to increase the reliability of the grid.

The same system was used to help biologists to pre-select drugs or chemicals against the bird flu. This required to scan millions of chemicals (about 103 s per chemical-protein pair) with 1000 PCs. The good candidate was then given to biologist.

CERN also participate to an observation and assessment system supporting sustainable development in the Danube area and Black Sea region.

Big data is not only in High-Energy Physics. Big data means different things to different people. One could use the 3 Vs “volume”, “variety” and “velocity” to define big data. The

volume of CERN's data is definitely big. Velocity ranges from real-time to batch. However, the variety is relatively low.

But what about smart cities or traffic analysis? The volume of what CERN is doing is too high. LHC is not (yet) what a single area can "produce": 100 of sensors giving traffic info in relative frequent samples will collect less than 100 GB per year. However, the variety is very high. The data came from completely different sources, e.g., highways, phone companies, police departments, city administration,…

Something that has some resemblance to that at CERN is not the data of the accelerator, but the data of the system that deals with the data of the accelerator, which is typically in the order of 100 GB per day. This data is used for trend analysis, troubleshooting or optimisation and system evolution.

In cooperation with the National Inter-University Consortium of Telecommunications (CNIT) and the Scuola Superiore S. Anna Pisa (SSSA), and exercise has been carried out in Turin and the Port of Livorno as pilot sites. In this exercise, CERN put in place a full simulation of wireless sensors and traffic flows and provided scalable data platforms to analyse the data.

ADRIANO RUCHINI, EFQM Excellence Advisor, Italy, provided some though provoking reflections on

A Green Wheel for Smart Cities Striving for Excellence

EFQM, the European Foundation for Quality Management, establishes international reference models of excellence. It is an organisation operating worldwide, founded 25 years ago, and includes companies such as the BMW Group, Siemens, EDF, Philips, Bosch, TNT, Solvay. EFQM is committed to help organisations drive improvement through the use of the EFQM Excellence Model, a comprehensive management framework used by more than 40 000 private and public organizations all over the world.

What are we looking for? We are producing smart energy, we want to have smart cities, but how do we use this energy? Are we using it in an efficient way? Are these cities sustainable? We always talk about energy, but in a complex society a lot of points are coming together. How to put all these things together? Do we have the culture of sustainability and smart cities? And how to make a confrontation between one city and another or between different systems? How to compare results?

This is one of the help provided by reference models of excellence. It can be applied to any sector of our activity. Starting from leadership or strategy and connecting people and society, partners and processes, and then analysing also the results and putting all this in a framework, this could be a way of multilingual and multicultural communication. This has already been experienced on the level of international Awards.

In terms smart energy, which is definitely the booming field of the future, this means to put the different experiences in the model or to connect different experiences, because it could be easier to help citizens in getting this culture that is looking for smart energy and more efficiency and effectiveness of their actions.

Every daily action, from walking to driving to every single action, is looking on smart energy and innovation. This is one of the parts we need to connect to this or other models

for a better quality of life and a better protection of our planet. Where we have to put the planet first, and then people and profit.

MARINKA VIGNALI, General Secretary and EU Coordinator ARESS - ARAB Renewable Energy and Sustainability Society, Italy, presented a great initiative promoting cooperation and common standards in the Mediterranean basin.

ARESS: Arab Renewable Energy and Sustainability Society

ARESS has been recognized on 7 October 2013 as an international association by the Belgium law. The association is born to aggregate the European and Arab countries.

ARESS is an organization promoting harmonisation towards labelling and common standards. Example: An operator has problems in selling cooking oil in Europe. Cooking oil is not recognized as waste in all Arab countries. In Egypt, for example, it is considered as raw material.

The second aspect promoted by ARESS is proper technologies and know-how transfer. For instance, in the context of the example given above, the collection of cooking oil is done in a very professional way in Europe and this concept could be transferred to Arab countries to become better organized and more efficient.

The third aspect is market promotion, which is actually the consequence of the first to aspects. To improve a common market, but towards the creation of a supply chain between the Arab countries and the EU region. The meaning is not to promote specific companies, but to create a supply chain in order to allow both the EU and the Arab partners to share something and to grow together.

