EUROPEAN PARLIAMENT

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT A
ECONOMIC AND SCIENTIFIC POLICY

Economic and Monetary Affairs

Employment and Social Affairs

Environment, Public Health and Food Safety

Industry, Research and Energy

Internal Market and Consumer Protection

# Ubiquitous Digital Single Market

WORKSHOP

EN

2013

Ubiquitous Digital Single Market

EUROPEAN PARLIAMENT

DIRECTORATE GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

# WORKSHOP

# Ubiquitous Digital Single Market

## Brussels, 13 May 2013

## PROCEEDINGS

**Abstract**

The last decade marked a move from electronic, through mobile to ubiquitous services, defined as intelligent services providing users with real-time access to collaboratively generated information, everywhere, at any time and on any device. The workshop presents leading examples of ubiquitous government services applied in South Korea, Japan, Canada, Estonia, the UK and the Netherlands, as well as ubiquitous market services, with the objective of considering how Europeans could benefit from ubiquitous government and market solutions.

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## CONTRIBUTING EXPERTS

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Prof. Yong Woo Lee, University of Seoul
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Ms Catherine Dickson, Counsellor and Head of the Trade, Economic and Innovation Policy Section, Mission of Canada to the European Union
Mr Silver Tammik, Counsellor for telecommunications and Information Society, Permanent Representation of Estonia to the EU
Ms Nicola Westmore, Deputy Programme Director, G-Cloud
Mr Henri Rauch, Senior Strategist, Kwaliteits Instituut Nederlandse Gemeenten
Mr Mark Lange, Director, EU Institutional Relations, Microsoft
Mr Sameer Verma, Vice President, SAP
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http://www.europarl.europa.eu/ep-live/en/committees/video?event=20130513-1500-COMMITTEE-IMCO

## DISCLAIMER

# CONTENTS

# 1. INTRODUCTION

**Mr. Scott Marcus from the Wissenschaftliches Institut für Infrastruktur und Kommunikationsdienste (WIK)**, who chaired the session, briefly presented the aim of the workshop which was to exchange expertise on new ubiquitous solutions for e-government and provision of services in non-EU and EU countries. The experts invited were coming from both private and public sectors, presenting different models of development.

**Professor Giovanni SARTOR**, from the European University Institute of Florence, provided a general introduction to the idea of **ubiquitous services in governance and commerce** (u-governance and u-commerce), starting from the observation that we have moved from a PC-based world to a world where we can access the Internet on the move through portable devices. Internet and computing are everywhere and we are permanently emitters and receivers of flows of data. Prof. Sartor **defined ubiquity** as the state of being (or seeming to be) everywhere at once. Now this notion extends to whatever is available on the Internet, and to us as users of the Internet. He highlighted the changing landscape regarding the devices used (now ubiquitous devices) and, as regards services, the growth in the service economy and its relevance in terms of employment. Prof. Sartor also mentioned the works of Manuel Castells, who points out that the ability to participate in information fluxes made possible by the Internet is what really matters, and of Jeremy Rifkin who describes the shift from "property" to "access" and the ensuing changes in human relationship.

Prof. Sartor then moved on to the definition of key concepts. **Ubiquitous government** (u-government) relates to e-government available anywhere. According to him, this reflects new forms of interaction and transaction, which are now made possible at any time and on different kind of devices due to pervasive availability of networks, applications and services. **Ubiquitous commerce** (u-commerce) means the use of ubiquitous networks to support personalised uninterrupted communications and transactions between a firm and its various stakeholders to provide a level of value over, above and beyond traditional commerce.

The **non-profit dimension of ubiquity** should also be mentioned, with the development of non-profit u-services (for example: social networks, Wikipedia, etc.). Also these services have a significant role to play in balanced “ecosystems” for u-governance and u-commerce.

As regards **tools and technologies for ubiquitous services**, according to Prof. Sartor we have first moved from traditional services to e-services, then to m-services (mobile networks and devices) and finally to u-services that can be defined as intelligent services providing users with real-time access to desired information, from anywhere and at any time. **Cloud computing** refers to the fact that different devices give access to computing facilities through the Internet, where applications, platforms, infrastructures, storage space etc. are available. According to Prof. Sartor, **software** is becoming a cloud service. We will no longer purchase software, download it, but we'll access a service. The software will partly reside in our computer and partly in the cloud.

Prof. Sartor pointed out the **barriers to the development of u-services**, at the organisational, technical, regulatory and social levels. He also addressed the need to address privacy issue on a one hand, as larger set of professional data is being conveyed (ex. geolocation data), and security issues on another hand, as there are additional security threats in a mobile environment.

In his conclusions, Prof. Sartor emphasised the **challenges**. We can access everything everywhere, but we can also *be* "accessed" everywhere. Our movements, purchases, activities are stored and can be exploited in different ways. For Prof. Sartor, **data collection is an issue**, and to correctly face it **we need consumer and data protection**. He ended his presentation raising the issue of **regulatory challenge for the EU**: how to provide new services, effectiveness, innovation, security, privacy, consumer rights and trust in the single market, given global ubiquitous commerce and connected ubiquitous governments?

# 2. UBIQUITOUS GOVERNANCE

## 2.1. Leading jurisdictions outside the EU

### 2.1.1 South Korea - Open E-governance

**Professor Yong Woo LEE** from the University of Seoul, who is also President of the Ubiquitous City Consortium for Seoul, presented the South Korea experience on open e-government.

He started by briefly outlining **South Korea's e-government** status, development of which began in 1978 and gained maturity in 2008 with the expansion of integration of e-government. As a result of these efforts, South Korea was recognised by recent UN surveys as the best e-government. South Korea is now moving **towards smart governance** with the aim to attain smart e-government in 2015. **Five objectives are set in this regard**: 1) to realise the world's best mobile e-government; 2) to establish a safe and sound society; 3) to promote smart work that balances work and life; 4) to provide personalised services by communicating with other people; and 5) to build strong e-government infrastructure.

To illustrate his point, Prof. Lee presented **e-government best practices** giving concrete examples such as the Government Integrated Data Centre, government information sharing, the nationwide business process system, e-procurement procedures, online civil services, and the *Information network village* which is dedicated to spread ICT technology and education to rural regions.

**However, there are problems and challenges that remain** as regards e-government. Prof. Lee mentioned the increasing cyber attacks, the threats to digital privacy and other problems such as digital divide (urban/rural), Internet addiction, and cyber ethics. He concluded that **increased security for e-government activities is needed**.

To conclude, Prof. Lee presented **recommendations for a successful e-government developmen**t. First of all, it's necessary to provide an efficient division of roles between the different actors (government, IT businesses, citizens). E-government services should be customer-oriented, i.e. focused on initiatives that would impact citizens' everyday lives. At each phase of e-government implementation, appropriate institutions, such as laws ensuring a positive enabling environment for e-Government, should be set up. There should be sustained investment in e-government budgets and a dedicated organisation structure should be given for e-government implementation. Finally, according to Prof. Lee, it is necessary to change management education of public officers in order to ovoid reluctance from them to e-government deployment.

In a last set of remarks, and separate presentation, Prof. Lee made reference to **u-smart cities**, like Seoul, where cloud and u-computing centres have been set up with the aim to make Seoul a green IT city.

### 2.1.2 Ubiquitous Japan

**Mr. Koji OUCHI** from the Mission of Japan to the EU, started his presentation by giving an **overview of broadband development in Japan**, as broadband infrastructure is a prerequisite for u-infrastructure. The broadband coverage has reached 100 % in Japan, the rate having increased as prices had gone down.

Mr. Ouchi detailed the Japan's actions in different areas, starting with **e-education which is part of the government strategy**. One of the examples he gave is the *Cloud supporting system* in Okinawa. This system has been introduced to support the back-office functions of schools dispersed in island remote areas. Another concrete example is the *Future school project* launched by the Ministries of education and of communication and which purpose is to provide all students with tablets.

According to Mr. Ouchi, EUR 3 billions could be saved each year by introducing **e-medicine**. In this regard, he mentioned the *Electronic health record*, a cloud platform set up in Japan where doctors, patients and pharmacists can safely share clinical records across the country.

Concerning **e-government**, the rate of current online use of public procedures in Japan (32 %) is not high enough according to Mr. Ouchi. He underlined that while **e-taxation** draws higher attentions than other services, further efforts are needed to improve both knowledge and adoption of ICT-enabled public services.

Mr. Ouchi finally presented the latest developments on ubiquitous solutions. The Japanese government has just passed a regulation ("*My Number Act*") relating to the **national identification system** that will introduce a **national ID supporting mechanism for social welfare and taxation**. Japan will also set up an independent data protection authority that would affect the discussions on adequacy mechanism of EU data protection regulation. Mr. Ouchi mentioned that Japan uses similar levies as the EU on **public sector information**. From a public point of view, Mr. Ouchi indicates that we cannot put too much emphasis on the potential of **Big Data**, as it has already been cultivated for a variety of purposes.

### 2.1.3 Canadian perspective: from government to authentication and federal identity

**Ms Catherine DICKSON** from the Mission of Canada to the EU, started her presentation by saying that **Canada has been providing e-services to its citizens since 2004** resulting from policies to provide broadband access for all citizens. She indicated that Canada continues to focus on modernizing government and improving the delivery of services to citizens and business securely and in a manner that respects their privacy. As a result, Canada is becoming a digitalised society (as an example, 89% of Canadians use credit cards online and the average Canada spends 43.5 hours per month on the internet – double the worldwide average). The internet has become a critical enabler for the Canadian economy and a major driver of change in both the public and private sectors. In 2008, Canada began to review its approach to authentication via the Cyber Authentication Renewal strategy which set out several fundamental principles such as standardizing technology components and services; allowing multiple levels of assurance to manage different levels of risk depending upon the sensitivity of the transaction and enabling multiple authentication service providers. In December of 2012, Canada successfully completed its **Federation of Credentials Phase** which has resulted in two new authentication services: the **Credential Broker Service** that enables Canadians to use their online authentication previously issued to them by their financial institutions; and, **GCKey**, for Canadians who wish to use online credentials issued by the government.

Since implementation, Canada has seen a dramatic uptake of the services and over 400,000 Canadians are using the **Credential Broker Service**, meaning they are using their bank credentials to securely access Government Services and over 1.4 million individuals are using **GCKey** to access services including non-Canadians, such as those who are applying online for immigration.

The speaker also advised that Canada is now moving to the next major phase which is **Federating Identity;** i.e. trusting identities that have been established by other jurisdictions and trusting that individuals are using their own identity information. Federating identity is crucial and work to date has concluded that in order for Canadians to maintain confidence in the digital economy, they need to know with whom they are dealing online, where identification is accomplished digitally, without paper documents or face-to-face visits, and in a way that protects sensitive information, uses an “ask me once” approach, and respects the privacy of the individual. To that end, Canada is in the process of establishing a **Digital Identification and Authentication Council (DIAC)** which will task representatives of the public and private sector to develop a modernised payments system, This next phase will incorporate a pan-Canadian approach, whereby different jurisdictions should be able to rely on one another to securely authenticate individuals online regardless of the originating jurisdiction and using trusted online credentials issued by trusted partners. Canada is also developing policy instruments to ensure consistent identity practices across federal departments and with other jurisdictions. Canada is optimistic that in the near future a citizen will be able to use their secure provincial or territorial credential — such as their provincial health card — to access federal government online services.

## 2.2. Leading examples from Member States

### 2.2.1 Ubiquitous governance in the Netherlands: "closed" governance strategy

**Mr. Henri RAUCH**, National Expert at the King Quality Institute Netherland Municipalities, explained why the **Dutch government developed a "closed cloud" strategy**, at a time when the trend is towards opening everything.

The Dutch "closed" governance strategy initiated in 2012 is a response to the fragmented IT services and to the single tenancy government services. The "closed" feature is mainly **related to information security and privacy concerns**. A lot of data is used in governance services in the Netherlands and it's been decided to exclude personal data from public cloud services. Mr. Rauch explained that government services are directed towards multi tenancy within the government community cloud of government and on reaching efficiency.

As regards the impact of u-governance, Mr. Rauch found **various positive elements from the Dutch experience**: efficiency, defragmentation, bundle demand is brought to bundle supply, better possibilities in the demand and suppliers market, radical improvement and innovation.

Then he made a **mapping of ubiquity elements in Dutch governance**. First the basic facilities (Registries) are generic services to be used by any of the Dutch government services. Then new services appear: alerts for citizens (sms messaging), Government Appstore, etc. Ubiquity doesn't cover all of the generic services. The tax agency is working on a replacement for multiplatform collaboration and Customs on onsite inspections. Finally, Mr. Rauch indicated important further developments are expected from mobile operators.

### 2.2.2 Estonia's experience

**Mr. Silver TAMMIK** from the Permanent Representation of Estonia to the EU focused his presentation on the **Estonian Information System**.

He started describing the state of play of the use of e-services, and mentioned that there is a **widespread use of e-services in Estonia**. He gave different examples of good practices, such as the **e-tax board** (95 % of tax declarations are submitted electronically), the **i-voting** (five votes have been organised in Estonia since 2005 on the basis of national e-ID card, and 25% of the population vote electronically). The e-business register enables 98.2% of companies to establish electronically. He gave additional examples in diverse areas, such as annual reporting for companies, financial transactions (99% carried out online), prescriptions (95% of all prescription done online), e-school (95% higher secondary students use e-School), and fishing permits.

Then Mr. Tammik pointed out the **main challenges the government faced**, that is, how to find out the way to **secure identification and data exchange of information.** The government responded by creating the **e-ID**, a national chip-based identity card, and the **"X-Road", the State Information System**. Among the different option they considered for developing the "X-Road", the multilateral solution was found to be the most cost-effective. Estonia set up a one-stop-shop giving citizen one single gateway onto the government with direct access to the relevant service via internet, removing the official who stands between the citizen and the relevant public service. The "X-Road" was launched in Estonia in 2002 and currently more than 50 % of the citizens use it via a citizen portal and 1.000.000 transactions are made each day. The X-Road connects public and private sectors and allows exchange of information between any database, public or private. The access is done through one single portal. Mr. Tammik pointed out that "X-Road" is not only technology; it also includes organisational and regulatory aspects.

As regards the **next steps to be taken**, the question of how to accept e-ID from third countries and whether to provide it to non-residents has been raised. X-Road should be simplified and cross-border. The use of gateways, such as www.eesti.ee, as well as the interoperability framework and the availability of digital information should be improved. Services should focus on integrated solutions and quality, and there should be a constant monitoring and piloting of new solutions and services (e-ambulance).

As final considerations, Mr. Tammik highlighted the **need to change governance and drop the procedures**. E-services should not be a copy of paper-world procedures. Users' attitude is also important, as people need to be willing to digitalise. Government needs to think globally, and encompass at least nation-wide. He also reminded the important role of the private sector. Finally, Mr. Tammik underlined that political commitments are essential to e-business, as it is not only technology, but also organization and regulation.

### 2.2.3 UK's G-cloud project

**Ms Nicola WESTMORE**, Deputy Programme Director of the G-Cloud project, talked about the UK's G-Cloud project.

She first explained that the programme was created due to a **hugely challenging environment in the UK**. Austerity and cuts in the spending budgets led to outsourcing a lot in the IT area, the public sector relying mostly on large companies (80% of Central Government ICT is controlled by 6 companies). In addition, multiple organisations carried

out the same activity and were not focussing on their core business. Finally, there was a lack of competition.

The main aim of the G-Cloud project is to **encourage the adoption of cloud-based services across the public sector**. G-Cloud covers the processes of buying, managing and using cloud services providing tools for it. Its vision required a behavioural and cultural change in the UK. The G-Cloud programme changed the market for public sector IT, creating an open and competitive market place and giving access to a much wider choice. The simplification of the public procurement process made the system easier for suppliers, levelling the playing field for SMEs. Ms. Westmore indicated the benefits of the G-Cloud: it's easy to buy, transparency is improved, significant savings have been made (up to 90% according to the speaker) and the system is agile and responsive, giving ability to meet changing users' needs.

Ms Westmore listed the next steps to be taken: respond to feedback from buyers and suppliers, set clear policies, improve guidance, identify potential gaps, make the market work optimally, get more creative solutions, shorten the adoption cycle, enhance the cloud computing across the UK and address skills gaps across the government.

As a concluding remark, Ms Westmore said that the programme had created opportunities for growth, and that evidence showed the positive impacts on employment, especially for SMEs.

## *Questions and answers*

**1) Which of public services could be singled out as the most important to pursue through ubiquitous solutions?** (question asked to all the speakers)

National Health Service and "e-medicine" was mentioned (by the Representatives of the Canada, UK, Japan), as well as ubiquitous or smart way of addressing integrity of e-government (Seoul), e-tax declaration (Estonia) and e-education (Italy).

**2) How important is security for the Estonian information system?**

Mr. Tammik indicated that no relevant incident has been deplored for more than 10 years. The 2007 incidents event didn't touch the X-Road and was mainly focused on the private sector.

**3) What, in your experience, is coming first: infrastructure or services?** (question asked to all members of the panel)

Mr. Ouchi answered that broadband application comes first before development of e-government. Ms Dickson concurred, in that due to the huge size of her country, e-services came second after the broadband infrastructure.

# 3. DEVELOPING UBIQUITOUS MARKETS - ROUNDTABLE

## 3.1. Developing private and public ubiquitous solutions

**Mr. Mark LANGE** from Microsoft recalled the mission statement of Microsoft in 1975: "A computer on every desk and in every home". Nowadays computing is everywhere, in transportation, communication, entertainment, utilities, and becomes invisible.

Mr. Lange said that the web makes the information available everywhere and by everyone and that cloud (ubiquitous) computing power is to make computing power available to everyone. It **makes it possible to develop public and private solutions in different areas and on large scales**. Mr. Lange gave three examples in order to illustrate his point. First, cloud computing allows the **sharing and reuse of public data**. For example, *Eye-On-Earth* has been jointly developed the European Environment Agency and Microsoft in order to share the data collected for years by the public agency interactive map-based visualisations of environmental public data. They benefit from lower costs in maintaining computer facilities and processing data and from an increased capacity and ability to use data. The second example is to **accelerate start-up creation** thanks to inexpensive and easy access to super computing power. Microsoft set up a programme that gives 16.000 start-ups access to super computing powers, accelerate research and cross-border business. The third example, still in research phase, is related to **advance machine translation**. It helps to process machine translation more quickly and tackle "Big data", speech recognition and synthesis and machine learning.

As a concluding remark, Mr. Lange said that we'll see the acceleration of business and it will help us to achieve the Digital Single Market.

## 3.2. Ubiquitous business solutions

**Mr. Sameer VERMA** from SAP focused his presentation on B2B and explained how ubiquitous solutions could enable businesses to do business together.

The speaker referred to connectivity, Big Data, cloud computing and social media as the four technology mega-trends and pointed out the importance of social media, especially for consumer products.

Then, Mr. Verma described the **ubiquitous business solutions: the cloud, Big data, machine-to machine/internet of things and enterprise mobility.** The cloud offers very viable option for SMEs to drive their business growth strategy. Concerning Big Data, it is cost-efficient and able to capture, analyse, and apply all the data in real time. Businesses are able to work better, but a mechanism is needed to use and apply it. Machine to machine/internet of things (e.g. smart cities) is solving an array of the industry needs. But infrastructure is needed to manage to handle the data. As regards enterprise mobility, Mr. Verma said that it's empowering the enterprise and the individuals.

Finally, Mr. Verma made some **recommendations to EU policy makers**. According to him, they should address the ICT skills gap, make available the infrastructure as broadband still doesn't cover all the territory, harmonise data protection regulation, promote public sector uptake, and should foster ICT and R&D clusters. As a final remark he stated that the EU still doesn't have its "Silicon Valley".

## 3.3. Ubiquitous services for consumers

**Mr. Jakob KUCHARCZYK** from the Computer and Communications Industry Association (CCIA), introduced his subject saying that the **Internet offers an incredible amount of new opportunities for innovation and economic growth**. He stressed that the economic growth generated by internet does not primarily come from Internet companies, but from Internet-using businesses and consumers.

He then gave two examples of internet enabled economic activities. Starting with **ubiquitous trade,** the speaker noted that there is no need anymore to be a large company to perform international trade. According to the study, commerce has an evolving nature: it becomes technology enabled, consumer-driven and distance matters less. Mr. Kucharczyk indicated that 94 % of the smallest 10 % of commercial sellers export and that 81 % of them sell to 5 or more foreign countries[1]. The second example related to **ubiquitous entertainment.** A study by CCIA, analysing the economic state of the entertainment industry in six European countries, shows that the growth in the entertainment industry is driven by internet. The e-book market is exploding, games (driven by games on social network) and music sales are increasing, as well as video but to a lesser extent.

According to Mr. Kucharczyk, beyond ubiquity in trade and entertainment there are **infinite possibilities in regards to online opportunities and innovation**. He mentioned as examples the talent and job pages posted on social networks, the online accountancy tools for micro businesses, the MOOCs (Massive Open Online Courses), the move towards the 'sharing economy' (cars, cabs, apartments, etc.) and the specialised online market places for homemade goods (Etsy).

In his closing **policy recommendations,** Mr. Kucharczyk called for strong net neutrality rules that would "allow innovation without permission", for legal and operational certainty for online businesses, and for a harmonised integrated market.

[1] Study commissioned by eBay
http://www.ebaymainstreet.com/sites/default/files/EBAY_Marketplace_Updated_FIN_lowres.pdf

# 4. A VIEW FROM THE EUROPEAN COMMISSION ON UBIQUITOUS MARKETS AND GOVERNANCE

## Developing ubiquitous governance and markets on European Level

**Mr. Jörgen GREN**, who coordinates the digital agenda at the European Commission, presented elements that represent the ubiquitous markets and governance.

His first remark pointed out that the previous speakers didn't mentioned two key words which are very important in the EU context: interoperability and cross-border.

Mr. Gren focused on four of the **areas on which the Commission is working**: European cloud computing strategy, e-government, e-health and the open agenda.

**The European cloud computing strategy** adopted in September 2012, aims at reducing ICT and energy costs, increasing competitiveness of SMEs and creating new jobs. This strategy includes three main actions: 1) cutting through the jungle of standards; 2) safe and fair contract terms and conditions; 3) European cloud partnership for public sector leading to the creation of an EU cloud industry.

As regards the **digital services infrastructure**, he mentioned that the Commission proposed to provide EUR 9.2 billion for investment in the EU but the Council reduced this item to EUR 1 billion. The EC is preparing a new proposal, and propose to focus on digital services including a small part for broadband and financial instruments. Mr Gren also mentioned that the Commission is preparing a new large scale **pilot programme "e-sense"**.

The action plan on **e-health** aims at clarifying legal uncertainty, at improving interoperability between systems, at increasing awareness and skills and at putting patients at the centre of the initiative.

Regarding the **open data policy**, the Commission wants to expand the reach to museums, archives and education and **create a genuine reuse of public information** and to have marginal cost charging. He added that public sector bodies should be obliged to be more transparent about information.

He ended with mentioning that the Council had asked the Commission for a digital Single Market report, to be released in October, and for a Digital Single Market blueprint in ICT.

## *Questions & Answers*

**1) Nowadays, data is accessible but mobile connectivity and access is still quite poor in Europe: what can be done? What about consumer protection and health risks related to mobile phones?**

Prof. Lee noted that if mobile phone's speed improves, much more application will be created, and more data will be transferred. Mr. Marcus pointed out that different research results show that 80% of the global data from smart phones doesn't go on the global network but on private wifi.

**2) Why is the Commission so focused on the cross border issue within Member States, when cross border is irrelevant in the context of the cloud?**

Mr. Gren said that online cross border trade in the Single Market is not high and the objective of 20 % of EU people buying online and cross border hasn't been reached yet. He insisted on the fact that the cross border aspect is still important giving the example of the copyright issue: buying a CD via Amazon is possible but downloading the same music is impossible from another country. Various barriers (political, linguistic, etc.) unfortunately are still there, and care needs to be taken not to re-raise those that have been painstakingly abolished in the physical market.

**3) How SAP technology is used for tracking of products in the supply chain management? Could this tool be useful for administration (especially to Customs, VAT, product surveillance services), and could it facilitate cooperation?** (question asked to the representative of SAP)

Customers use solutions like "track and trace" in the life cycle of the supply chain, for example in transportation or logistic networks. But SAP doesn't collect the data. Customers who buy the product and use it in the supply chain can transmit it to the relevant authority but SAP has no specific solution to put all the data together and send it to the financial authorities.

## *Closing remarks*

Mr. Marcus referred to the SWAT analysis (**S**trengths, **W**eaknesses, **A**dvantages, **T**hreats) to conclude the workshop. Concerning the strengths, he noted an increasing speed and capability, reduced costs and willingness of the governments to do innovative things. As regards weaknesses, he pointed out inertia, the need for process change and the agency unwillingness to take these opportunities. On the advantages side, Mr. Marcus indicated the reduced cost for consumers, the increased government transparency and citizen empowerment. And lastly, the threats: he mentioned privacy and security and wondered about the precise role of EU policymaking (facilitating, avoiding duplication, setting standards, or?).

# ANNEX 1: PROGRAMME

PARLAMENTO EUROPEO EVROPSKÝ PARLAMENT EUROPA-PARLAMENTET
EUROPÄISCHES PARLAMENT EUROOPA PARLAMENT ΕΥΡΩΠΑΪΚΟ ΚΟΙΝΟΒΟΥΛΙΟ EUROPEAN PARLIAMENT
PARLEMENT EUROPÉEN PARLAMENTO EUROPEO EIROPAS PARLAMENTS
EUROPOS PARLAMENTAS EURÓPAI PARLAMENT IL-PARLAMENT EWROPEW EUROPEES PARLEMENT
PARLAMENT EUROPEJSKI PARLAMENTO EUROPEU EURÓPSKY PARLAMENT
EVROPSKI PARLAMENT EUROOPAN PARLAMENTTI EUROPAPARLAMENTET

# WORKSHOP

# UBIQUITOUS DIGITAL SINGLE MARKET

Organised by Policy Department A
Monday 13 May 2013 - 15:00 - 18:30

**Venue: European Parliament, Brussels**
**Altiero Spinelli building, ASP 1E-2**

**The event is open to the public. Interpretation will be provided in EN-FR-DE-ES**

15.00 - 15.05 **Welcome and introduction (Mr Scott Marcus, WIK)**

## Part 1. Introduction

15.05 - 15.20 **Introduction to the concept of ubiquity in computing, governance and market services**

Prof. Giovanni SARTOR, EUI

## Part 2. Ubiquitous governance

## Leading jurisdictions outside the EU

15.20 - 15.35 **South Korea - Open E-governance**

Prof. Yong Woo LEE, University of Seoul

15.35 - 15.50 **Ubiquitous Japan**

Mr Koji OUCHI, Mission of Japan to the EU

15.50 - 16.00 **Canadian perspective**

Ms Catherine DICKSON, Mission of Canada to the EU

## Leading examples from Member States

16.00 - 16.15 **Estonia's experience**

Mr Silver TAMMIK, Permanent Representation of Estonia to the EU

16.15 - 16.30 **UK's G-cloud project**

Nicola WESTMORE, Deputy Programme Director - G-Cloud

16.30 - 16.45 **Ubiquitous governance in the Netherlands**

Mr Henri RAUCH, Kwaliteits Instituut Nederlandse Gemeenten

16.45 - 17.05 **Q&A**

## Part 3. Developing ubiquitous markets - roundtable

17.05- 17.20 **Developing private and public ubiquitous solutions** Mr Mark LANGE (Microsoft)

17.20 - 17.35 **Ubiquitous business solutions**

Mr Sameer VERMA (SAP)

17.35 - 17.50 **Ubiquitous services for consumers**

Mr Jakob KUCHARCZYK (CCIA)

## Part 4. A view from the European Commission on ubiquitous markets and governance

17.50 - 18.05 **Developing ubiquitous governance and markets on European level**

Mr Jörgen GREN (European Commission)

18.05 - 18.25 **Q&A, Open discussion**

18.25 - 18.30 **Closing remarks**

# ANNEX 2: SHORT BIOGRAPHIES OF THE EXPERTS

## Prof. Giovanni Sartor

Giovanni Sartor is part-time professor in legal informatics at the University of Bologna and part-time professor in Legal informatics and Legal Theory at the European University Institute of Florence. He obtained a PhD at the European University Institute (Florence), worked at the Court of Justice of the European Union (Luxembourg), was a researcher at the Italian National Council of Research (ITTIG, Florence), held the chair in Jurisprudence at Queen's University of Belfast, and was Marie-Curie professor at the European University of Florence. He has been President of the International Association for Artificial Intelligence and Law. He has published widely in legal philosophy, computational logic, legislation technique, and computer law.

## Prof. Yong Woo Lee

**Yong-woo Lee** has been a professor at the school of ECE, the University of Seoul, Korea since 1999. He received his Ph.D. degree in Computer Science from the Dept. of Computer Science at the University of Edinburgh, United Kingdom with financial support by the British Foreign Ministry and Korean Government and B.S. degree in Electrical Engineering from Seoul National University, Korea, respectively. Before joining the University of Seoul, he was a senior research scientist at KIST (Korea Institute of Science and Technology) under the Ministry of Science and Technology, Korea, during 1982-1998. In KIST, he received the best research scientist award twice, that is, in 1988 and 1989 respectively. He also worked as a principal researcher at KERIS (Korea Education and Research Information Service) under the Ministry of Education, Korea, during 1998-1999 and as an international engineer at Schlumberger Technical Services Inc. during 1981. Currently he is the president of the Korean National Standard Committee for ISO JTC1/SC22, supported by the Ministry of Knowledge Economy, Korea. He is also the Vice-President of KSII (Korean Society of Internet Information). He was the Chairman of the Academic Activity Board of Directors and a Vice President at KSII (Korean Society of Internet Information). He is one of the founders of KSII. He was the president of the Institute of Information Technology in the University of Seoul from 2005 to 2007 and, as the Chair, has been in charge of Seoul Grid Center since 2003. He has been the member of Board of Chairs for Grid computing in Korea since 2002. He served many international conferences as the General Chair. As the President of the Ubiquitous (Smart) City Consortium which includes SK Telecom, LG-CNS, etc. as industry members and Seoul National University, Korea University, Yonsei University, etc. as academic members, he has been leading the U-city project with five million U.S. dollars funded and operated by Seoul Metropolitan Government of Korea, since 2005 and receive the Korea Best Award, from the “Korea Herald” Newspaper, a famous daily newspaper in Korea in 2007. He was a Member of the Program Committee and a panelist at the First IEEE International Conference on Cloud Computing (CLOUD-I 2009) jointly held with ICWS/Service Computing at L.A. U.S.A. in July 6-10, 2009, the Chair of the Panel Committee, a Member of the program committee and a panelist at the Second IEEE International Conference on Cloud Computing (CLOUD-II 2009) jointly held with ICWS/Service Computing at Bangalore, India during September 21-25, 2009 and the Member of Program Committee at the Third IEEE International Conference on Cloud Computing jointly held with ICWS/Service Computing at Miami, U.S.A. in July 5-10, 2010. He is also a CLOUD COMPUTING Advisory Chair and a member of CLOUD COMPUTING Technical Program Committee at the First, Second, Third and Fourth International

Conference on Cloud Computing, GRIDs, and Virtualization (CLOUD COMPUTING 2010, 2011, 2012 and 2013) which were held in Lisbon, Rome and Nice and will be held in Balencia respectfully. He is a Member of Board of Directors at the Korea-British Alumni Association and a life-time Member of Board of Directors at the Alumni Association of Seoul National University. His current research interests include ubiquitous computing, cloud computing, grid computing, system software, high speed Internet, convergence between information technology and other areas such as E(U)-education, E(U)-government, E(U)-business , U-City (Smart City), E(U)-health/medicine, etc.

## Koji Ouchi

Koji Ouchi is the First Secretary of the Mission of Japan to the European Union. He was born and raised in Ehime Prefecture (South Western part of Japan). He studied at Harvard's John F. Kennedy School of Government (MPP, 2006). He joined the Ministry of Internal Affairs and Communications in 2001 and worked at four divisions for the telecom/audiovisual regulations and the international cooperation before joining the Ministry of Foreign Affairs in 2012.

## Catherine Dickson

Catherine Dickson is Counsellor and Head of the Trade, Economic and Innovation Policy Section in the Mission of Canada to the European Union. In that capacity, she is responsible for a wide variety of trade policy files including market access issues, NTBs, regulatory co-operation, certification, energy, science and technology to name a few. She also leads the Mission's work on the ongoing negotiation of the Canada-EU Comprehensive and Economic Trade Agreement.

Prior to her arrival in Brussels, Ms. Dickson was Counsellor (Trade, Investment, Science and Technology) at the High Commission of Canada in London. In that role, she managed a team of officers working to enhance Canadian exports in the advanced manufacturing sectors, promote foreign direct investment and S&T partnerships in Canada. Prior to arriving in London, she was Director of the Intellectual Property, Information and Technology Trade Policy Division in Ottawa. In that capacity, she was Canada's Lead Negotiator for intellectual property at the World Trade Organization TRIPS Council in Geneva and at the Free Trade Agreement of the Americas (FTAA). Her work included negotiation of a new WTO Agreement on Patents and Access to Medicines, copyright, trademark and geographical indications. She also developed Canada's international negotiating strategies for cultural industries (including for a new cultural diversity agreement at UNESCO), telecommunications services and electronic commerce.

Ms. Dickson has had two other diplomatic assignments - as Commercial Counsellor in Norway and Iceland and as Senior Trade Representative in Ontario's trade and investment office in Chicago, Illinois. She has also served as the Deputy Chief Negotiator for the Canada and European Free Trade Association (EFTA) trade negotiation, as Chair of the FTAA Working Group for Electronic Commerce and as textile and clothing policy negotiator for the North American Free Trade Agreement (NAFTA). She also held positions with the Ontario Ministry of Industry Trade and Technology in Toronto, at the World Trade Center Toronto and with the South Korean Trade Promotion Office in Toronto.

Ms. Dickson has an extensive background in promoting trade, foreign direct investment, science and technology and in trade and economic policy and negotiations.

## Silver Tammik

Silver Tammik has been working for the Estonian Ministry of Economic Affairs for almost 10 years. He has been responsible for the strategic and budgetary planning processes and has also been actively involved in the development of national strategies for different sectors. From 2006 he has acted as a counsellor for telecommunications and information society in the Permanent Representation of Estonia to the EU.

## Nicola Westmore

Nicola Westmore has had a varied career in the UK Government in strategic policy development across both central government and its agencies. She joined The G-Cloud Programme in July 2011 focussing on shaping government's approach on cloud computing and is currently the deputy Programme Director. She has particular interest and expertise in the area of information rights. As champion for data protection across government from 2007 to 2009, Nicola lead a team in the Ministry of Justice, shaping the UK's policy in this area. During her tenure, Nicola oversaw changes to primary and secondary legislation to increase the powers and penalties available to the Information Commissioner's Office.

## Henri Rauch

Henri Rauch is a senior Strategist at the Association of Dutch Municipalities, more precisely its Quality Institute KING. He developed the KING's long term strategy. From 2010 until 2012 he was active as a Programme Manager at the Dutch Ministry of Interior, designing The Netherlands iStrategy(Link) and the Government Cloud Strategy.

Before that Henri was active as a Principal Consultant at Capgemini Consulting (2006 – 2010) developing the EU Account of Capgemini Global and coordinating Capgemini's actions towards the European Commission. In this period as well as in the period before at LogicaCMG (1996 – 2005) Henri developed several national e-Government programs for Dutch government, as well in the e_Authentication range as for eGovernment for businesses.

Before that (1989 – 1996) Henri worked as an Entrepreneur at Rauch Impuls, commencing as an unspecific consulting business and developing into a logistic consultancy. Pioneer in the concept of European Distribution Centre: a way to create an operational distribution Centre within 11 months in the Netherlands "gateway to Europe". Leader of a consortium of 7 companies that worked together to make this possible.

Henri is a Mathematical Engineer form the Delft Technical University (1984).

Henri is enrolled as National Expert for the European Commission and involved as an evaluator to the European Commission for the Framework 7 Program.

## Mark Lange

Mark Lange is Director, EU Institutional Relations, in the Microsoft Legal and Corporate Affairs department in Brussels. He has been based in Microsoft's European offices in Paris and Brussels since 1998. Mark's roles in Europe and EMEA have focused on regulatory affairs and business strategies with respect to cloud computing, standards, intellectual property, and international trade.

Prior to joining Microsoft, Mark worked for the law firm of Covington & Burling in its Washington, D.C. and Brussels offices from 1989 to 1998. He graduated from the University of Virginia in 1981, and from Northwestern University Law School in 1989.

Mark became a French citizen in 2010.

Mark's current work on cloud computing focuses on the policy framework and business services that will enable Europe to capture the economic benefits of this technology evolution in a digital single market.

## Sameer Verma

Sameer Verma works as the Vice President in SAP's Corporate Strategy Group. In his role he enables the definition of SAP's strategy and transformation and helps execute all aspects of strategy and transformation to help SAP and its customer's run better like never before. The group reports to the Office of the Co-CEO's.

Sameer has over 14 years of experience in the software industry, majority of which has been with SAP. Before taking a role in the Corporate Strategy Group, Sameer was driving the execution of the Strategic Investments in development area of SAP's Business Suite, prior to that he served as the executive director and customer officer of SAP Business Suite. He has held several key roles in the product development areas of SAP including some of the key strategic developments for our key customers.

Sameer has a degree in Industrial Engineering and Management from India. He has served as an active member of the Operations Research Society of India

## Jakob Kucharczyk

Jakob Kucharczyk joined the Computer and Communications Industry Association (CCIA) in June 2010. In his capacity as Director, CCIA Europe, he is responsible for closely monitoring and evaluating policy developments at European Union level in the association's Brussels office. He is also involved in the formulation of CCIA's policy positions in the EU.

Before joining the CCIA, he completed a traineeship at the European Commission in DG Enterprise and Industry. Working for the Automotive Unit, he was actively involved in the preparation of new legislative proposals and the corresponding impact assessments. Furthermore, he was dealing with EU regional funds during two internships at the Saxon State Ministry of Economic Affairs and Labour and the Polish Ministry of Regional Development in Warsaw where he was responsible for the implementation of EU cross-border regional initiatives.

Mr. Kucharczyk received his BA degree in European Studies from Maastricht University where he graduated cum laude. He also holds two LLM degrees in European law from Maastricht University where he graduated cum laude and from the University of Edinburgh. During both LLM studies Mr. Kucharczyk extensively focused on EU competition and internal market law.

A native German speaker, Mr. Kucharczyk is also fluent in English as well as Polish and has a basic knowledge of French and Spanish.

## Jörgen Gren

Jörgen Gren, a Swedish national, is currently the head of unit for F1 – Growth & Jobs – Digital Agenda for Europe Coordination and Digital Single Market Policy Unit – in DG CONNECT.

He recently worked in DG INFSO, as deputy head of unit, with negotiating the financial framework for the Connecting Europe Facility on broadband and digital services as well as coordination of impact assessments.

Jörgen Gren served as head of the media unit (porte parole) for the 2009 Swedish presidency. Directly prior to the Swedish presidency, he was a member of the cabinet of Ms Hübner, Polish commissioner for regional policy (2007-2009).

His career in the Commission started in 1996 and he has held administrator posts in DG TREN (air transport regulation) and DG REGIO (Evaluation officer, responsible for structural policy operations in France, Estonia, Ireland and parts of Finland).