ARESS will provide an added value to existing initiatives in order to avoid overlapping. ARESS has been accepted by large initiatives in this sector, e.g., the Renewable Energy and Energy Efficiency Partnership (REEEP), MED-ENEC Project on Energy Efficiency in the Construction Sector in the Mediterranean, PWMSP (Paving the Way for the Mediterranean Solar Plan) or RES4MED (Renewable Energy Solutions for the Mediterranean). ARESS is collaborating closely with these initiatives.

ARESS applies to itself the concept of a human smart grid. The initiative's platform is organized in a horizontal way, there are no vertical structures. There is president and a board of directors, but they are directly involved in the working groups.

ARESS exclusively supports suitable projects. The initiative is promoting all projects that show that they are able to continue once the incentives stopped.

Examples of projects that ARESS is organizing: The project "From fork to fuel pump" is organized in cooperation with AREGAI (international recognized labelling) and Salgaim (waste-to-energy plant). The idea is now to create an entire supply chain, in which the energy that is coming from Salgaim will be also recognized from the point of view of tractability, i.e., it is compliant with the new renewable energy directive.

The second project concerns mobile cogeneration units, developed by an Italian company. The solution is very adaptable to all kinds materials and fitted perfectly the needs of a Palestinian member who was looking for something to create energy from the paper residues of the University of Palestine.

The third one is a solar thermal unit, which are solar thermal modules put in terraces to provide hot water.

Training would be the powerful tool to harmonize the technical competence to use local human resources in local companies. Harmonizing know-how is seen as a positive step to merge the Mediterranean Basin towards a common market.

With regards to smart grids and smart villages, this kind of concept will be included from the beginning in the projects. When providing training, it is easier to change the mentality of people from the very beginning. People will be trained since the beginning to this multidisciplinary approach.

The added value of this initiative is the bottom-up approach, that is involving first of all the civil society. Having the population on its side, it is easier to get linked to the governments and institutions.

--- ✦✦✦ ---

Q&A

The question addressed to Jean-Christophe Clément, French Riviera Chamber for Industry and Commerce, concerned the issue of the different stakeholders involved.

Jean-Christophe Clément, Chamber of Industry and Commerce of the French Riviera, confirmed that smart grids address solutions that need to imply all stakeholders, from energy production to transmission and distribution to energy consumption. It also strongly relies on the implication of local authorities. Fostering smart grids in France requires to have all the stakeholders, from public to private and from companies to citizens, around a table in order to open the discussion on how we will produce and manage energy in a smarter way. It is a real stake and it is not easy in the today's context of regulation to have all these people together and to have programmes starting. This is why the French Riviera started with demonstrators. Once the business case and the political approach is validated, it can be developed to wider products.

A question about whether there are any governments taking part in the is EnergyCity project was addressed to Michela Vellico, OGS.

Michela Vellico, OGS, stressed that the intention is to involve governments in the future. However, the project has just finished. The most sensible issue has been to get the local authorities and municipalities involved. Hopefully, there will be a bottom-up process to involve the governments to widely use the methodology in the future. But this is a process that has to be carried out step by step.

Mapping is just a first step. The second one would be refurbishment and technical intervention on the public buildings – but this is in the hand of the municipalities. Currently the tool is only available to the EnergyCity partners, but the idea is to make it available for everyone in the future.

Marinka Vignali, ARESS, provided an example of a result of a project carried out in Palestine. The project interviewed 1000 households at their home and also investigated the shopping center. They gathered data about consumption, prices in the stores etc. The project finally discovered that the people in Palestine preferred to buy oldest refrigerators that consumes 5 times more than recent ones. Now the results of the study is in the hands of the municipalities, showing that they could save 500 000 dollars per year by buying new refrigerators. It was important to first convince the citizens (that they are loosing 27 cent per day with their old fridge), to then convince the municipalities. Energy projects always have to be combined with awareness building and knowledge.

A last question addressed the relationship to the design field.

Hervé Rannou, Items International, pointed to the design of services. Big companies start to be aware of that and request designers who are a mix of art design and usage, the ways people are going to create new services.

When we started to talk about smart phones in 2006, the industrial players didn't believe at all that this kind of services will have a success. Nokia for instant was saying, the only thing people want to do with their cell phone is to make phone calls – and then Apple came and Android came. Designers have proposed a new relationship between the tools, the application, the service and their usage.