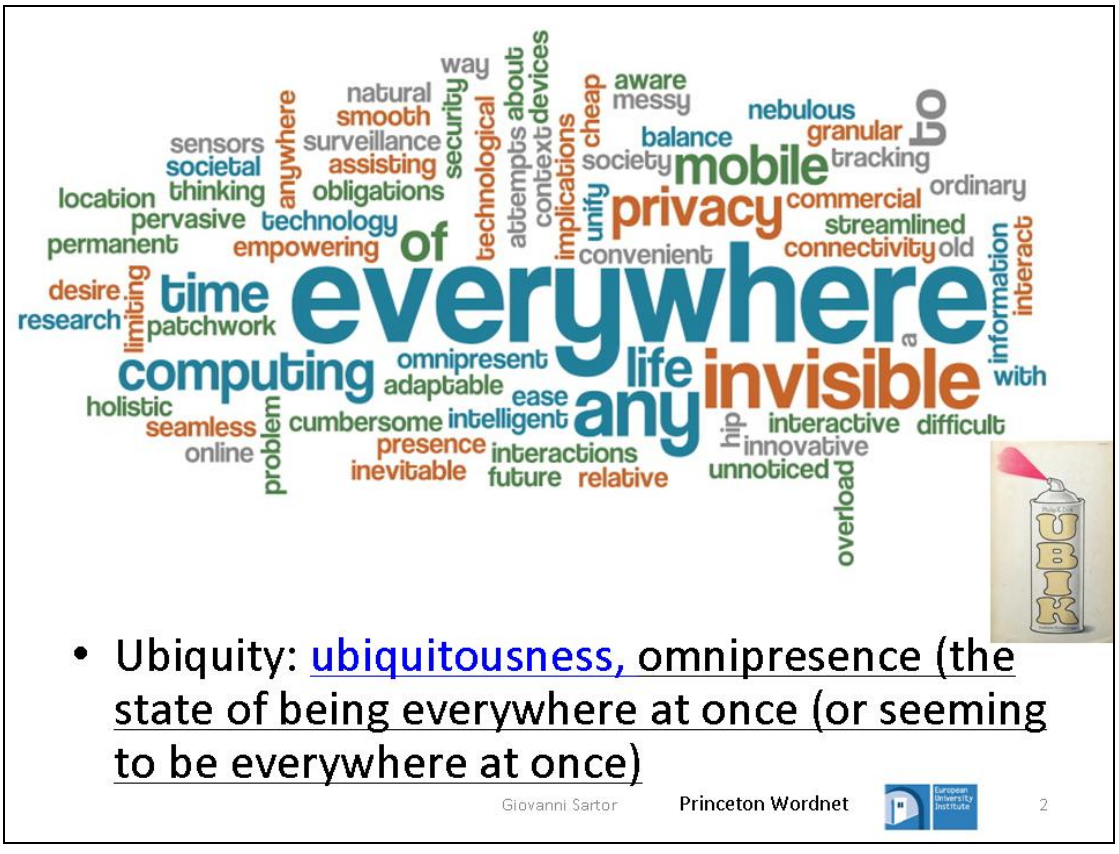
Jörgen started his career in the private sector working as a systems programmer for IBM in Sweden and, later, as head of European Affairs in Kreab-Gavin Anderson, an international consultancy based in Brussels.

He was educated in France (MA, institut d'études politiques) and in the UK at Queens' college, Cambridge (M.Phil, PhD).

In his free time, Jörgen lectures at the University of Sorbonne, Paris on economic development issues and Cost-Benefit Analysis methodology.

# ANNEX 3: PRESENTATIONS OF THE EXPERTS

## Presentation by Giovanni SARTOR

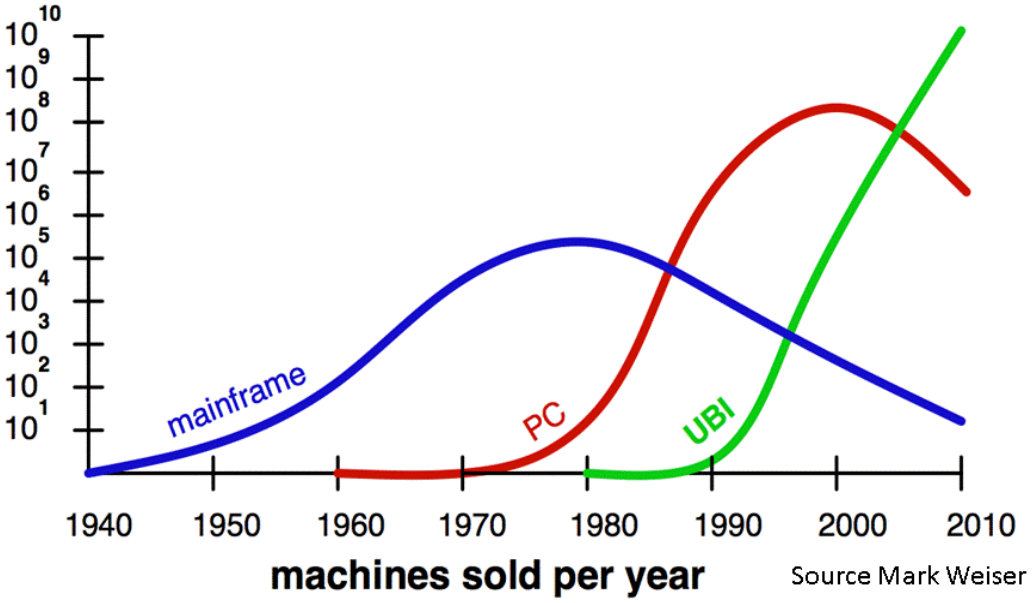

- Service: The labour [that] does not fix or realize itself in any permanent subject; or vendible commodity, which endures after that labour is past, and for which an equal quantity of labour could afterwards be procured.

(Adam Smith)

Giovanni Sartor



3

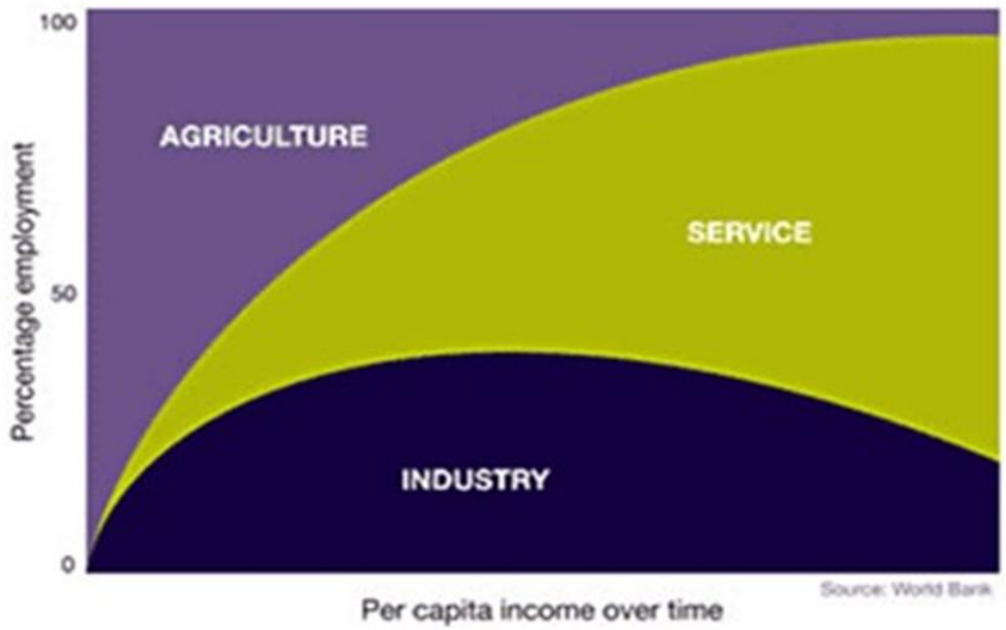



Source Mark Weiser

Giovanni Sartor



4




The growth of the service economy

Giovanni Sartor 5

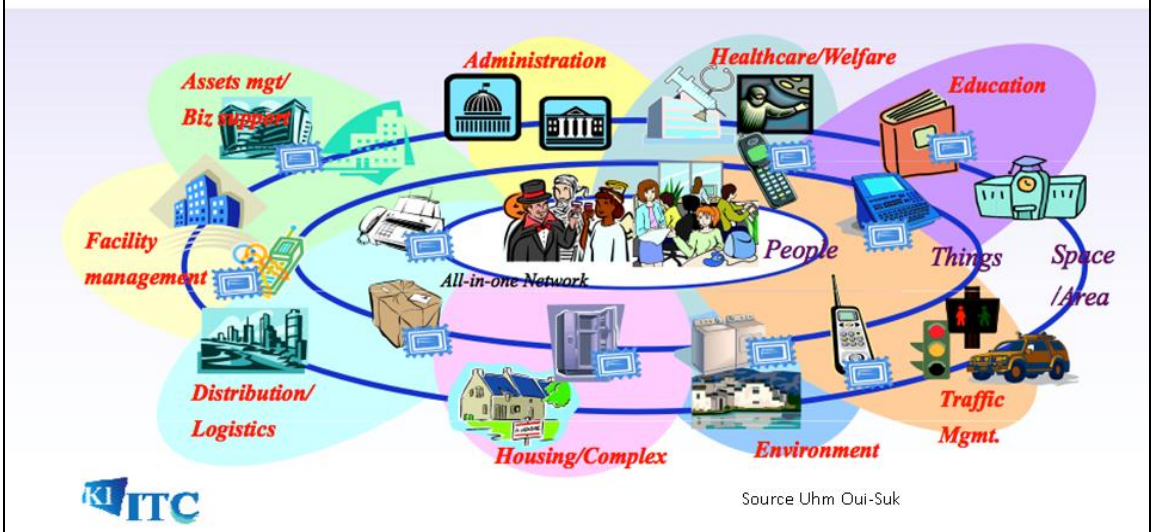
- From geography to fluxes

(M. Castells, The Rise of the Network Society)

- From ownership to access

(J. Rifkin, The age of access)

Giovanni Sartor 6

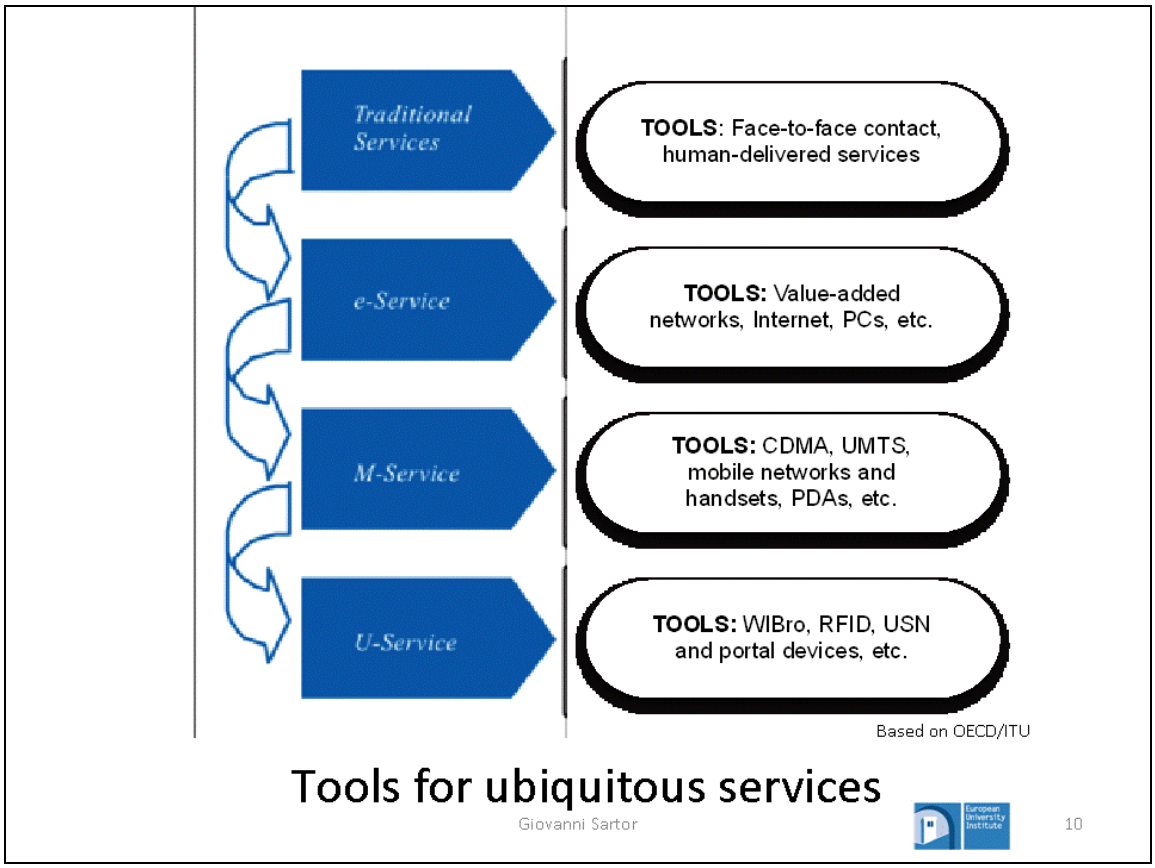


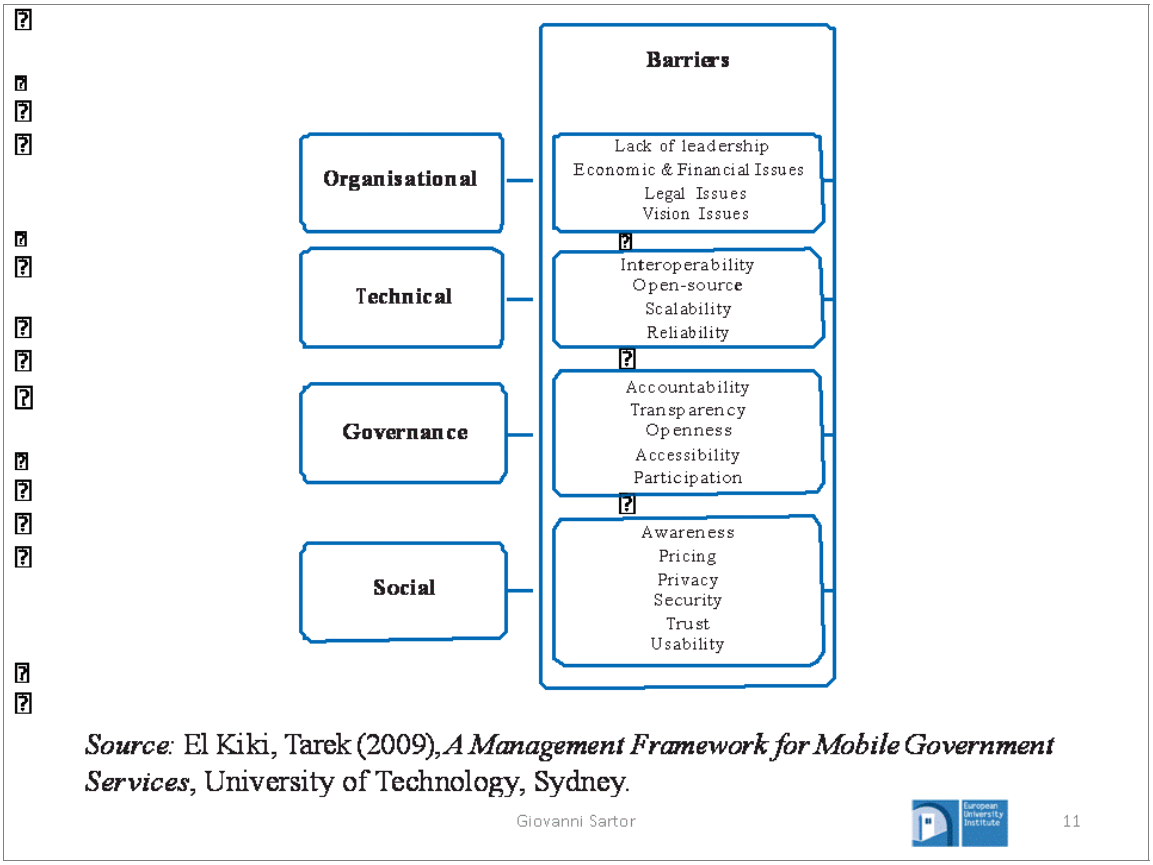

Ubiquitous government: e-government anywhere which reflects new forms of interaction and transaction that are possible and at any time on various devices, due to the pervasive availability of networks, applications and services. (ITU)




u-commerce (commerce everywhere): the use of ubiquitous networks to support personalized and uninterrupted communications and transactions between a firm and its various stakeholders to provide a level of value over, above, and beyond traditional commerce (R.T. Watts)

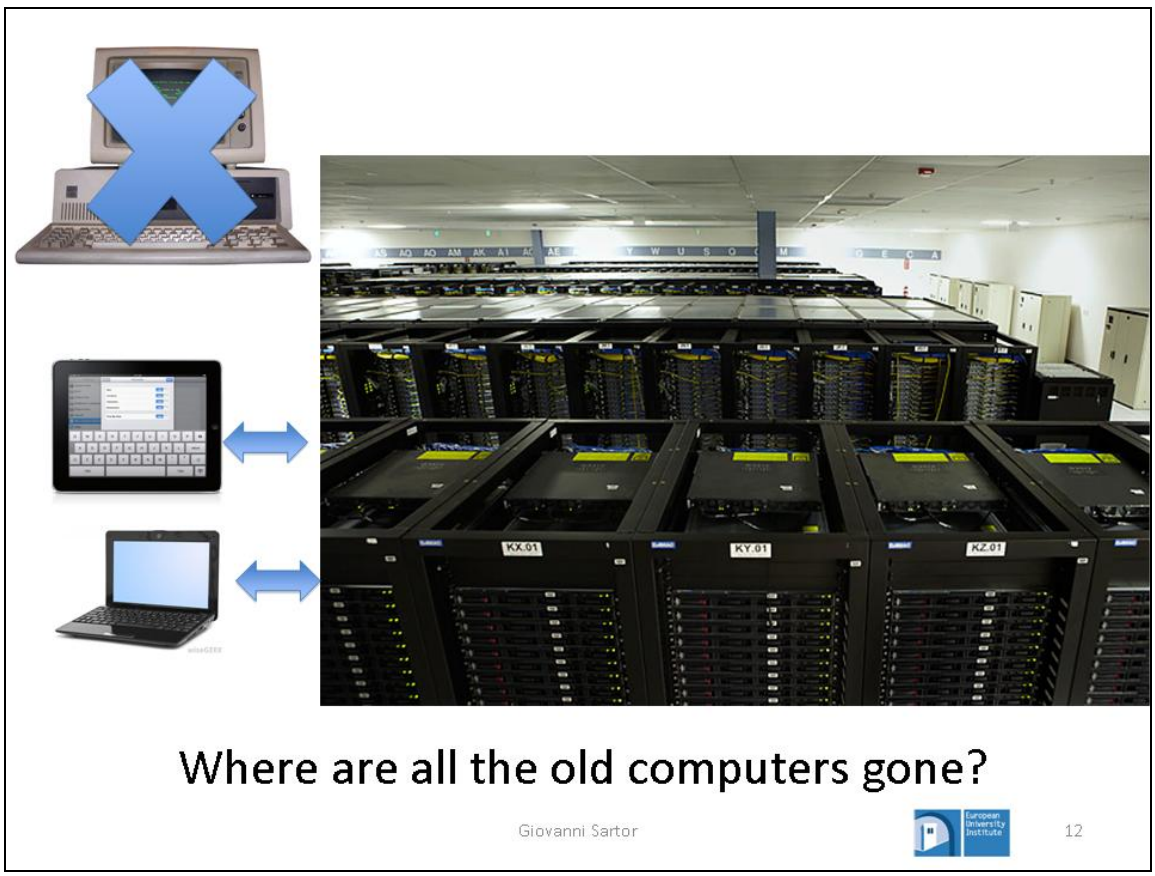

WIKIPEDIA
The Free Encyclopedia
EUDO Café
Discussing ideas
At the European Union Democracy Observatory
Daily Democracy
Debating Democracy
Linux
Blogosphere
Social networks
On-line repositories
europeana
think culture
No profit u-services? Peer production? U-cooperation? U-commons? U-democracy?
Giovanni Sartor
9


Traditional Services
e-Service
M-Service
U-Service
TOOLS: Face-to-face contact, human-delivered services
TOOLS: Value-added networks, Internet, PCs, etc.
TOOLS: CDMA, UMTS, mobile networks and handsets, PDAs, etc.
TOOLS: WIBro, RFID, USN and portal devices, etc.
Based on OECD/ITU
Tools for ubiquitous services
Giovanni Sartor
10



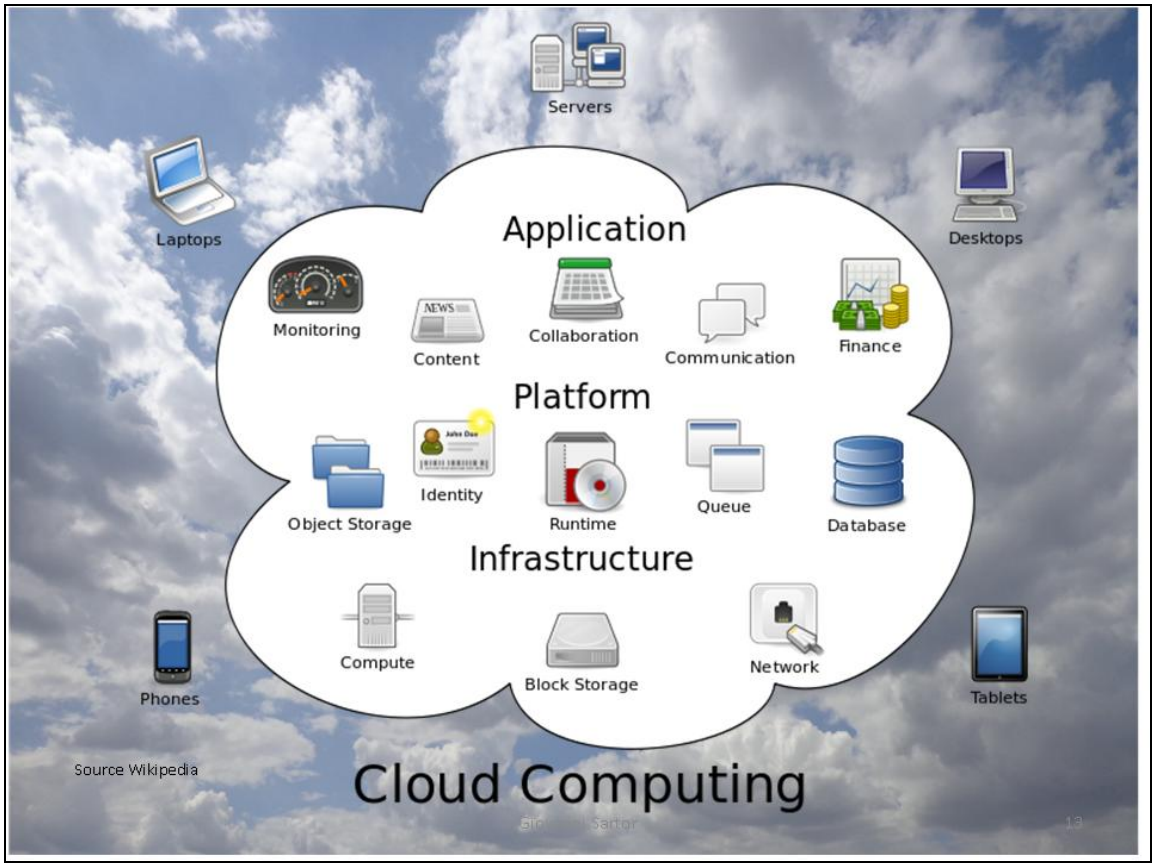

*Source*: El Kiki, Tarek (2009), *A Management Framework for Mobile Government Services*, University of Technology, Sydney.

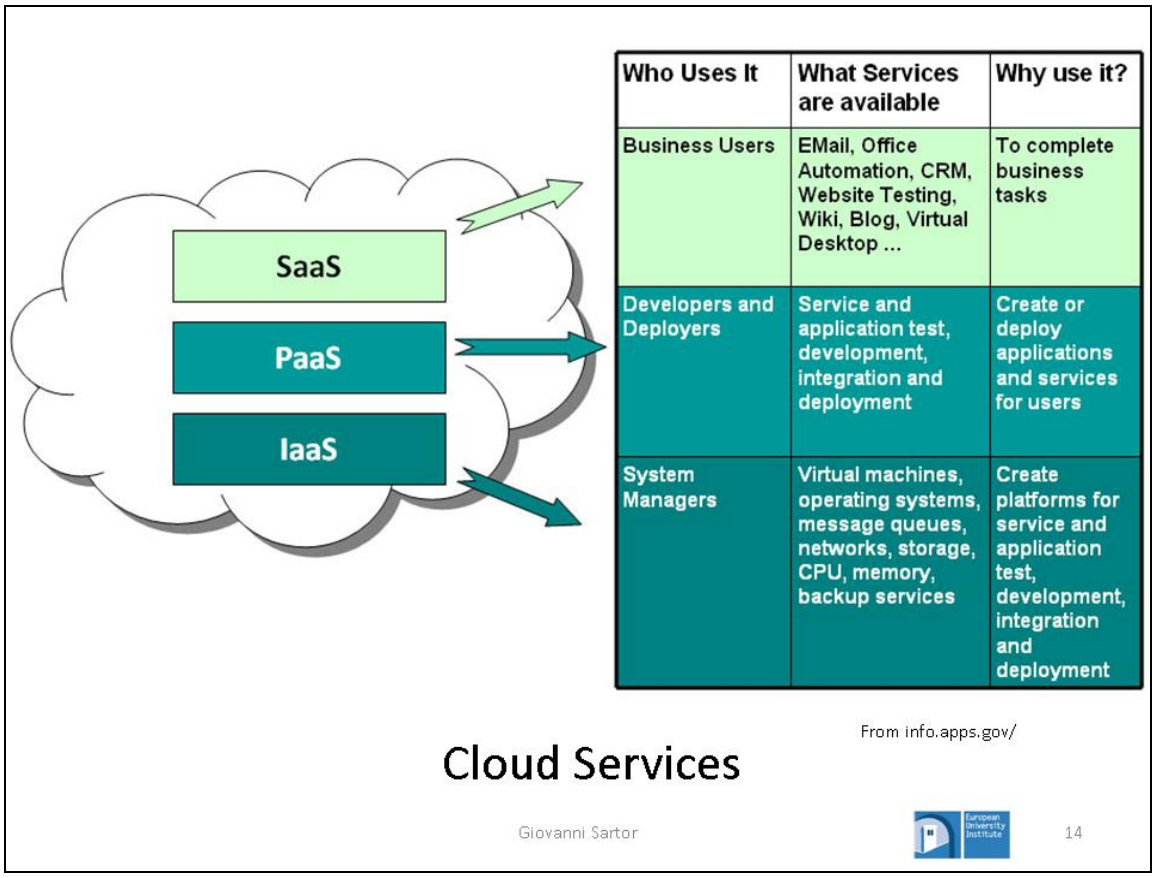
Giovanni Sartor 11

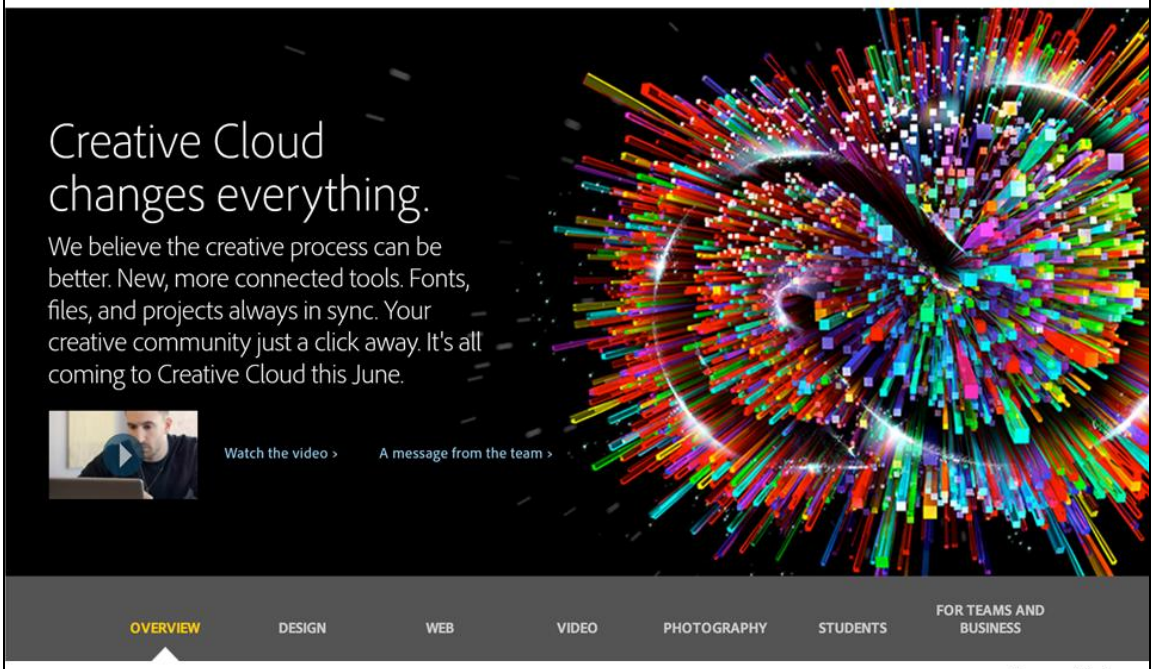



Where are all the old computers gone?

Giovanni Sartor 12


Servers
Laptops
Desktops
Application
Monitoring
Content
Collaboration
Communication
Finance
Platform
Identity
Object Storage
Runtime
Queue
Database
Infrastructure
Compute
Block Storage
Network
Phones
Tablets
Source Wikipedia
Cloud Computing


SaaS
PaaS
IaaS
Who Uses It
What Services are available
Why use it?
Business Users
EMail, Office Automation, CRM, Website Testing, Wiki, Blog, Virtual Desktop ...
To complete business tasks
Developers and Deployers
Service and application test, development, integration and deployment
Create or deploy applications and services for users
System Managers
Virtual machines, operating systems, message queues, networks, storage, CPU, memory, backup services
Create platforms for service and application test, development, integration and deployment
From info.apps.gov/
Cloud Services
Giovanni Sartor
14




Source Adobe

Software as a cloud-based service

Giovanni Sartor

15


Ubiquitous data collection?

Giovanni Sartor

16

Source: www.fjitc.com

Autonomy, access, cooperation, sharing vs dependency, barriers, manipulation, surveillance?

Giovanni Sartor

17


Giovanni Sartor

18

# A regulatory challenge for the EU

- How to provide
  - New services
  - Effectiveness
  - Innovation
  - Security
  - Privacy
  - Consumer rights
  - Trust
- in the single market, given
  - global ubiquitous commerce and
  - connected ubiquitous governments

Giovanni Sartor 19

EUI, Garden of Villa Schifanoia

Thanks for your attention!

giovanni.sartor@eui.eu

Giovanni Sartor 20

## Presentations by Yong Woo LEE

## e-GOVERNMENT OF KOREA



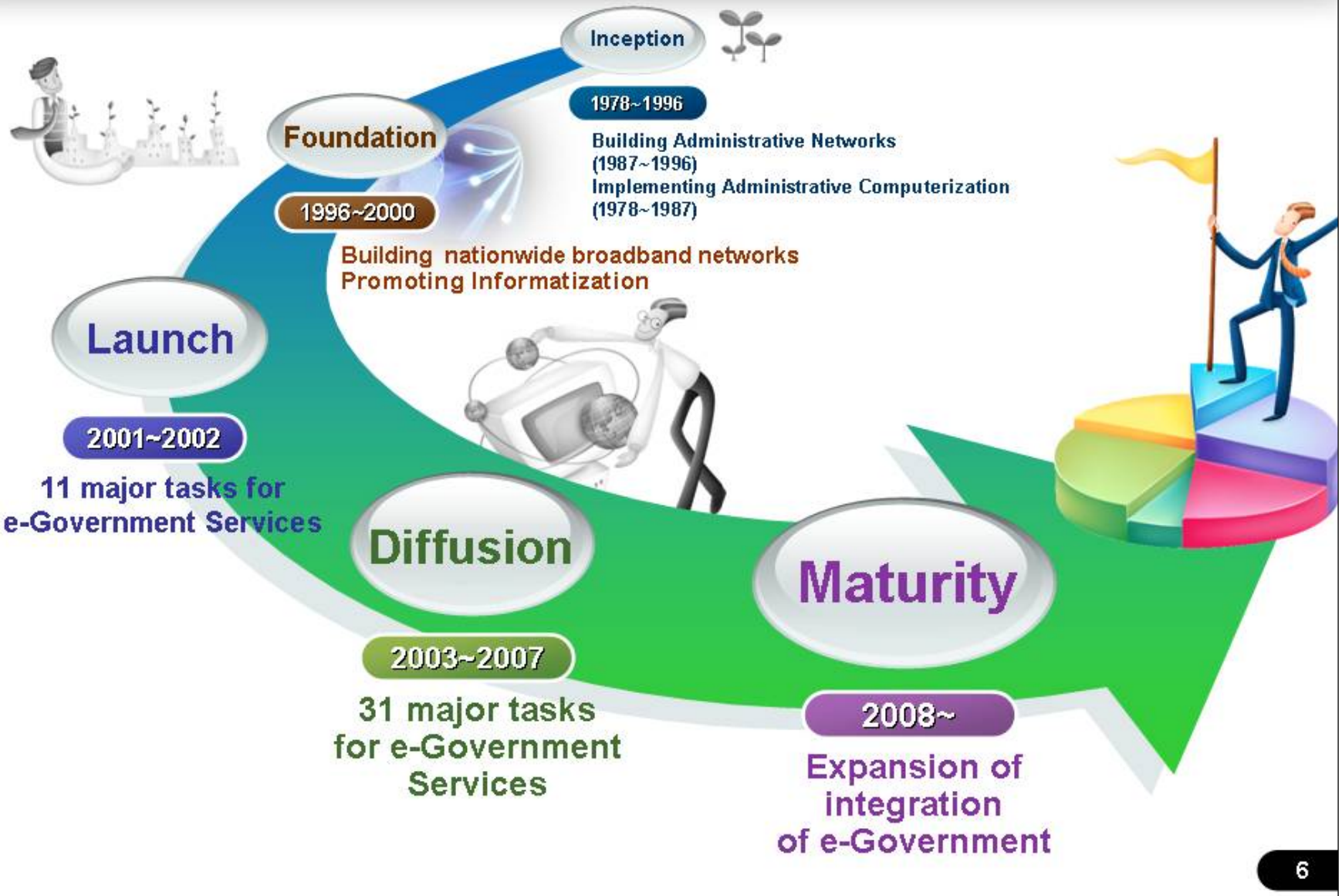
e-Government of Korea :
Development Journey and Outcomes
July, 2012
NIA
NATIONAL INFORMATION SOCIETY AGENCY

# Contents

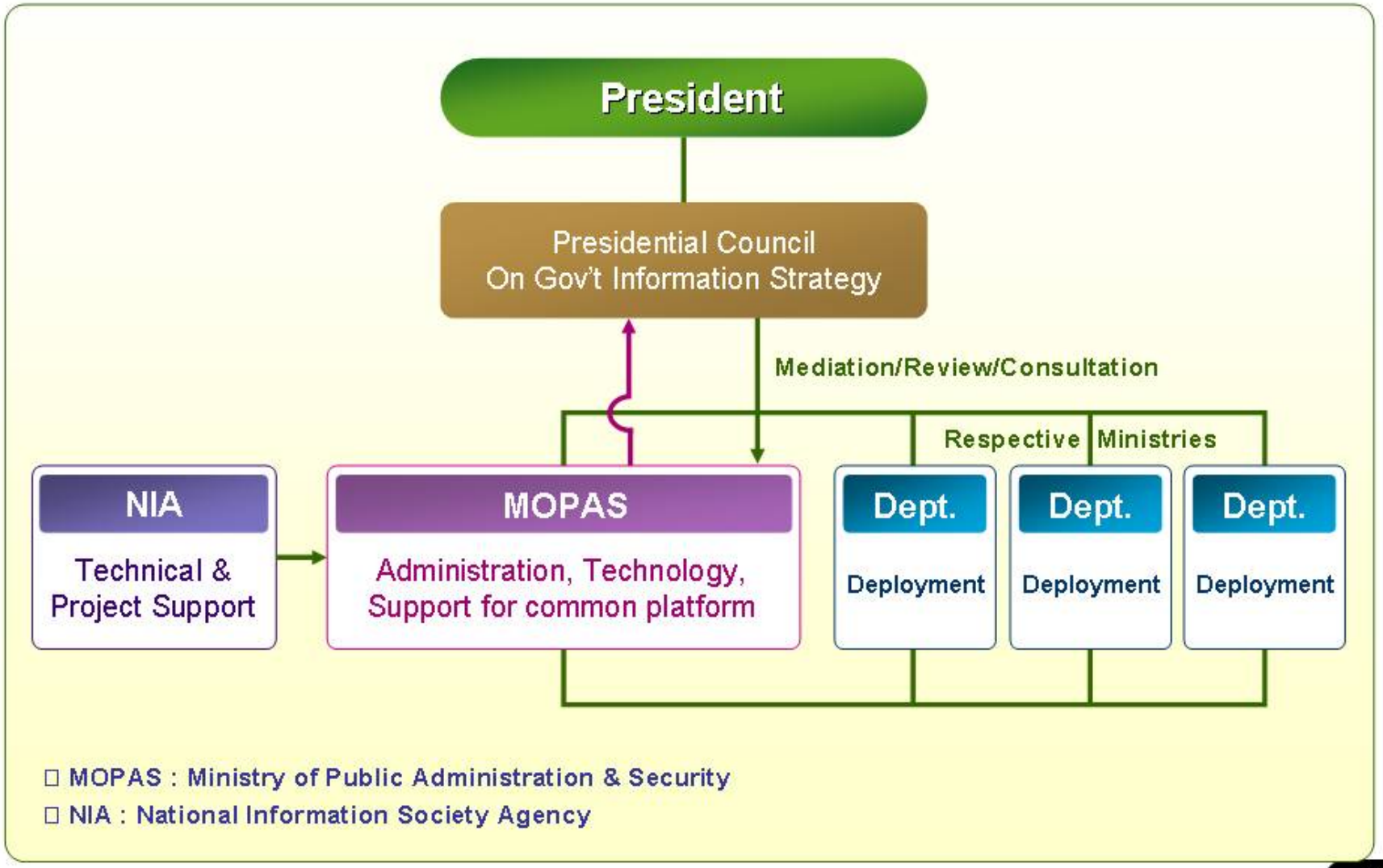

I. Korea's e-Government in Brief
1. History of Korea's e-Government
2. Korea's ICT Implementation Structure
3. UN e-Government Survey
4. World's Recognitions