There is a strong challenge in energy because most people don't care.

--- ✦✦✦ ---

Collaboration in Danube:
Creating an Attractive Environment to Facilitate Investments

JOŽE GRIČAR, Chair Department of Informatics, University of Maribor, Slovenia, the chair and moderator of the session, welcomed the audience and briefly introduced the panellists.

Relevance of the Cross-border eCollaboration in the Danube eRegion

The session should be considered as a brainstorming leading to some ideas about possible joint actions, joint – working together, and actions, not just concepts.

The "Danube Region" is an important message to the citizens, to the population in the region, because all of a sudden people are noticing that there is an effort, a EU-level support to the region of 14 countries that encourages to collaborate.

During the first conference of the Danube Region Strategy organized by the European Commission in Ulm, Germany, in 2011, someone said: The Danube region used to be a connecting river in Europe. Then, for a long time, the Danube was a dividing river, and now the Danube is becoming a connecting river again. It's something about a river and its role in bringing populations and nations together.

It is a blessing for the region, but it is also about neighbours working together. A lot of research has been done in Sweden and Finland, numerous dissertations have been published about what does it mean for the regions to come together in a new setting. What used to be the end of the world, a border, all of a sudden is becoming a central point of a new type of a hub.

When talking about cross-border, it is about any type of borders. There are numerous ones. This session would like to address some of the issues where we believe something has to be done. There are too many silos in countries and institutions.

It is also about eCollaboration. It is about collaboration and working together, about taking and acting together. Of course we have in mind collaboration using technology. During the session some ideas will be shared about what is going on in the region and what may happen in the region. What are the activities the attendees would like to engage and work together?

We all have regions, wherever we go there are regions, there are neighbours. The Danube Region and Baltic Region most probably have a lot in common. How could these two regions collaborate. How could they increase the exchange of goods and people -- more business, more tourism, better life, for the people in both regions.

This session is an expression of an invitation to collaborate and work together -- cross

border, using latest and best technologies, engaging the right people, those who are the doers, those who are the optimists, those who believe we can do much more than we did in the past.

CHRISTIAN KITTL, Managing Director, Evolaris Next Level, Graz, Austria & Mobile Living Lab, & Steering Committee, ALADIN – ALpe Adria Danube Universities Initiative, Austria, presented a great initiative which has been established more than a decade ago by a small group of universities and which grew into a large network now being used to create new projects.

ALADIN –
The ALpe Adria Danube Universities Initiative

The Danube region reaches from Lower Germany down to the Black Sea. There are many countries involved. Italy is not official partner in the Danube region, but this doesn't prevent collaborations with Italian partners – or with partners from outside the Danube macro region.

Within this Danube macro region, the European Parliament has asked the European Commission to develop a strategy, a macro-regional development plan, similar to the one that was first developed for the Baltic Sea area.

The ALADIN network represents 19 universities and LivingLabs in the Danube Region. Many of the universities and partners also run a LivingLab, which is an instrument that was introduced in 2006 during the Finnish EU Presidency. It bases on a work that has been published by Henry Chesbrough in 2003, which aims at involving users and potential users early on in the creation processes of services and new products.

ALADIN tries to apply this concept in the region and forms a network of universities and LivingLabs involving multiple stakeholders. The initial core group came from Graz, Trieste, Rieka and Maribor. It grew substantially, and nowadays there are also partners from outside of the region, e.g., from Dublin, partners form the US and even from Hong Kong. These partners form the extended ALADIN group.

Europe is characterized by a very diverse landscape of innovation activity. The regions that are most successful in innovation are in the Scandinavian region, the Baltic Sea area, or in Lower Germany and in the west of the Danube region. The further east one comes, the less successful are the regions in developing innovative products and services. The task of ALADIN is to use the experiences that have been made in the more advanced regions to assist and help develop those regions where the innovation is under a certain level.

Regarding the strategy for the Danube region, the EU strategy consists of a strategy plan and an action plan. The Action Plan for the EU Strategy for the Danube Region is based upon 4 pillars. Different actions are assigned to each pillar. The following three actions are those ALADIN can support most: To develop the Knowledge Society through research, education and information technologies; to support the competitiveness of enterprises, including cluster development; and to step up institutional capacity and cooperation.