# 1. History of Korea's e-Government





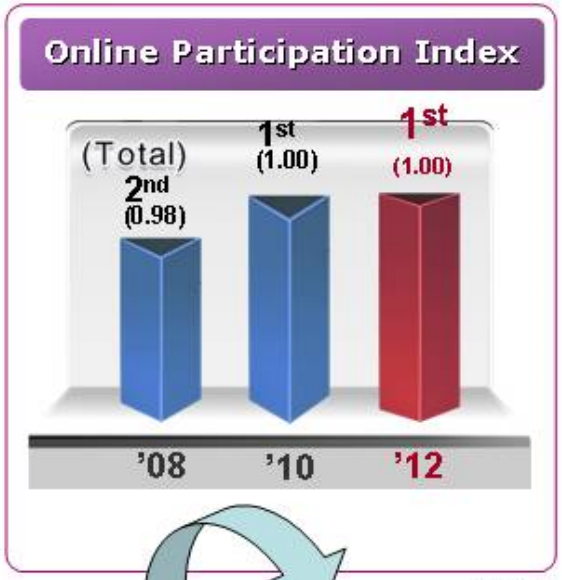
# 2. Korea's ICT Implementation Structure : 2012




□ MOPAS : Ministry of Public Administration & Security
□ NIA : National Information Society Agency

# 3. UN e-Government Survey




100%

**Level 1 Emerging**

- Limited web presence

79%

**Level 2 Enhanced**

- Regularly updated contents and information

92%

**Level 3 Transactional**

- Visa, passport, birth records obtained online
- Taxes & fees paid online

87%

**Level 4 Seamless**

- Seamless online service provided by agencies
- Converged public/ civil services

8

# 4. World's Recognitions

## Achieving the World's Best e-Government

### International Awards

- **KISS** (Immigration) — UN Public Service Award ('07)
- **Invil** (Village) — UN Public Service Awards ('11)
- **KONEPS** (Procurement) — WCIT Global Award ('06)

### Model Case Selection

- **HTS** (Tax) — OECD e-Tax Best Practice ('06)
- **e-People** (Petition) — 'Online Politics Trophy Top10' ('06)
- **uTradeHub** — 'World Advanced' in APEC Report ('05)

### International Certifications

- **KIPOnet** (Patent) — WIPO IT Standard ('06)
- **UNIPASS** (Customs) — ISO 9001, 20000('06)
- **KONEPS** (Procurement) — UN/CEFACT Int'l Standard ('05)

# II. Towards a Smart Government

1. Realization of a Smart Government
2. Five Agendas

# 1. Realization of a Smart Government

## Smart Government

An advanced government promoting use of public services and active citizen participation, anytime, anywhere through integration of smart devices and government services

## Via 'Smart e-Government 2015'

### ICT

- mobile devices
- cloud computing
- machine-to-machine services

□ active use of Smart ICT needed

### Culture & Society

- evolving population
- changing values
- "network society"

□ active response to social change needed

### Environment & Energy

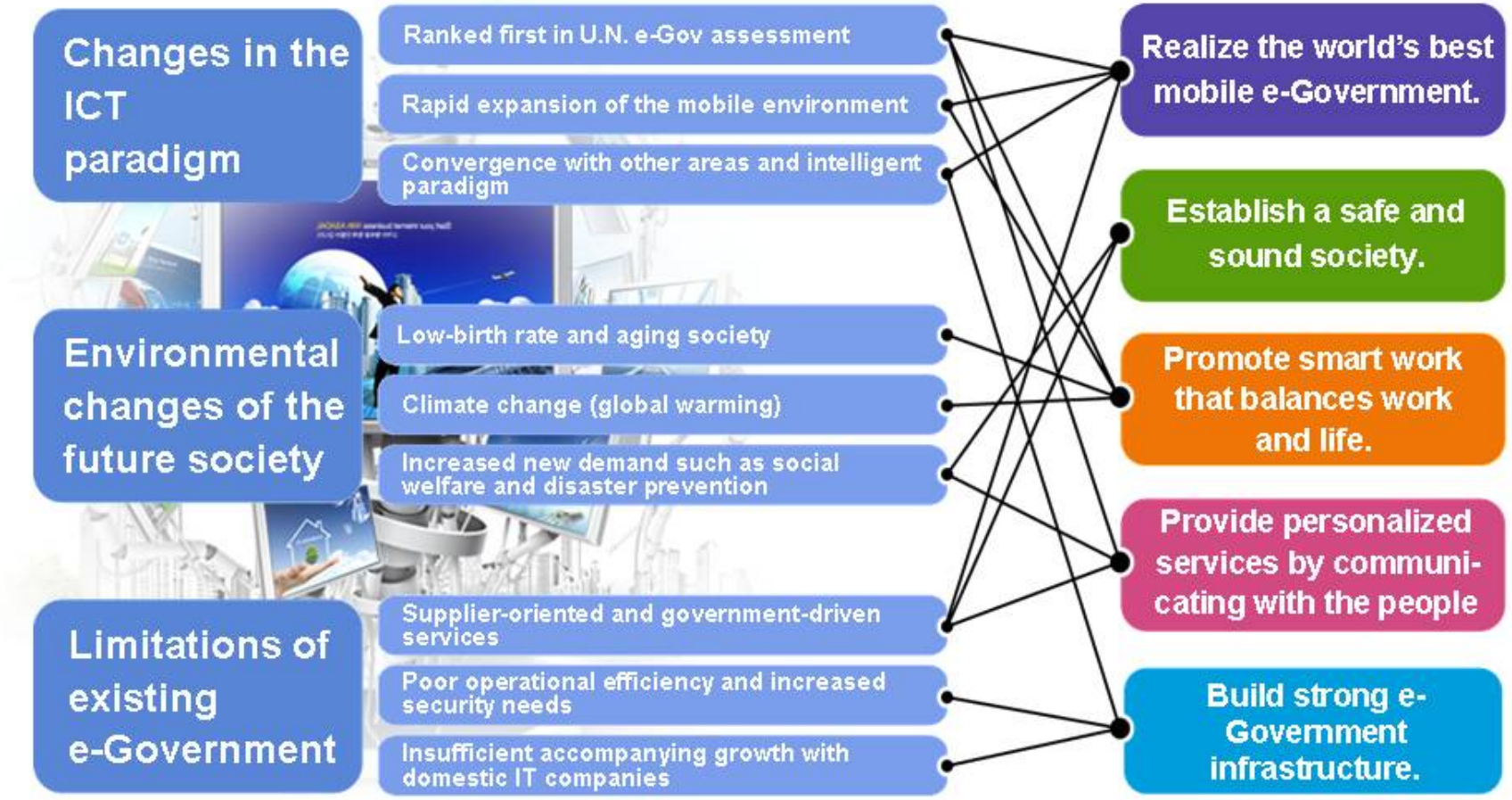
- global warming & atmospheric change
- energy crisis

□ resolution needed

# 2. Five Agendas



Identification of five agendas to actively respond to changes in the informatization paradigm and the future society environment, and upgrade the existing e-Government

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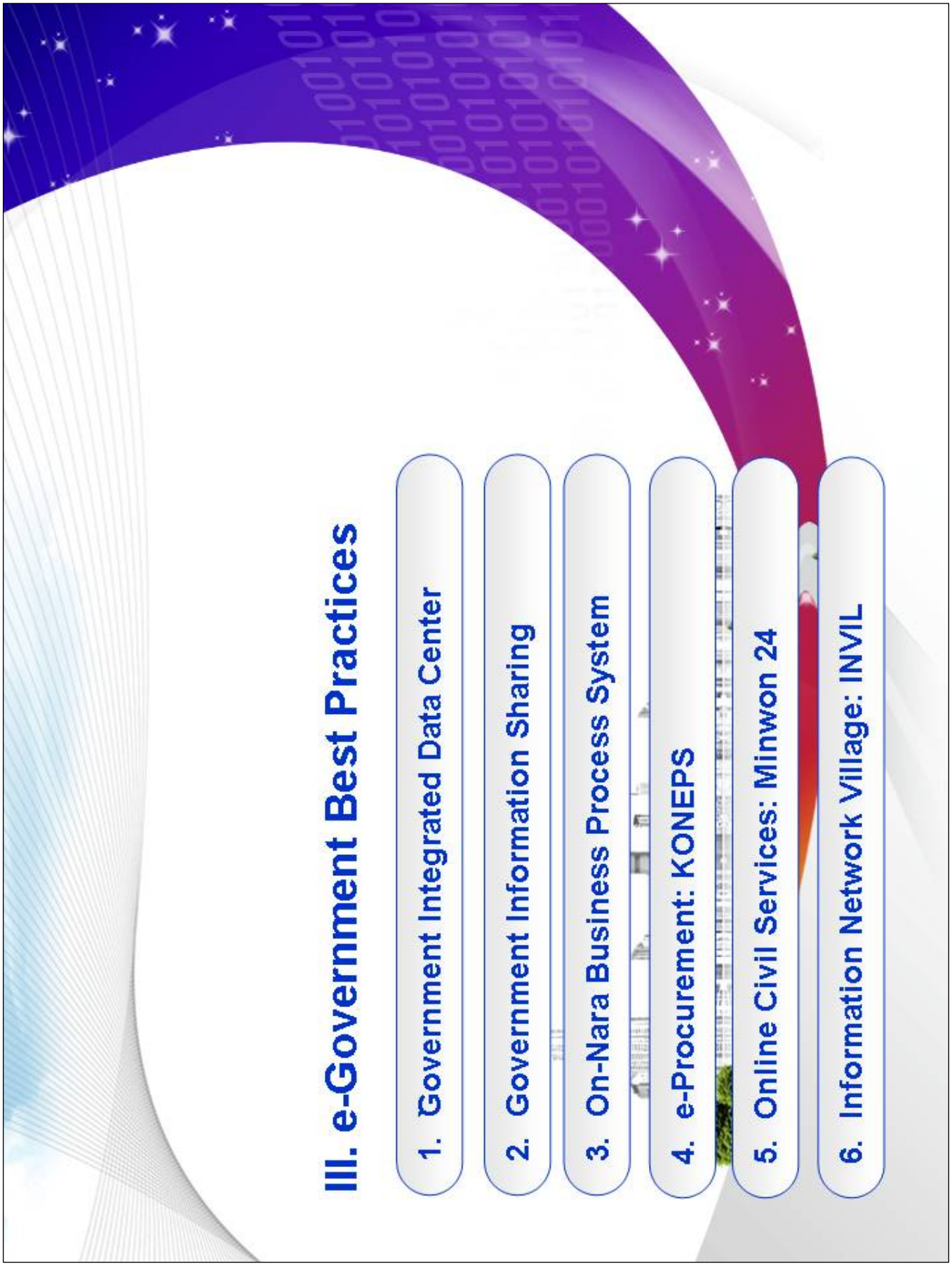

III. e-Government Best Practices
1. Government Integrated Data Center
2. Government Information Sharing
3. On-Nara Business Process System
4. e-Procurement: KONEPS
5. Online Civil Services: Minwon 24
6. Information Network Village: INVIL

# 1. Government Integrated Data Center



- Separately managed information systems are consolidated by establishing NCIA

Information systems of government agencies integrated and managed together

## Seamless & Flawless Operation Achieved

- Stable integrated IT management for 24 / 7
- Monthly system failure time : 67min □ 1.15min

## IT Management Improved

- 67% of employees licensed for ITIL (IT Infra. Lib.)
- Number of systems managed per person : 1.8 □ 13

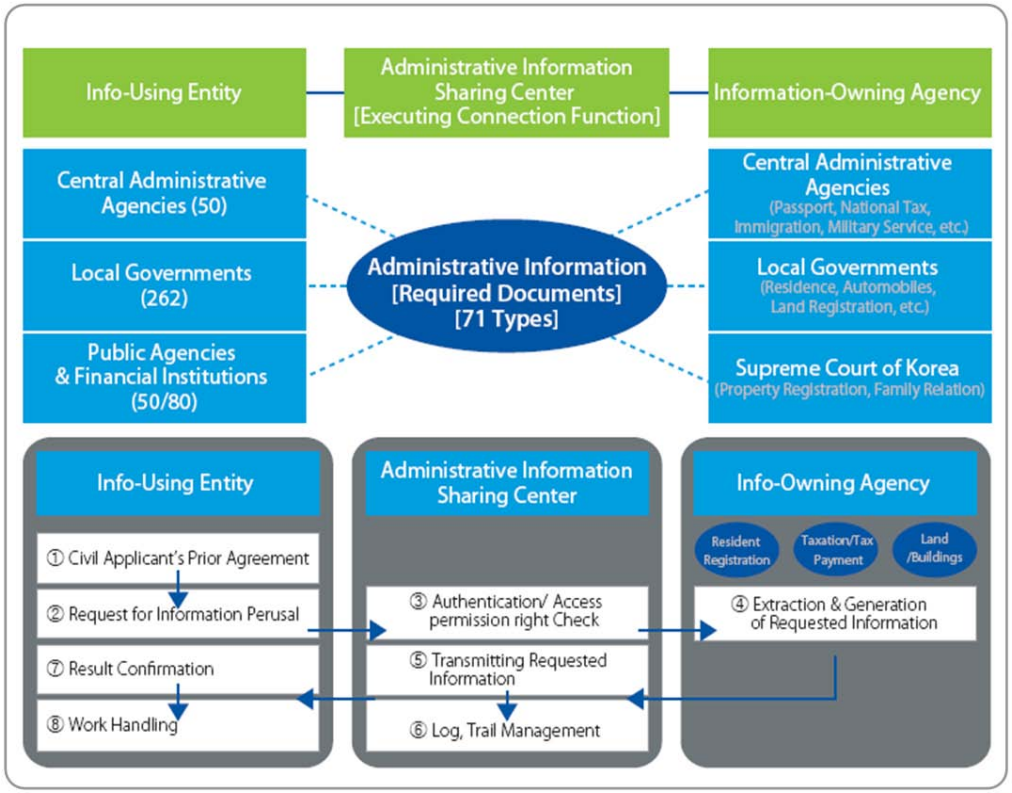
## Security Environment Consolidated

- 8-layer protection / 4-step analysis against intrusion
- Cyber attack / intrusion detection system equipped
- Dual system for natural disaster relief

□ NCIA: National Computing & Information Agency

# 2. Government Information Sharing

- To minimize required documents and office visits by expanding Gov't information sharing to the entire public sector and financial institutions
  - change from register & provider-centered, to customer-tailored Gov't info. Sharing
  - prevent misuse of critical information and promote Gov't info. sharing among agencies




## Expansion of Gov't info. sharing

- Expanding types of information inquires.: 92 types → 120 types(2012)
- Expanding # of agencies: 415(2010) → 455(2012)

Number of agencies sharing information:

- public: 313(administrative org.), 124(public org.)
- private:) 18

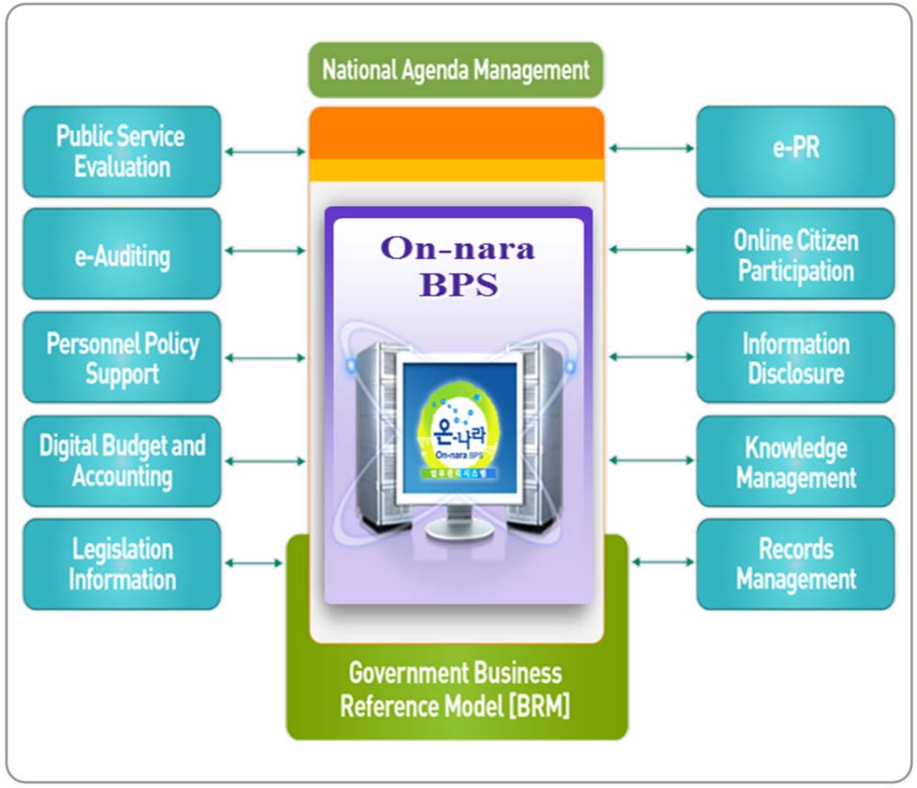
## Enhanced Transparency

- Developing 'One Screen Service' to show only needed info.of citizens to public officials
- Developing Gov't info. relay system to improve the management of Gov't info. relay service

# 3. On-Nara Business Process System



- **Integrated online management of Public processes**
  - 87 central and local governments are currently using On-Nara BPS.




## Policy accountability improved

- All decisions & opinions recorded in e-Document cards
- History management of all the edited documents

## Government Efficiency enhanced

- Online administration of all policy making process
- All officers are now using On-Nara BPS (2011)

# 4. e-Procurement: KONEPS

- Bidding procedures are now processed online in a one-stop process

**In 2010, $71 bn of transaction was conducted through KONEPS.**

*** Users: 220,000 suppliers, and 44,000 public entities**


*** Korea received UN Public Service Award (PSA) in 2003 and was introduced as a best practice model for transparency enhancement by OECD**

## Enhanced Efficiency

- Information on all public biddings
- One-time registration for bidding for all agencies and bidding documents submitted online
- Saves USD8.1B worth of transaction costs annually

## Enhanced Transparency

- Bidding and contract information open
- Real-time checking of procurement processing
- Reduced face-to-face meeting by work procedure automation

# 5. Online Civil Services: Minwon 24

- Number of documents and visits have decreased through online civil services

  Civil information inquiry, petition & application, document inquiry and issuance, etc.


## Civil information inquiry and application

- Online information services for up to 4,969 inquiries
- number of requested applications :

| | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| # of requested | 30,124 | 53,503 | 63,131 | 62,347 | 68,261 |

□ Online business registration, tax payment and its certificates, factory registration, etc.

## Online document inquiry and issuance

- Issuance statistics :

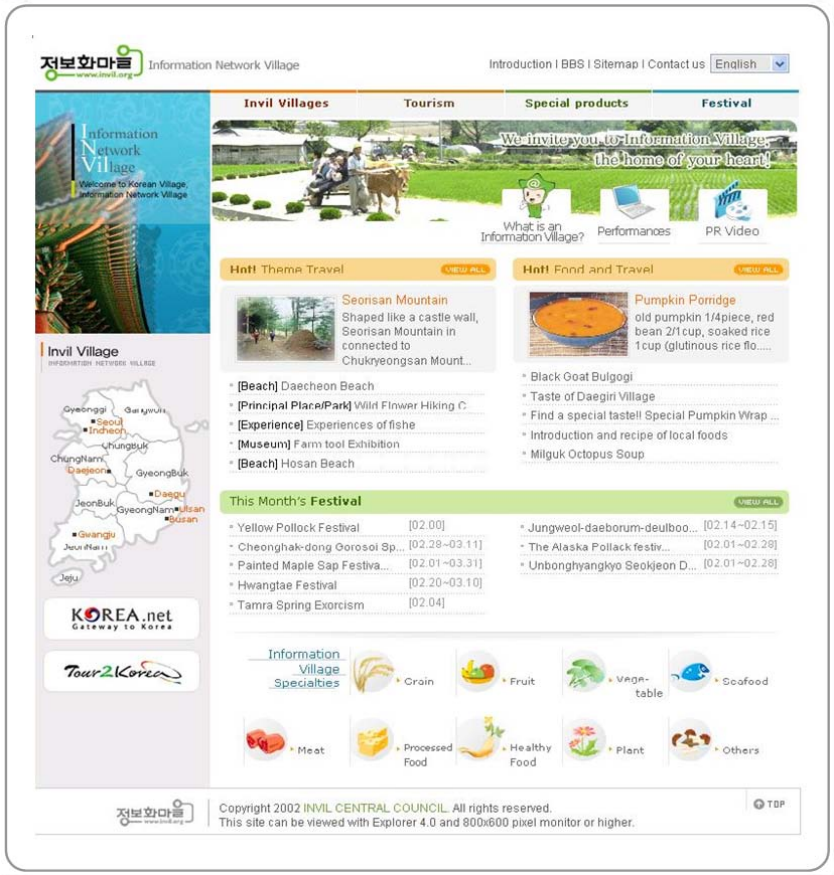
  8 inquiries(2005) □ 1,208 inquiries(2010)

  * Awarded the 2011 UNPSA
    - Improving transparency, accountability and responsiveness in the public service

# 6. Information Network Village: INVIL

- IT infrastructure established and IT education provided to rural regions

363 e-villages established, creating IT friendly environment in rural regions




## IT Infrastructure Established

- High speed internet subscription rate : 9.1% □ 66.5%
- 6,297 PCs provided to schools, local governments, public agencies, information network villages
- PC penetration rate : 37.3% □ 72.1%

## Online Commerce Vitalized

- Selling local specialties through online : $3M('06) □ $20M('10)
- Local specific contents, web portal, shopping, and community services provided

* Awarded the 2011 UNPSA

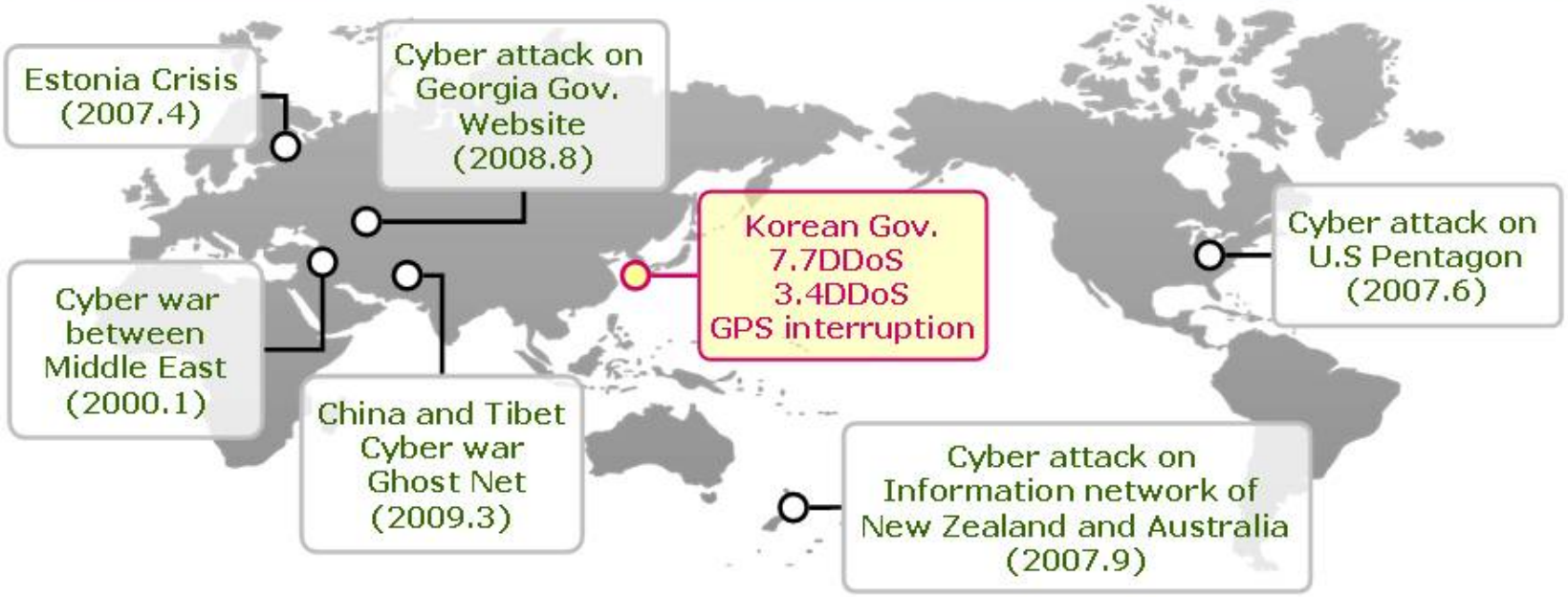
- Fostering participation in public policy-making decisions through innovative mechanisms

# IV. Problems and Challenges Ahead

1. Problems and Challenges Ahead
2. Current Status of Korea's e-Government

# 1. Problems and Challenges Ahead (1)

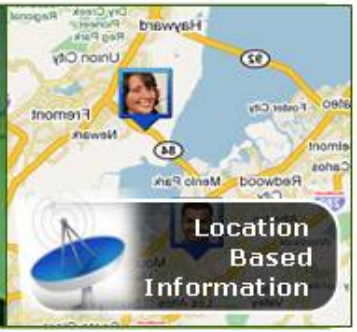
## Increasing "Cyber threats" such as Hacking, DDoS, Stuxnet




**Theats to "Digital Privacy"**

ICT development provides convenience as well as threats of personal information exposure





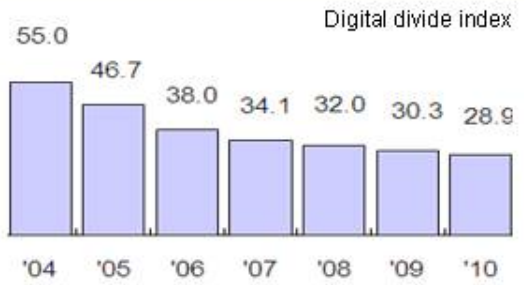
# 1. Problems and Challenges Ahead (2)



## Digital Divide

- Digital divide index for the disadvantaged
  → **28.9 points**

* Informatization level of the disadvantaged reaches 71.1% compared to the level of overall population




## Internet Addiction

- Total Addiction in 2010
  → **8.0%**

* Teenager 12.4%
Adult 5.8%


## Cyber Ethics

- Harmful information such as malicious reply, spam and defamation, etc.
- Incorrect information is made from speculation and rumors, then disseminated through the Internet and cell phones causing harm to people

Famous Actress Suicide

# 2. Efforts for solving the Problems and Challenges



## Cyber Threats And Digital Privacy


DDoS Defense System, Cyber attack detection system, etc

## Digital Divide

- IT Training for the disadvantaged (50,000 persons)
- Second-hand PC distribution (180,000 PCs)
- Information Network Village for rural areas (362 villages)

## Internet Addiction

- Internet Addition Prevention Training (130,000 cases)
- Internet Addiction Counseling (80,000 cases)

## Cyber Ethics

- Cyber ethics education for citizens from primary school
- Voluntary campaigns for cleaning up the internet
- Education for preventing recurrence of cyber crimes

MINISTRY OF
PUBLIC ADMINISTRATION
AND SECURITY


# V. Suggestions :

## Tasks of e-Leaders

# V. Suggestions



## Tasks of e-Leaders for successful e-Gov development

# Tasks of e-Leader



## 1 Customer Oriented e-Government Services

- **e-Government initiatives with the most potential to impact everyday lives of citizens such as resident registration, vehicle, customs clearance, employment, statistics management, etc... were given first priority, which became the foundation for e-Government**

  * Korea's e-Customs, e-Procurement, and e-Patent solutions grew to become globally recognized brand products

## 2 Appropriate Institutions for Each Phase of e-Gov Implementation

- **In order to sustain e-government implementation, appropriate laws were enacted during each phase ensuring a positive enabling environment for e-Government**

  * Act on Expansion of Dissemination and Promotion of Utilization of Information System (1986), Framework Act on Informatization Promotion(1996), Digital Signature Act(1999), e-Government Act(2001), Act on Shared Utilization of Public Administration Information(2010), etc.

# Tasks of e-Leader

## 3 Sustained Investment in e-Government Budget

- 1% of the national budget was invested into e-Government construction every year
- Created and utilized the Information and Telecommunication Promotion Fund to build early e-Government

  * Appropriated 10% of the informatization budget for e-Government support projects by MOPAS in order to effectively implement multi-ministry horizontal projects (2004)

## 4 Dedicated Organization Structure for e-Government Implementation

- Established supervisory committees to drive e-Government directly under the President or Prime Minister
- Assigned CIO for central and regional e-Government and created dedicated support structures
- Utilized specialized e-Government technical support agencies

  * National Information Society Agency , Korea Local Information Research & Development Institute

# Tasks of e-Leader



## 5 Change Management of Public Officers in a Changing e-Government Environment

- **Overcame issues such as public officers' fear of workforce reduction due to e-Government deployment, and resistance in using information systems through sustained change management education**

  * electronic system user training, public officer e-capacity development, informatization contests and so forth

## 6 Public : Private Partnership

- **Efficient role division with the government taking care of e-Government policy making, IT companies providing technology and skills, and citizens actively participating were key factors in e-Government construction and utilization**

  * Informatization Promotion Committee(1996), Special Committee on e-Government(2001), Presidential Committee on Government Innovation and Decentralization(2003), Presidential Committee on Government Information Strategy(2009)


Thank you
NIA
NATIONAL INFORMATION SOCIETY AGENCY
KOREA

## UBIQUITOUS SMART CITY

2013.5.13 1

# Ubiquitous (Smart) City

Yong Woo LEE, Ph.D.
Professor, University of Seoul
President, Ubiquitous City Consortium for Seoul, Korea
Director, Seoul Grid Center
Chair, The Korean National Committee for ISO JTC1/SC22
Vice President, Korea Internet Information Society

**2013. 5. 13**





2013.5.13 2

## The Concept of U-City.

2013.5.13 3

| | E-society | U-city |
|---|---|---|
| Concept | On-line | On-line&Off-line |
| Method | Manual recognition | Automatic recognition |
| IT Infra | High speed network and Mobile | RFID, USN, Wibro, HSDPA and etc. |
| Technology | DB, Web, SL (S/W) | RFID tag/reader, sensor-node, battery, middle-ware(S/W+H/W) |
| Application | E-government, E-library and etc. | The bridge, track environment, traffic etc. |
| Present level | Commercial business level | Technical development and demonstration application |

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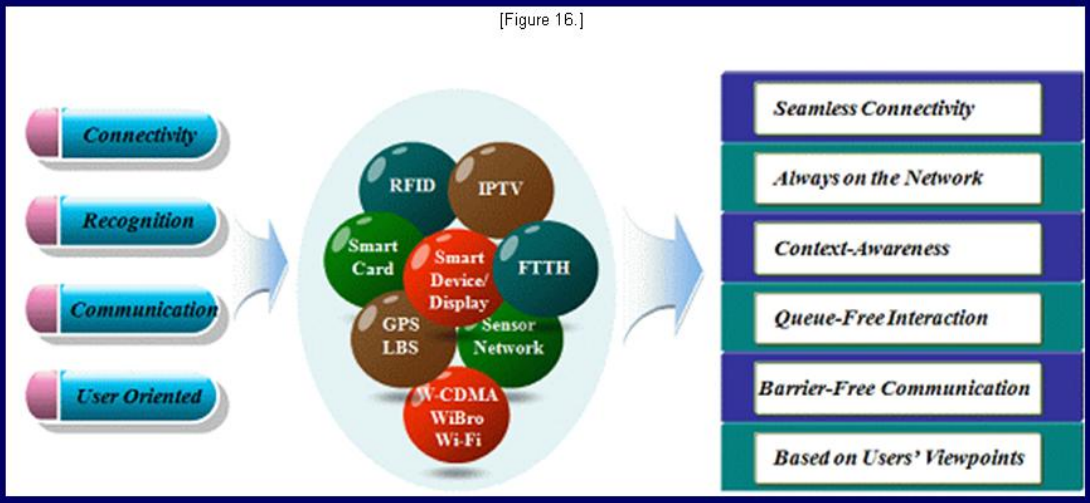
[Figure 16.]

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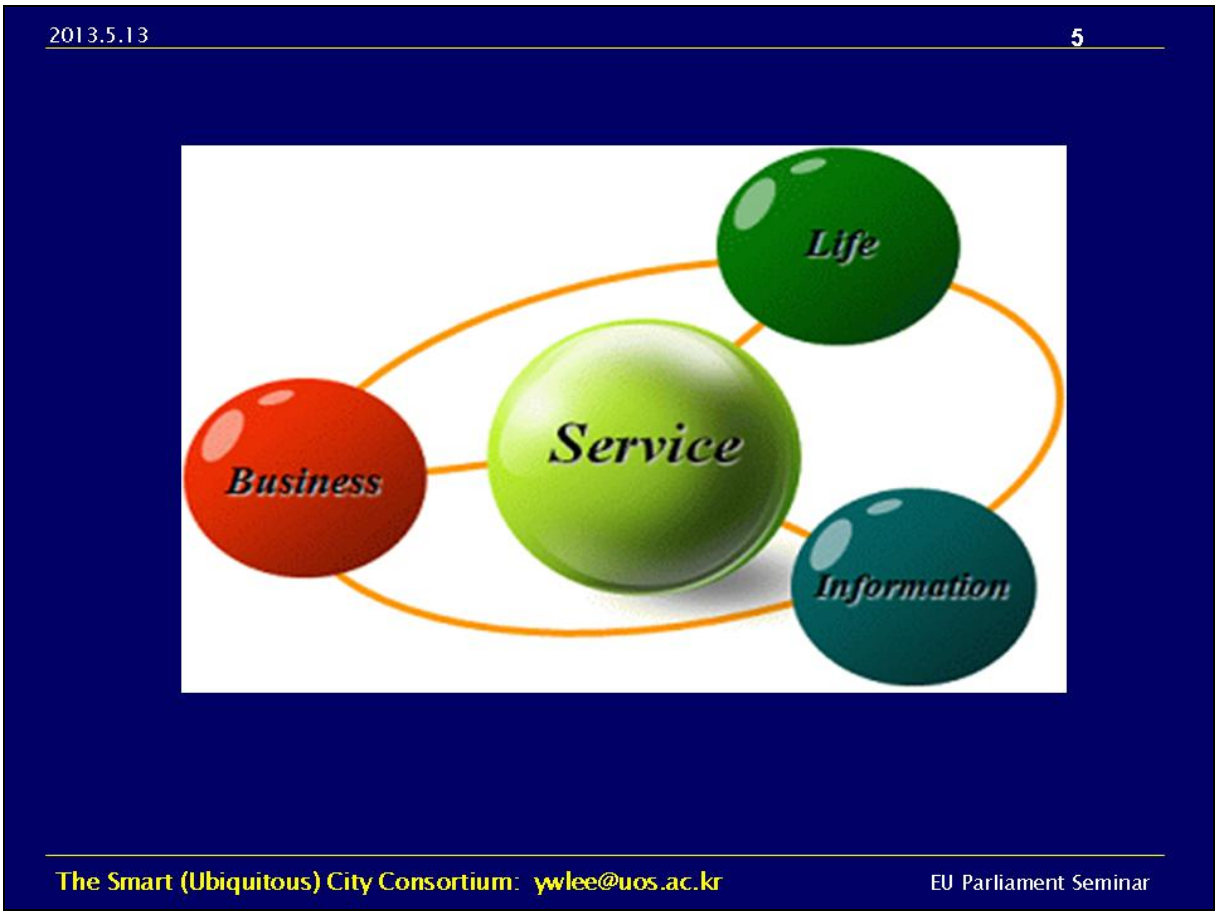
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Life
Service
Business
Information
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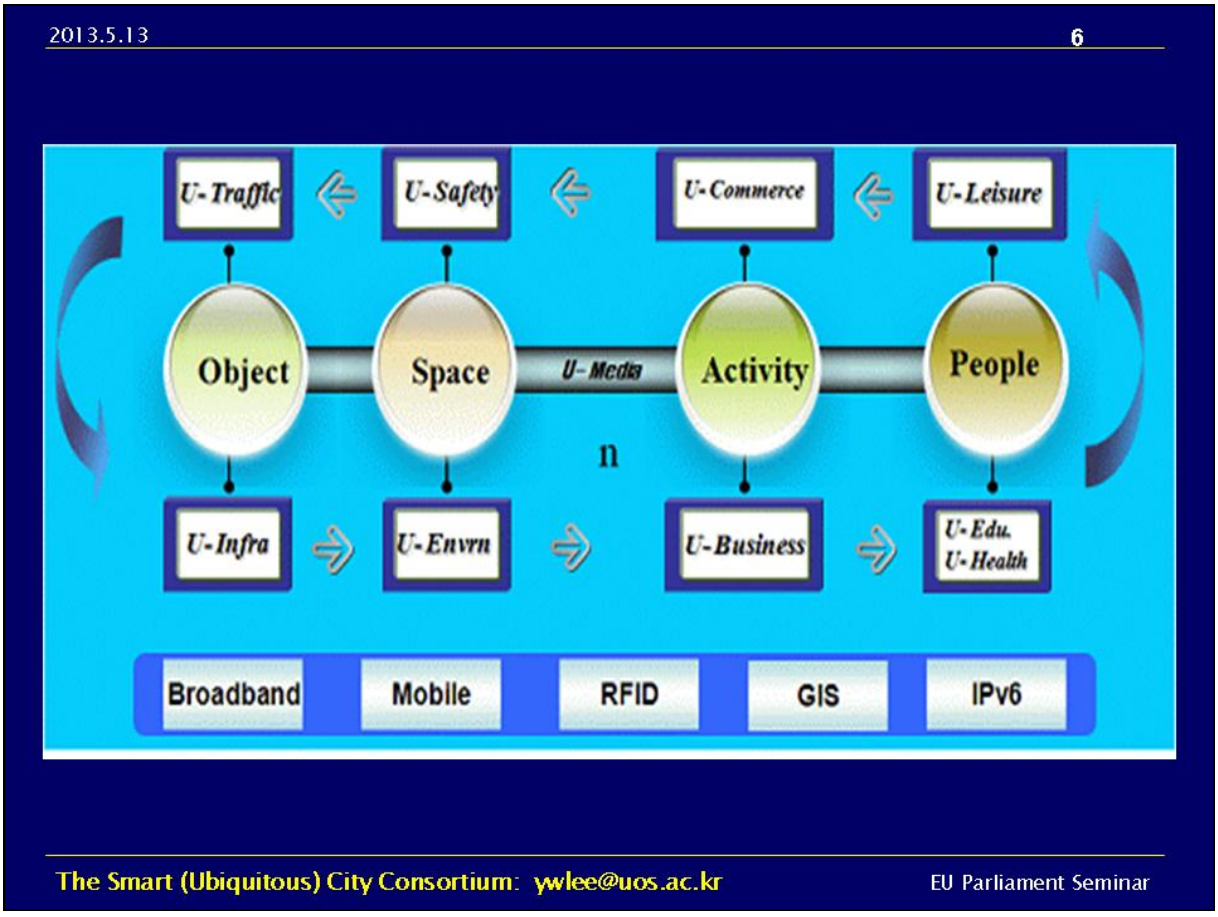
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6
U-Traffic
U-Safety
U-Commerce
U-Leisure
Object
Space
U-Media
Activity
People
n
U-Infra
U-Envrn
U-Business
U-Edu.
U-Health
Broadband
Mobile
RFID
GIS
IPv6
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| U-city Project Name | Period | Goal |
|---|---|---|
| Digital Media City | 2001~2010 | The World best IT town, Northeast Asian IT hub. |
| U-Gangnam | 2004~2007 | Seamless Connectivity, Mobile Environment, Autonomic Intelligence, Real E-Service, Teleportation & Telework. |
| U-cheonggyecheon | 2007 | Convergence network, 3D-based GIS, U-city testbed. |
| U-Myengdong/Uljiro | 2007~2010 | Digital media plaza, Digital media street, Digital media gallery |
| Eunpyeong New Town | 2006~2011 | A ubiquitous new-town, U-infra, U-green |
| U-Songdo | 2002~2020 | A national u-city |
| U-Chongna | 2010~2013 | An international tourist city |
| U-Busan | 2004~2010 | The World first u-city. U-port, U-Traffic, U-Convention. |
| U-Gwangju | 2004~2012 | Centered on u-home. |
| U-Daejeon | 2004~2007 | Introducing new technologies for u-city, U-cluster, U-EXPO, U-wellbeing, U-smart city. |
| U-Gyeongbuk | 2004~2010 | The largest u-city testbed. U-culture. |
| U-Pyong Chang | 2006~2010 | U-city for winter sports |
| U-Chungbuk | 2005~2009 | 3D GIS, U-cluster. |
| U-Jeju | 2004~2006 | Focused on telematics. |
| U-Sejong | 2005~2030 | Innovative Cities, U-government |
| U-Heungdeok | 2004~2007 | A ubiquitous new-town. |
| U-Suwon | 2004~2007 | Mobile public service. |
| Gwanggyo New-town | 2005~2011 | A ubiquitous well being town. |
| Pangyo New-town | 2006~2010 | A u-echo city for citizen |
| U-Dongtan | 2003~2007 | Home-network, GIS, ITS, BcN, IBS. |
| U-Jeonju | 2005~2008 | U-culture, U-tour, U-traffic. |
| U-Paju | 2005~2009 | A ubiquitous new-town, Total Life-Card, Smart transport, 48 services. |
| U-Bucheon | 2010~2014 | U-home network, U-traffic, U-tour/ culture, U-echo, U-safety. |
| U-Changwon | 2004~2008 | Digital broadcasting, Media center. |
| U-Ansan | 2007~2012 | U-Industry, U-tour |