ALADIN wants to apply a methodology, known as the Digital Business Ecosystem Model. This means that there are some catalysts or facilitators that help to build regional economic clusters, which would than on their part connect with clusters in other parts of the region to learn from these experiences. It also means to involve strongly the SMEs, because in many EU funded projects SMEs have been underrepresented and the EC is tying to increase the level of SME involvement for Horizon 2020, the upcoming research programme. It

seems to be a suitable model and goes very well with the LivingLab approach, where you have the users, science, industry and where you also have the regional policy makers in order to get things going.

At the ICT2013 event in Vilnius, which takes place on 6 to 8 November, the ALADIN initiative will propose a project which aims at developing such a Digital Business Ecosystem in the Danube region and connecting it to the macro region of the Baltic Sea Area. This was the region where the first macro region strategy was developed by the EC. Moreover, the region is far ahead compared to the Danube region when it comes to certain eServices, such as eInvoicing. The idea is to create a local network of actors and then again connect to the Baltic Sea area to lean from these experiences. The intention is to submit a proposal in one of the early Horizon2020 calls.

Another event is the Danube Business Forum which will take place on November 14 -15 2013 in Vienna. It will focus on issues of the Danube region, in particular on the two specific topics eInvoicing and eHealth.

MAURIZIO FERMEGLIA, Rector University of Trieste, Italy, delivered a great talk focussing on the four terms: barriers, perspective, research and higher education.

Universities are organized in disciplines (even though faculties no longer exist in Italy), and people still say, they are going to a faculty. These are barriers. The world is not expecting experts in disciplines, the world is expecting experts in transversal multidisciplinary fields: Energy, water, environment, food, health and many other. Most of these themes that will be very import for the world are multidisciplinary.

We are talking about creating an attractive environment to facilitate investment.

Horizon 2020 is strongly related to investment of money in Europe in the next 7 years. Societal challenges will be the main focus of Horizon 2020 – and here, one can find exactly the same themes mentioned above: Climate actions, integrated transport, secure and efficient energy, food, water, health. This is where one part of the money will go to.

Another part of the money will go to excellence science. We need to be prepared to have very good research centres in this area and very good integration of research with higher education. This is the second message. The third message is industrial leadership; and if looking at industrial leadership, there is something that is brand-new in the EU politics: it is facilitate access to risk finance. This is of highest importance right now.

And then there are the key enabling technologies. The paradigm is totally reversed with respect of what it has been several years ago: where we focused on technologies and then research was asked to apply their technology to solve some of the problems. Here we start with a problem and we have key enabling technologies that may be used together -- ICT, nanotechnologies, space, advanced materials and manufacturing. We have to think multidisciplinary, otherwise we are lost.

Industrial leadership is taking about 30 percent of the budget, and thereof most will be invested in leadership in enabling industrial technologies. But also in risk finance, which has proofed to be one of the limiting steps in this area in Europe.

In the context of financing key enabling technologies, ICT and nanotechnology will play a very important role. How to combine ICT and nanotech, and perhaps biotechnology, and photonics and micoelectroncs. If you really want to say something new in this arena, this could be one possibility.

Trieste has a high density of research, there are about 30 researchers over 1000 active citizens. Trieste University together with SISSA, the second university in Trieste, is surrounded by several important entities producing high quality science. This is a perfect environment for producing research and transferring research to the industry. Trieste is also very active in collaborations with universities and industries located in Central-Eastern Europe. This is a solid base on which to create a new perspective.

Nanothech and ICT will cover most of the investments of the EU in the coming years. A Technology vision 2020 shows among the enabling technologies for science and engineering technology, computational technologies is playing an important role, and computation and molecular science is placed as one of the first enabling technologies for this area. Why computation and molecular science that used to be something typical of a theoretical physicist or a theoretical chemist? Because of nanotechnology and particularly because theory modelling and simulation is playing an essential role in designing new materials, new tools, new drugs and carriers for nanomedicine. When talking about nanotechnology we have in mind several different sectors, from medicine to ICT, energy, material science, food, instruments etc. It is obvious how multidisciplinary and how may fields we can tackle if we have basic science and basic tools in this particular sector.