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# Major U-city projects in Korea - 1

| U-city Project Name | Period | Goal |
|---|---|---|
| Digital Media City | 2001~2010 | The World best IT town, Northeast Asian IT hub. |
| U-Gangnam | 2004~2007 | Seamless Connectivity, Mobile Environment, Autonomic Intelligence, Real E-Service, Teleportation & Telework. |
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| Eunpyeong New Town | 2006~2011 | A ubiquitous new-town, U-infra, U-green |
| U-Songdo | 2002~2020 | A national u-city |
| U-Chongna | 2010~2013 | An international tourist city |
| U-Busan | 2004~2010 | The World first u-city. U-port, U-Traffic, U-Convention. |
| U-Gwangju | 2004~2012 | Centered on u-home. |
| U-Daejeon | 2004~2007 | Introducing new technologies for u-city, U-cluster, U-EXPO, U-wellbeing, U-smart city. |

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## Major U-city projects in Korea - 2

| | | |
|---|---|---|
| U-Gyeongbuk | 2004~2010 | The largest u-city testbed. U-culture. |
| U-Pyong Chang | 2006~2010 | U-city for winter sports |
| U-Chungbuk | 2005~2009 | 3D GIS, U-cluster. |
| U-Jeju | 2004~2006 | Focused on telematics. |
| U-Sejong | 2005~2030 | Innovative Cities, U-government |
| U-Heungdeok | 2004~2007 | A ubiquitous new-town. |
| U-Suwon | 2004~2007 | Mobile public service. |
| Gwanggyo New-town | 2005~2011 | A ubiquitous well being town. |
| Pangyo New-town | 2006~2010 | A u-echo city for citizen |
| U-Dongtan | 2003~2007 | Home-network, GIS, ITS, BcN, IBS. |
| U-Jeonju | 2005~2008 | U-culture, U-tour, U-traffic. |
| U-Paju | 2005~2009 | A ubiquitous new-town, Total Life-Card, Smart transport, 48 services. |
| U-Bucheon | 2010~2014 | U-home network, U-traffic, U-tour/ culture, U-echo, U-safety. |
| U-Changwon | 2004~2008 | Digital broadcasting, Media center. |
| U-Ansan | 2007~2012 | U-Industry, U-tour |

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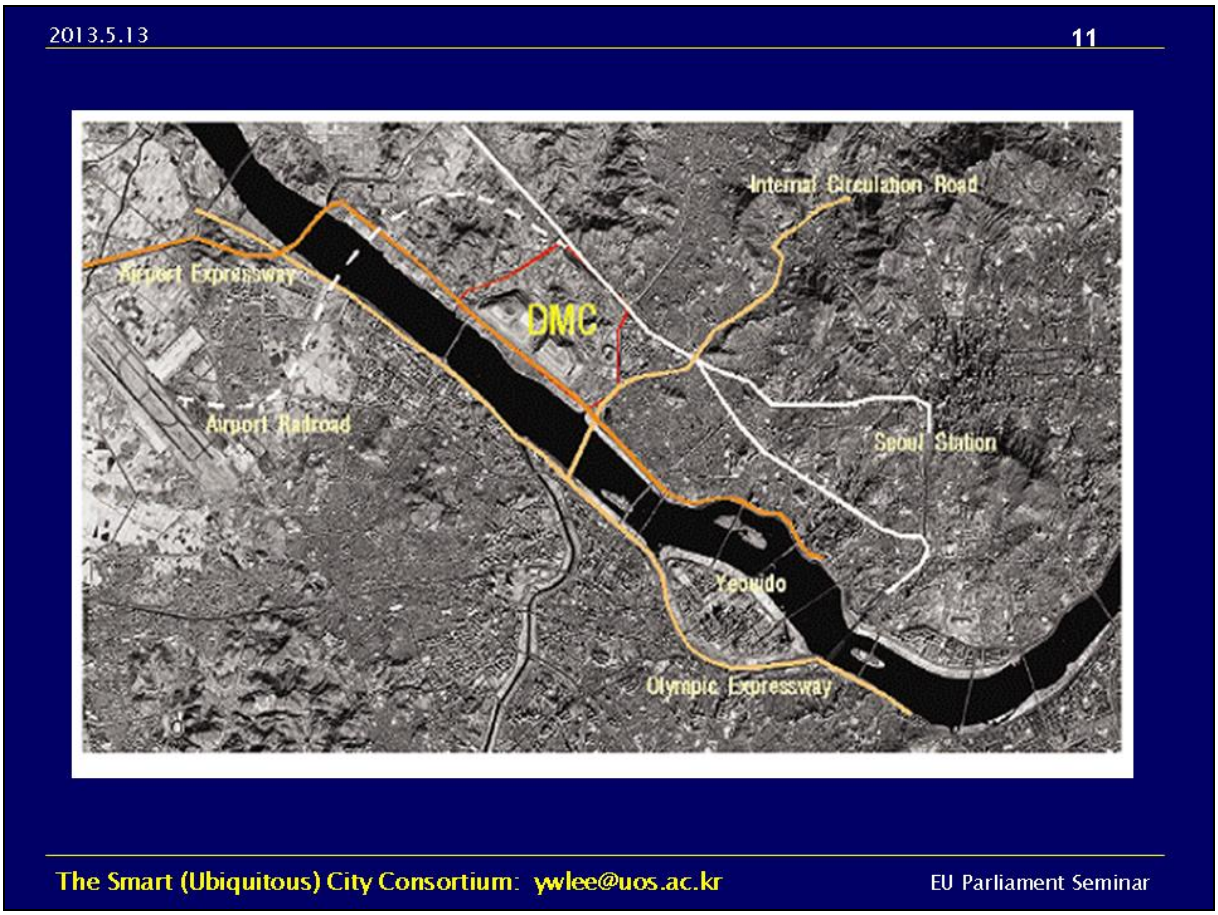
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11
Internal Circulation Road
Airport Expressway
DMC
Airport Railroad
Seoul Station
Yeouido
Olympic Expressway
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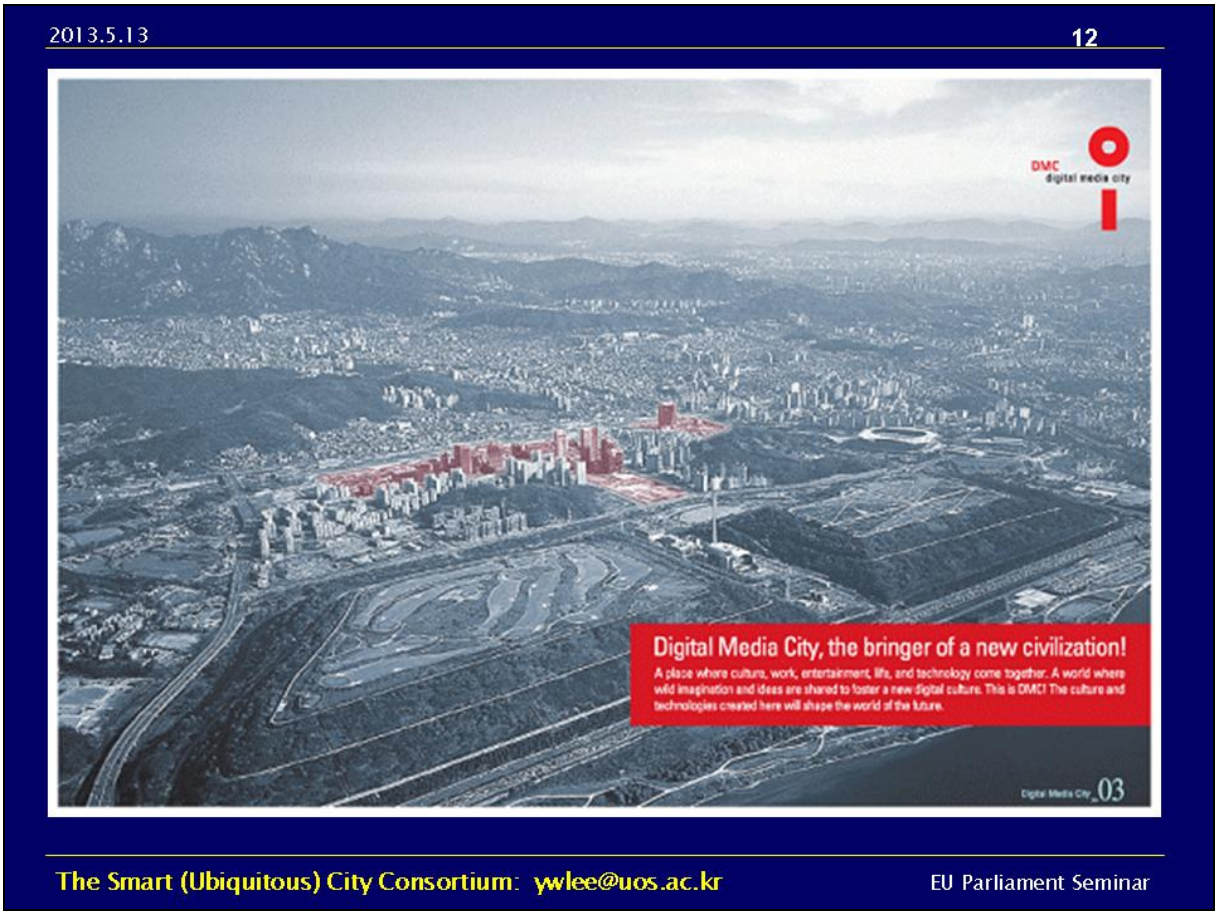
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12
DMC
digital media city
Digital Media City, the bringer of a new civilization!
A place where culture, work, entertainment, life, and technology come together. A world where wild imagination and ideas are shared to foster a new digital culture. This is DMC! The culture and technologies created here will shape the world of the future.
03
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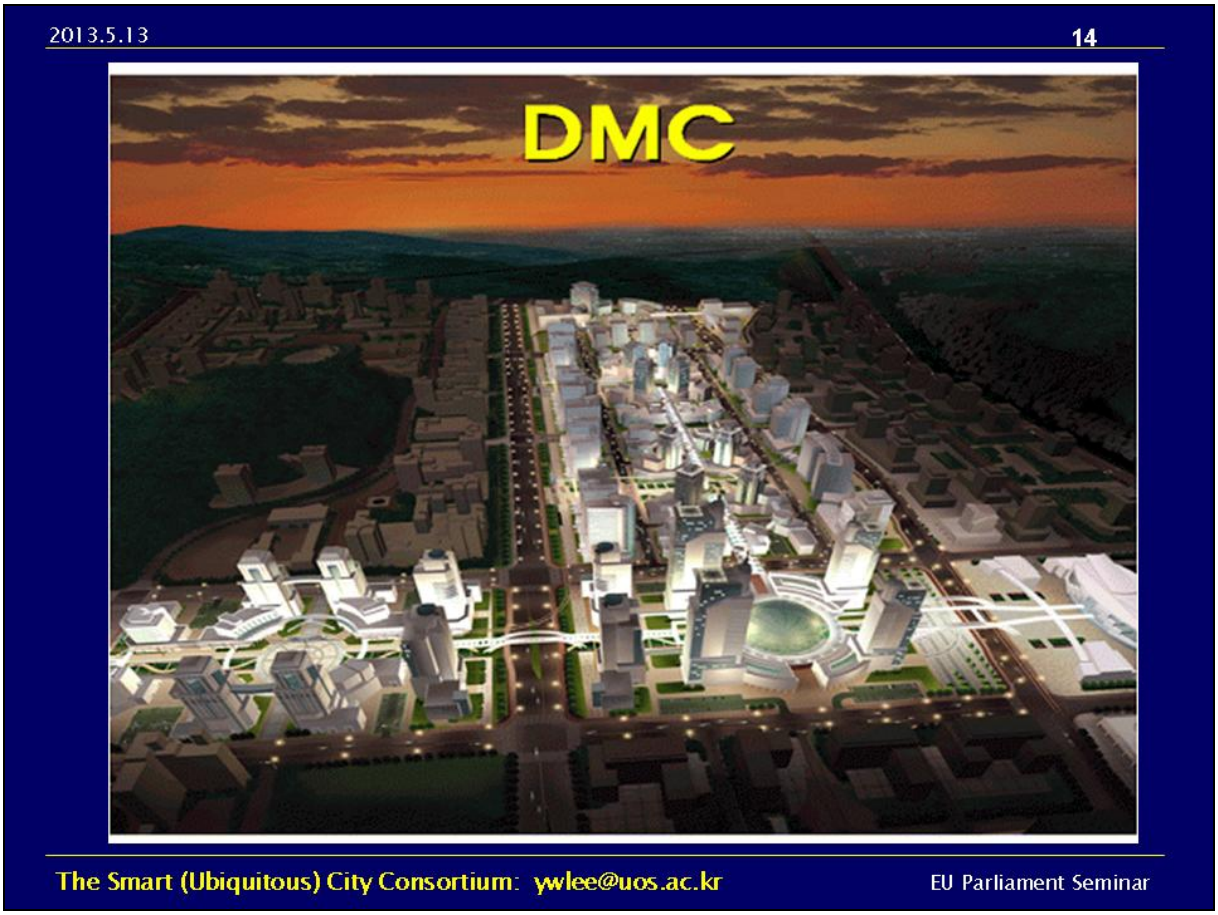
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DMC
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Worldcup stadium
Park 1
Park 2
Hangang river
Park 3
Park 4
Museum
Apartment
DMC
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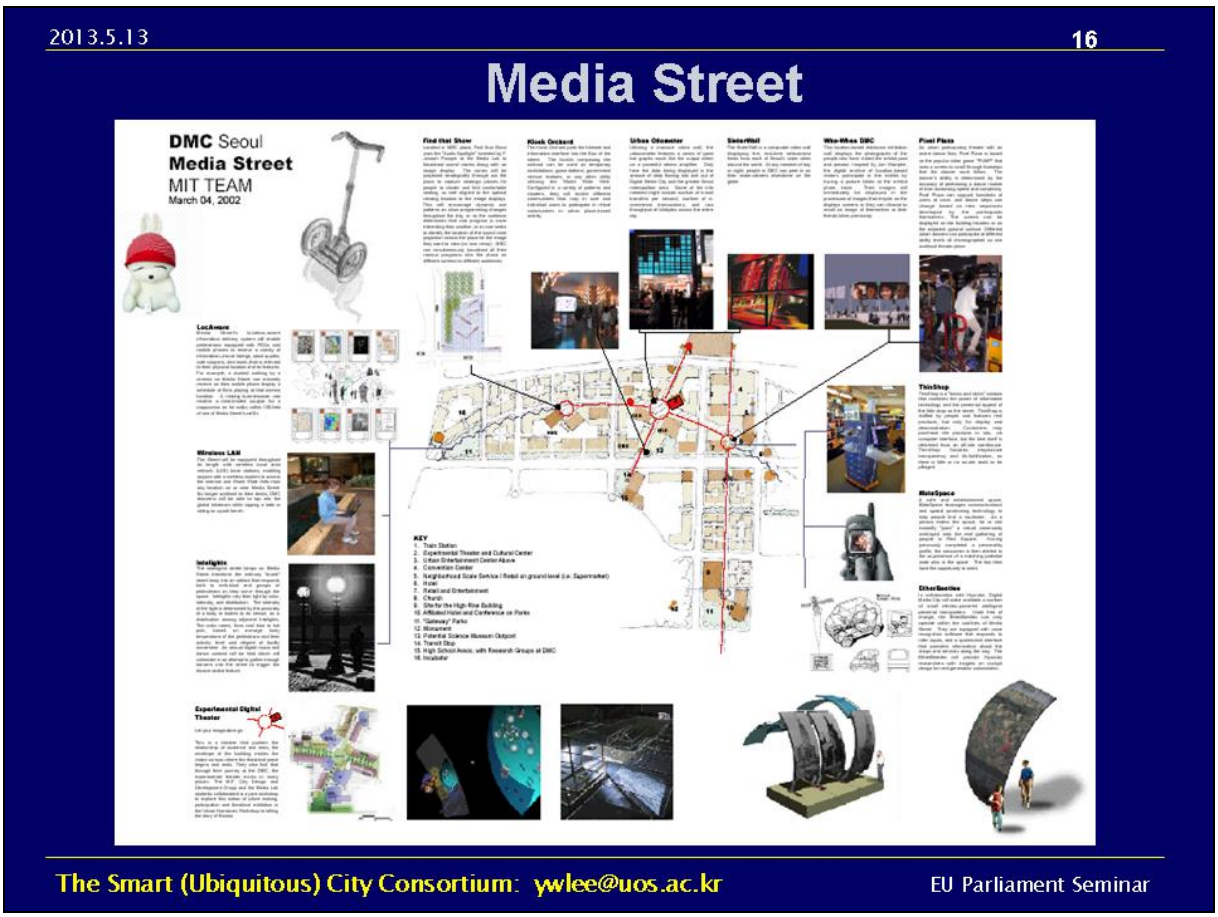
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Media Street
DMC Seoul
Media Street
MIT TEAM
March 04, 2002
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19
DMC of today
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20
WINDSOR
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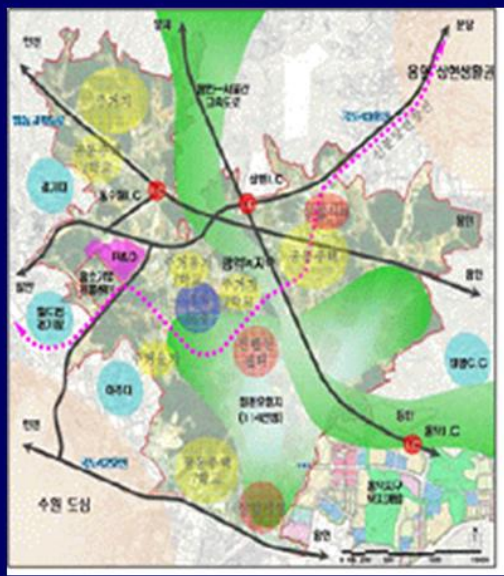