The National Nanotechnology Initiative Investments (US) show an increase of investments in all sub-sectors of nanotechnology. The evolution of the National Nanotechnology Initiative Investments shows large percentage increases for nano-manufacturing and for environment, health, and safety. Guiding nano-manufacturing, investigating the effect of nanotechnology and nanomedicine on health and environment will be key for Europe in the next years.

The market is following more or less the same trend. The market evolution 2006 to 2015 shows a particularly impressive evolution for healthcare in terms of market exploitation, even though all the other fields will grow significantly.

It is interesting to notice that Japan is concentrating on nanotech for materials. On the other hand, South Korea and China are following more or less the same trend. A different trend is in the US, which puts less stress on nanomaterials and but focuses on nanomedicine, life science and environment. Europe should do the same and concentrate on life science and environmental aspects.

The passive nanostructures nanotechnology area is passed away. There is nothing really new to discover in this field. As well as in the active nanostructures, where the nanostructure is moving and adapting to the environment. What we can expect to have are nanosystems, 3D networking and new hierarchical architectures, robotic and molecular nanosystems, molecular devices “by design”, atomic design. And at the end, we will have totally converging technologies where nano-bio-info from nanoscale will converge. There will be no more difference between ICT and nanotech. It will be a totally new kind of convergence that will appear after 2020 – if it will.

The US Materials Genome Initiative is about developing a material's innovation infrastructure, through advances in and integration of computational tools, experimental tools, digital data and informatics. Its objective is to increase the pace of developing advanced materials for energy, security, and human welfare with.

The power of simulation: The molecular complexity is the number of time steps multiplied with the number of atoms simulated in one day. A simple atom simulation for a simple monoatomic fluid is the number of atoms that can be simulated for 10ns in one day. This will grow exponentially in the future.

This is done by Multiscale Molecular Modeling, which means passing messages from one scale to the another. Passing information to an atomistic level when we have atoms, passing information to the mesoscale level when we have groups of atoms, passing information to the typical process engineering level, which is the final element simulation where we have plenty of codes, ready to be run.

However, big data together with simulation is not enough. It needs continuously to be compare with experimental data.

Money invested in research will give results. Results of a research is not giving money. It is through innovation the results of the research will provide money. Innovation is discontinuity in knowledge -- generating an advance of productivity.

We have to virtually re-pave the Gemina roman road, using technology, science and high education.

JANI RECER, Assistant Director for Informatics University Medical Centre Ljubljana, Slovenia, provided some very interesting insights into

eHealth Collaboration in Danube Region

Digital Agenda for Europe aims at helping European citizens and businesses to get the most out of digital technologies. It is the first of seven initiatives under Europe 2020, which is the EU strategy to deliver smart, sustainable and inclusive growth.

With respect to healthcare, there is a directive in place, the Directive on the application of patients' rights in cross-border healthcare. It aims to enhance interoperability between electronic health systems, continuity of care and to ensure access to safe and quality healthcare. The EU eHealth policy refers to tools and services using ICT that can improve prevention, diagnosis, treatment, monitoring and management. The goals we would like to achieve through eHealth policy are 1) to improve citizens health by making lifesaving information available between countries when necessary using eHealth tools; 2) to increase healthcare quality and access by making eHealth part of the health policy and the coordinating countries' political, financial and technical strategies; 3) to make eHealth tools more effective, user-friendly and widely accepted by involving professionals and patients in strategy design and implementation.

In the Danube Region Forum that we establish we have initiatives that are ideas with proof-of-concept, they are called prototypes. Among the large list of published prototypes, the following three are most promising ones: The first one is Collaboration between Emergency Services along boarders.

The second prototype is Drug Event Reporting. In this prototype three hospitals are collaborating: the University Medical Centre Ljubljana, the Cattinara hospital in Trieste and the University Hospital in Graz. Drug Event Reporting with mobile information solution is about medication errors in hospitals. The overall goal of the cross-border project is to achieve significant reduction in medication errors through an advanced and easy-to-use reporting, analysing and feedback tool. Today, only up to 10 percent of incidents are being reported according to international statistics. The developed prototype enables medical staff to briefly report medication problems with their mobile devices, in addition to a more detailed format available on standard PCs.

The third prototype is a Regional Arthroplasty Register. An increasing number of hip and knee replacements demands a careful follow-up of success of implants and techniques used. Expected cross-border impacts is to establish the registry which comprises national and regional registries in the region, with the goal to provide information on the clinical performance of a particular type of orthopaedic prosthesis.

The intention is to submit a proposal for funding of the prototypes in the framework of the Horizon 2020 initiative, which is the financial instrument for implementing the Innovation Union and securing Europe's global competitiveness.

TOMAŽ BREZNIK, Presales Specialist, SAP, Slovenia, presented a powerful analytic tool that allows municipalities to get a deeper understanding of their tourism activities

Tourism Insight @ SAP HANA

The initial motivation was to help the business environment, either the public or the private sector, to run their business more effectively in the tourism industry. A prototype, called Tourism Insight, has been developed.

Tourism is one of the most important industries for any country due to its high economic potential. At the same time, tourism is very complex.

There are countries which are doing better than others. Generally, a ranking is done in Tourism Reports, and the most attractive countries are those with a very friendly hotel environment, good infrastructure and something to offer to the tourists. It is important to understand how good a region is working today, what is done wrong and what needs to be improved.

A typical challenge in tourism is that the institutions responsible for tourism don't have enough insight in the information. There are a lot of data produced by tourists, but they don't know how to use them in order to optimise tourists offerings and pricing. Competitiveness in terms of offerings is highly important, especially in times of economic crisis.

The objective of the Tourism Insight prototype is to help governments, regions and municipalities to increase revenues from the tourism industry. Another important aspect is that, investments in infrastructure and activities also attracts more citizens and the final objective is to create wealth for the citizens of the respective country.

It was decided to start the prototype on a country level, i.e., the neighbouring countries of Slovenia, Italy, Austria, Croatia and Hungary .

Publicly available data -- available on sites like Eurostat, the United Nations etc. – were compared to evaluate how they could this be used for the pilot.

The example of an individual analyses of performance for Italy compared to the neighbouring countries, Slovenia, Austria, Croatia and Hungary, has been presented: Tourism Insight displays the overall historical view of the general trend of tourism as well as the contribution of tourism to the GDP. Around 250 billion dollars are generated by the tourism industry in Italy. Before the crisis, the trend went up and now stabilizes.

Another important aspect is to understand the employment contribution of tourism: About 5 percent of the employment in Italy is related to tourism.

Compared to its neighbouring countries, one can see a drop in tourism revenues in Italy, while this is rather stable in the other countries. In terms of employment, Croatia, with about 15 percent, has the highest direct contribution to employment.

The idea is now, how to use this on a local level, which also strongly depends on tourism. Points of interest which might be relevant for municipalities

Tourism in municipalities can be mapped on economy and environment of citizens and their nationality, socio-demographic information of the tourists (sex, age, education, occupation, annual income), the tourists travel scope (travel purpose, duration of visit, origin and destination, modes of transport, types of accommodation), but also on the number of tourist attractions, the seasonal trend of tourist flow, survey information at places of interests and the administrative impact.

The benefit of this kind of innovative analytic tool is that it helps municipalities to get a deeper understanding of their tourism activities -- where they are today, where they have been and where they are going. It also helps to understand tourism patterns – what is selling well and what doesn't. It can be used a s tool for municipalities to decide where to invest to increase tourism in their region.

The prototype uses historical data from governments or municipalities, which are then uploaded to the SAP HANA solution. The results, which are available in milliseconds despite millions of tourist data, are presented on web browsers.

The input needed from the municipalities is the data provided in standard format. The technical infrastructure would be provided by SAP. SAP Slovenia is working with its development centres all over the globe. In the case of Tourism Insight, there is a close cooperation with SAP India, who also launched this initiative.

EDI KRAUS, Councillor for Economic Activities Municipality of Trieste & Director General, Julon Ljubljana d.d. & Board of Directors Member, Aquafil S.p.A. Trieste, Italy, illustrated the impressing transformation of the company from a local SME to a global player.

Aquafil primarily deals with the production of Nylon 6 fibers and polymers. The company is headquartered in Trento, Italy.

In 1996, when the owner wanted to internationalise the company, he decided to go to Slovenia, because it was only 5 hours driving and the facilities were there. At this time, working cross-border in a completely new environment was not easy for an SME of 500 employees, however the short distance allowed to communicate very fast and to acquire a lot of experience and knowledge on how to work internationally. Based on this experience, the second step was done in the same manner and another plant was opened in Croatia. In 2001, the company opened a factory in Slovakia.

Thanks to the different languages and cultures gathered in this very small region, Aquafil was able to obtain an enormous experience – and this wasn't even very costly. The same when the company decided to use SAP systems: due to the closeness of the company, Aquafil was able to skill their employees in a very smart end easy way. And resulting from this policy, it was very easy to make a big leap and to open a new factory in the US in 2003.

The company didn't lose money and the investment was successful. And it get the help from it best engineers from its plants all across the Danube region.

In 2007, once Aquafil get the experience from the US, the company applied the same approach to go to Thailand and, in 2009, opened a plant in China.

Within these 15 years, the company created between its employees, across the entire hierarchy, a veritable international mentality. This is crucial, because the internationalisation was accepted enrichment and not as a risk that someone will lose a job.

Today, the Aquafil has 2300 employees and an annual turnover of over then 500 million euros. On a global market, the company is still a very small player, but thanks to the richness in the small Danube region, it was able to expand worldwide. For this reason it is very important that this region remains as it is -- culturally different with different languages, but all together in the European Union without borders in order exchange experience, do business and get a lot of experience without spending a lot of money.

--- ✦✦✦ ---

CONFERENCE DOCUMENTATION

All conference documentation, including programme, presentations and slides, speakers' profiles, participant's testimonials, and related information on the Global Forum 2013 are made available for download on the website of ITEMS International http://www.items-int.eu.

HAVE A QUESTION OR COMMENT?

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

ITEMS International
– Global Forum/ Shaping the Future –
6, rue Jean-Baptiste Potin
92270 Vanves
France

Tel: +33 (0) 1 46 42 48 76

Dr Sylviane Toporkoff, President of the Global Forum/Shaping the Future
stoporkoff@items-int.eu
Sébastien Lévy, Vice President of the Global Forum/ Shaping the Future
slevy@items-int.eu

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 edition of the Global Forum (2014).

Please make sure to check our website regularly for updates.

AIM	Alternative Investment Market
APAC	Asia-Pacific
API	Application Programming Interface
APQC	American Productivity & Quality Center
APT	Advanced Persistent Threat
AUAF	Active User Feedback in Advance
AVMS	Audiovisual Media Services Directive
B2B	Business two business
CAPEX	Capital Expenditure
CDM	Cité des métiers
CEI	Central European Initiative
CESG	Communications-Electronics Security Group
CIVAB code	Centro Informazione e Valutazione Apparecchiature Biomediche – a national coding system of medical equipment and devices
CKAN	Comprehensive Knowledge Archive Network
CNIT	National Inter-University Consortium of Telecommunications
CO2	Carbon dioxide
CPU	Central Processing Unit
DG	Directorate General
DG CONNECT	European Commission Directorate General for Communications Networks, Content and Technology
DIACAP	DoD Information Assurance Certification and Accreditation Process
DKAN	Drupal-based open data platform
DMU	Digital Mock Up
DoD	United States Department of Defense
DOJ	US Department of Justice
DSL	Digital Subscriber Line
EC	European Commission
ECIM	European Cloud Marketplace for Intelligent Mobility
EFQM	European Foundation for Quality Management
EGEE	Enabling Grids for E-Science in Europe
EHR	Electronic Health Record
EMR	Electronic Medical Record
EPR	Electronic Patient Record
Epic	European Platform for Intelligent Cities
ETSI	European Telecommunications Standards Institute
EU	European Union
EUR	Euro
FCC	U.S. Federal Communications Commission
FSER	Fascicolo Sanitario Elettronico Regionale, i.e. Regional Electronic Health Record
FTC	Federal Trade Commission
FVG	Friuli Venezia Giulia Region

GB	Gigabyte
GCHQ	Government Communications Headquarters
GDP	Gross Domestic Product
GIS	Geographical Information System
GPS	Global Positioning System
G8	Group of Eight
gTLD	generic Top Level Domain
HIMSS	Healthcare Information and Management Systems Society
HL7	Health Level Seven
HOMER	Harmonising Open data in the Mediterranean through better access and Reuse of public sector information
HSSP	Healthcare Services Specification Program
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	Information and Communication Technologies
ID	Identity
IDC	International Data Corporation
IGF	Internet Governance Forum
IP	Internet Protocol
IPv6	Internet Protocol version 6
IPDI	Increasing Precision with Decreasing Intelligence
IPR	Intellectual Property Rights
ISO	International Organization for Standardization
ISP	Internet Service Provider
IT	Information Technologies
ITA	Information Technology Agreement
ITU	International Telecommunication Union
kWf	Cooling capacity in kW
kW	Kilowatt
Kg	Kilogram
LEO	Lyons Electronic Office
LHC	Large Hadron Collider
LID	Laboratori/ Impianti Dimostrativi
LTE	Long Term Evolution
MBA	Master of Business Administration
Mbit/s	Megabit per second
Mbps	Megabit per second
MHz	Megaherz
MIT	Massachusetts Institute of Technology
MW	Megawatt
M2M	Machine to machine
NGA	Next Generation Access
NGO	Non-governmental Organization
NIEM	National Information Exchange Model
NIST	National Institute of Standards and Technology
NPO	Nonprofit organization
NHS	National Health System
ns	nanosecond

OECD	Organisation for Economic Co-operation and Development
OMG	Object Management Group
OPEX	operational expenditure
OTP	One-Time Password
OTT	Over the Top
PACS	Picture Archiving and Communications System
PB	Petabyte
PC	Personal Computer
PKI	Public Key Infrastructure
PSI	Public Sector Information
PSTN	Public Switched Telephone Network
PPP	Public Private Partnership
Q&A	Questions and Answers
QR	Quick Response
QoS	Quality of Service
R&D	Research and Development
RDI	Research Development and Innovation
RFP	Request for Proposal
ROI	Return on Investment
SEE	South East Europe
SERP	Search Engines Results Pages
SME	Small and Medium-sized Enterprises
SMS	Short Message System
SPD	Specific Privacy Data
SSSA	Scuola Superiore S. Anna Pisa
TISA	Trade in Services Agreement
TPP	Trans-Pacific Partnership
TLD	Top Level Domain
TTIP	Transatlantic Trade and Investment Partnership
UAE	United Arab Emirates
UID	Unique Identifier
UK	United Kingdom
US	United States
USA	United States of America
USB	Universal Serial Bus
USD	US Dollar
VIP	Very Important Person
VoIP	Voice over Internet Protocol
VNA	Vendor Neutral Archive
VPN	Virtual Private Network
WTO	World Trade Organization
XaaS	Anything-as-a-service
XML	Extensible Markup Language
3D	3 dimensional
2G	2nd Generation
4G	4th Generation

ORGANIZERS

ITEMS INTERNATIONAL
Strategic Consulting in a Digital World

Fondation Sophia Antipolis

COORGANIZERS

HEALTH LOCAL AUTHORITY OF VENICE

Fondazione Stock Weinberg
per la coesistenza tra i popoli

PATRONAGE/SUPPORT

REGIONE AUTONOMA FRIULI VENEZIA GIULIA

WITH THE SUPPORT OF CITY OF TRIESTE

AREA Science Park
WITH THE PATRONAGE OF AREA

PROVINCIA di TRIESTE

Camera di Commercio Trieste

MAIN SPONSORS

GPI GROUP

at&t

SBL

CASSIDIAN CYBERSECURITY

verizon

Telit wireless solutions
Making machines talk.

InfoCert

Dedalus
HEALTHCARE SYSTEMS GROUP

insiel mercato
a company of TBS Group

TBS GROUP
TELEMATIC AND BIOMEDICAL SERVICES

Alcatel·Lucent

CBT
COSMICBLUETEAM

GE Healthcare

PayPal

QUALCOMM

solinfo

ETSI
World Class Standards

UNIVERSITÀ DEGLI STUDI DI TRIESTE

DPI
DIGITAL POLICY INSTITUTE

NOEMALIFE
WE CARE

Mcube

SUPPORTING PARTNERS

insiel

FRIULI VENEZIA GIULIA

Siram

Confindustria Trieste

TRUYO INS VENTURES

Medic4all
SERVIZI DI TELEMEDICINA

CONSORZIO PROMOTRIESTE
TRIESTE

GSMA

BINGHAM

SAMMAN

WOMEN IN LEADERSHIP

pti

FORUM PA

MEDICI