- Project : Gwanggyo new town
- Location : Suwon lui-dong, Yongin sanghyun-dong
- Area : 3,410,000 (py) (Suwon 88%, Yongin 12%)
- Period : 2004.12.30 ~ 2010.12.31
- Population : 60,000people 24,000household ( Population density : 53.2/ha)

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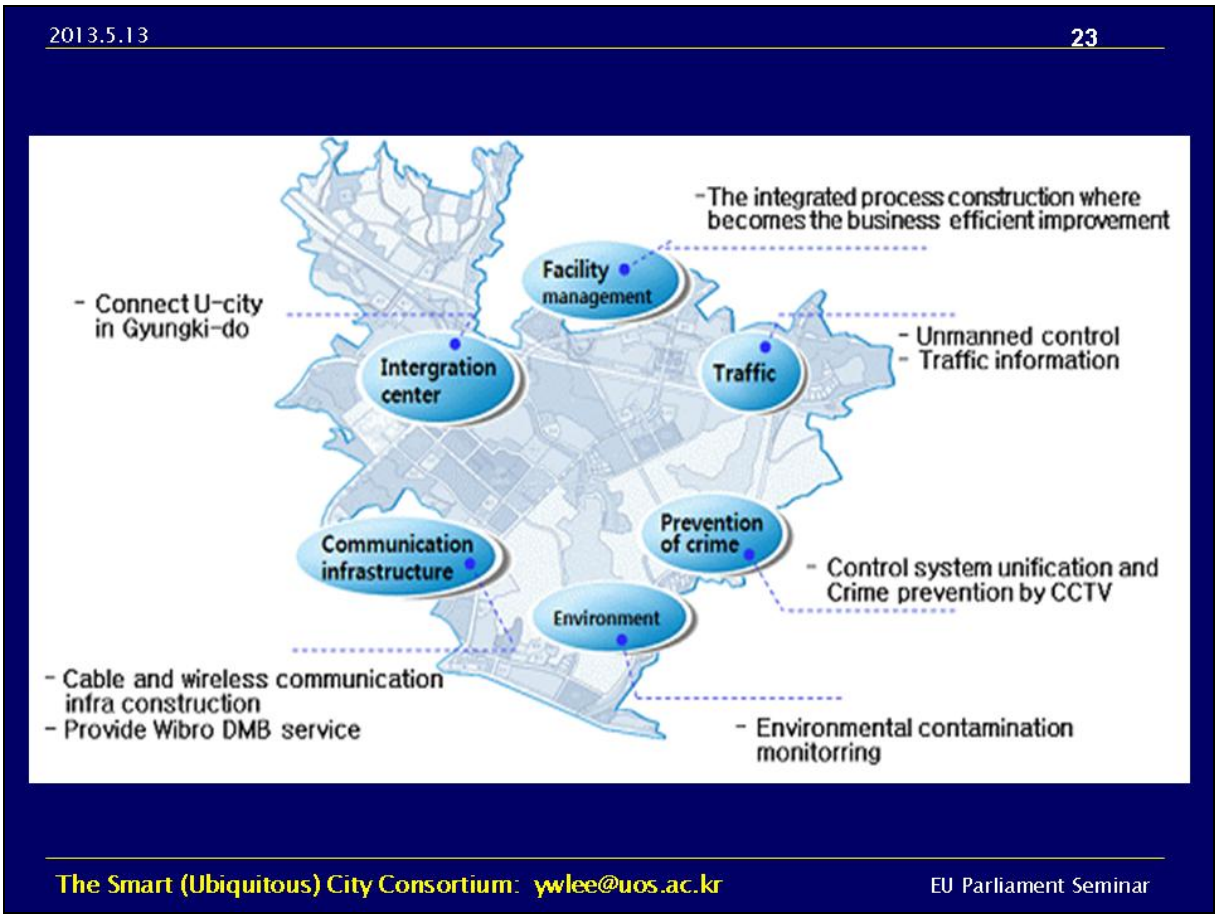
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23
-The integrated process construction where becomes the business efficient improvement
Facility management
- Connect U-city in Gyungki-do
Intergration center
Traffic
- Unmanned control
- Traffic information
Prevention of crime
Communication infrastructure
- Control system unification and Crime prevention by CCTV
Environment
- Cable and wireless communication infra construction
- Provide Wibro DMB service
- Environmental contamination monitorring
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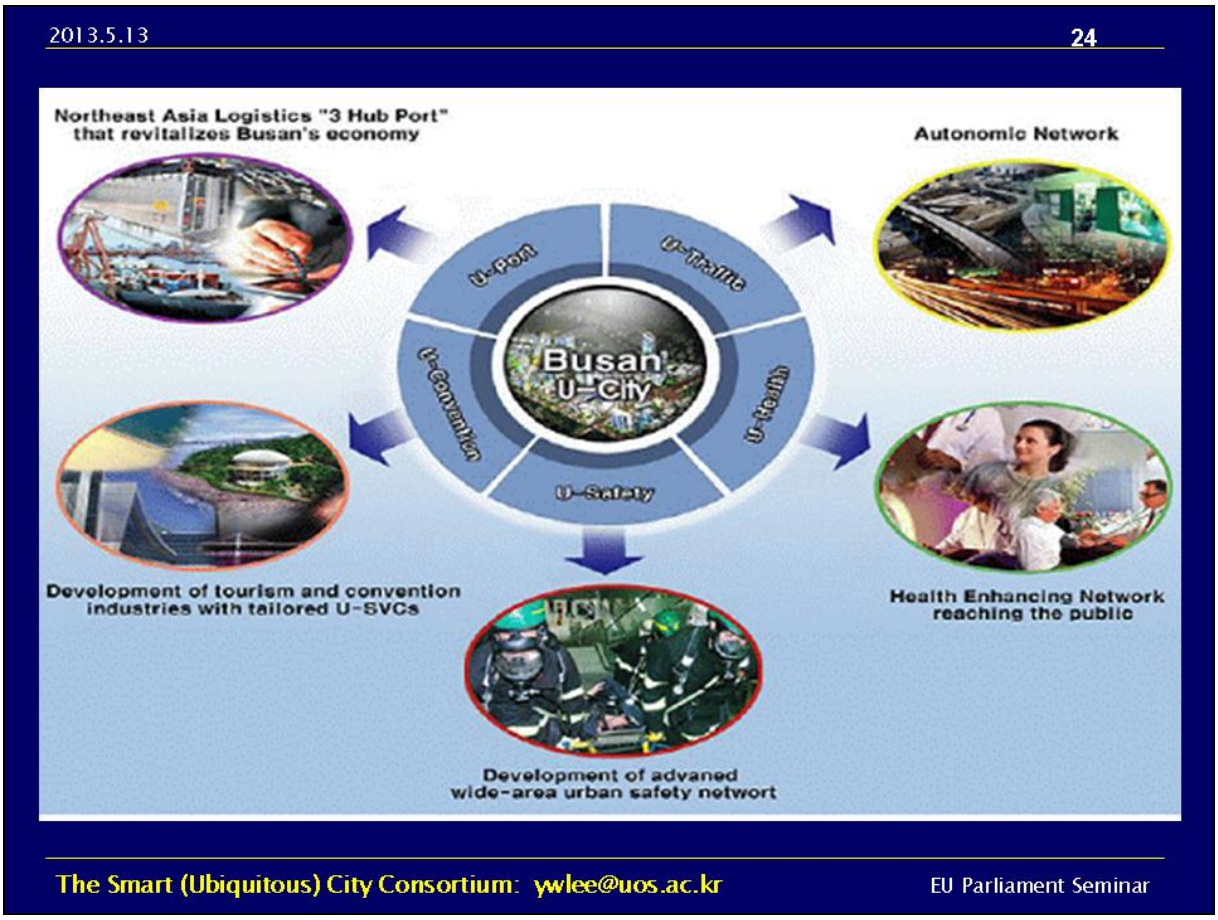
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24
Northeast Asia Logistics "3 Hub Port" that revitalizes Busan's economy
Autonomic Network
U-Port
U-Traffic
Busan U-City
U-Convention
U-Health
U-Safety
Development of tourism and convention industries with tailored U-SVCs
Health Enhancing Network reaching the public
Development of advaned wide-area urban safety networt
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# Acknowledgment


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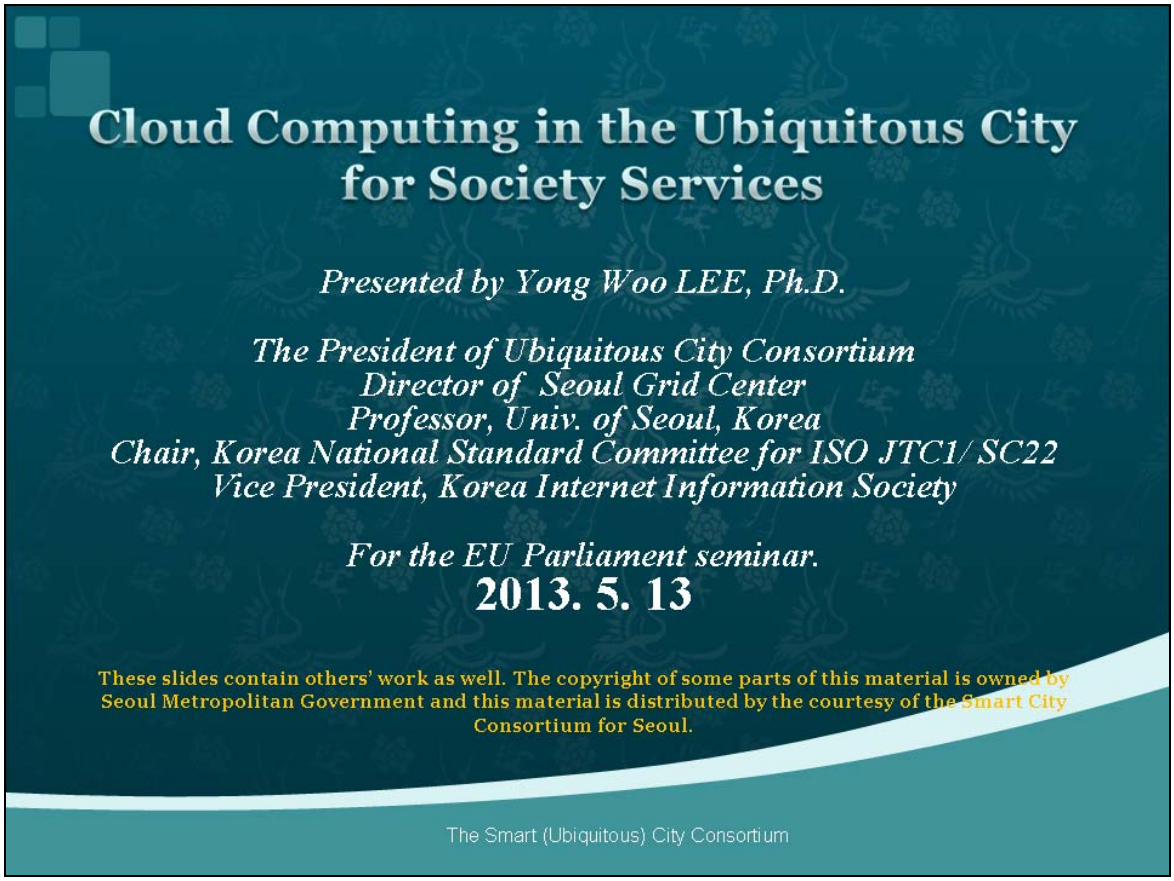
The Smart (Ubiquitous) City Consortium: ywlee@uos.ac.kr



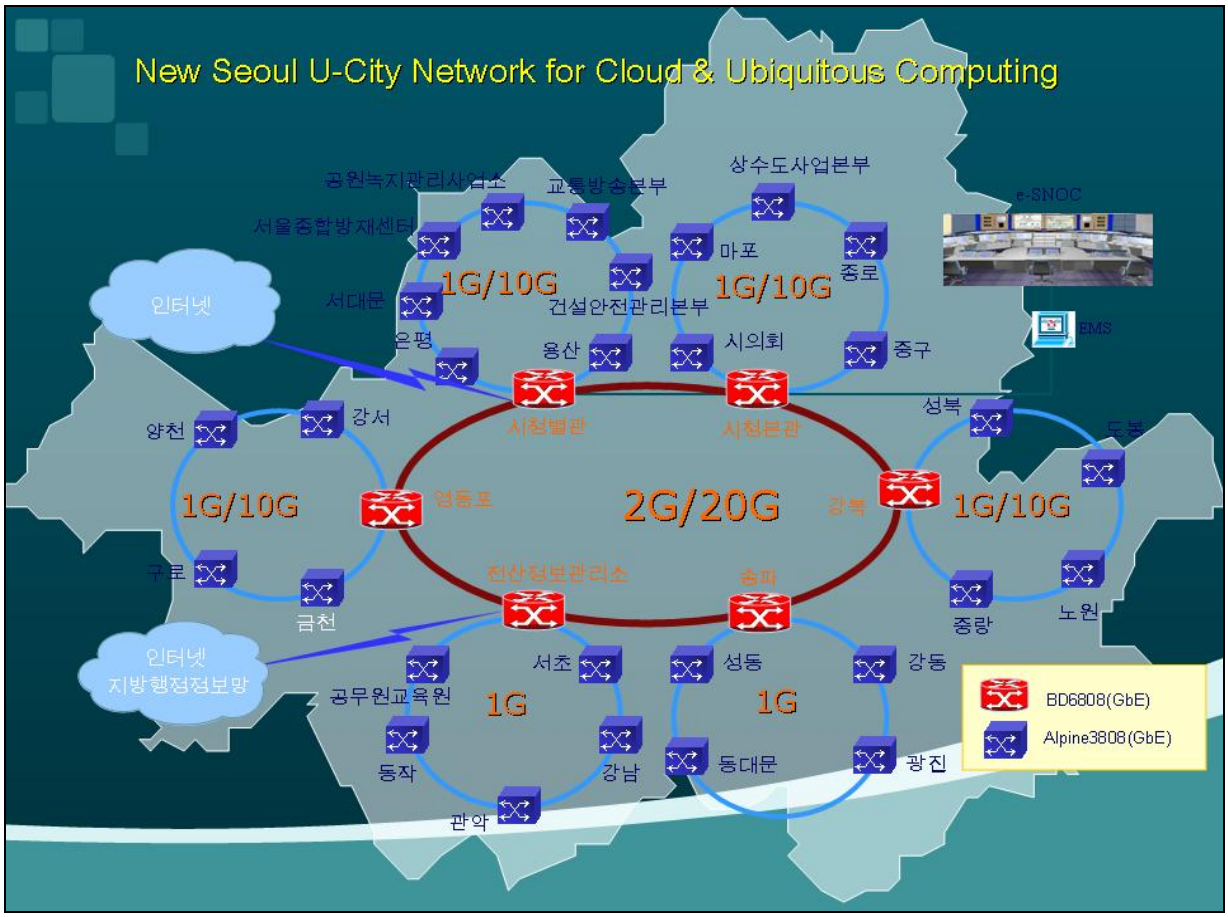
## UBIQUITOUS SMART CITY

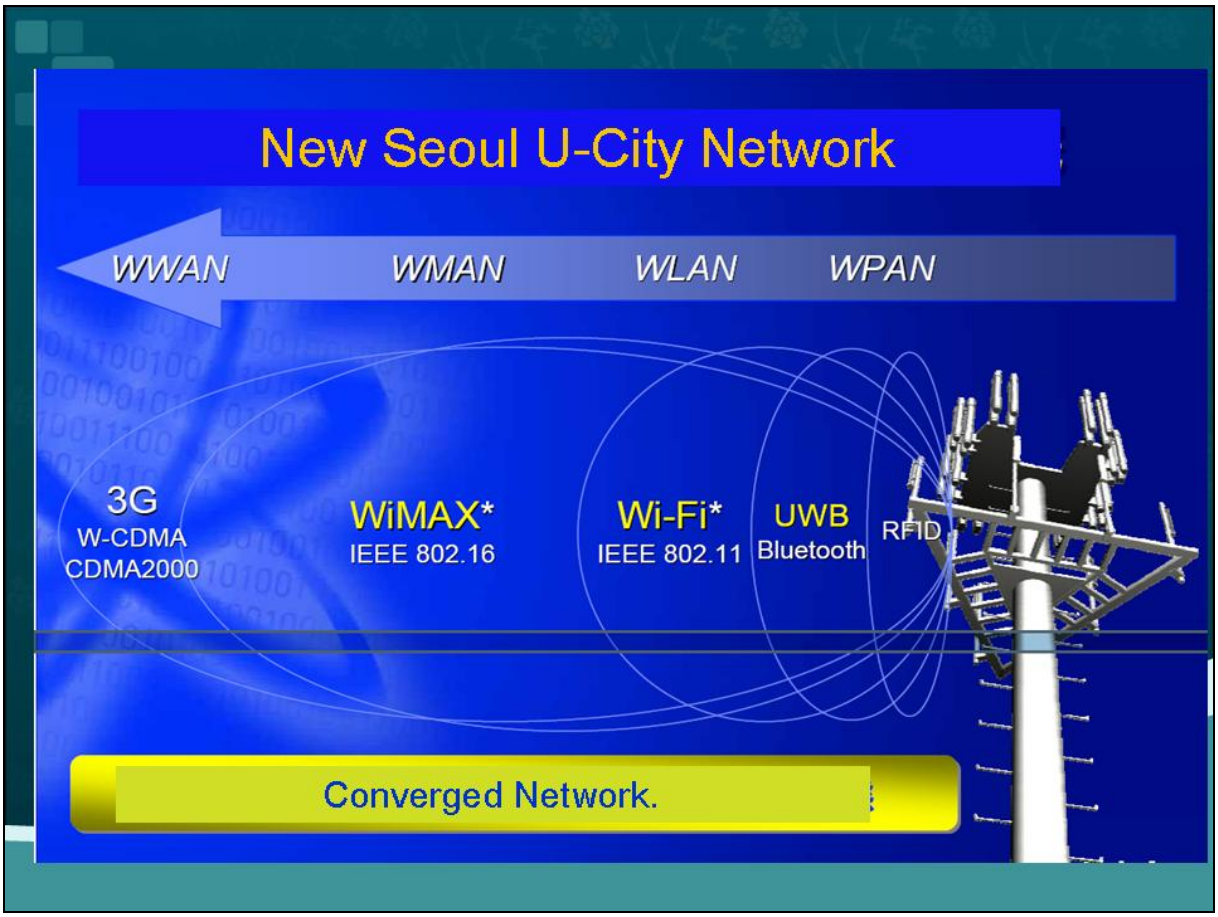



# Cloud & Ubiquitous Computing in Seoul

- Green IT to Meet Energy and Resources Savings for Society Services.
  - Many computer centers throughout Seoul Metropolitan area.
    => Will be abolished.
    => A new IT Complex is built & operated for Cloud & Ubiquitous Computing.
  - It will save energy and resources and make Seoul a Green IT City.

The Smart (Ubiquitous) City Consortium




New Seoul U-City Network
WWAN
WMAN
WLAN
WPAN
3G
W-CDMA
CDMA2000
WiMAX*
IEEE 802.16
Wi-Fi*
IEEE 802.11
UWB
Bluetooth
RFID
Converged Network.


서울시 IT 콤플렉스
Seoul IT Complex
to manage Cloud & Ubiquitous Computing


Seoul IT Complex
to manage Cloud & Ubiquitous Computing


Thank You!

## Presentation by Koji OUCHI

*European Parliament*
*Workshop on Ubiquitous Digital Single Market*

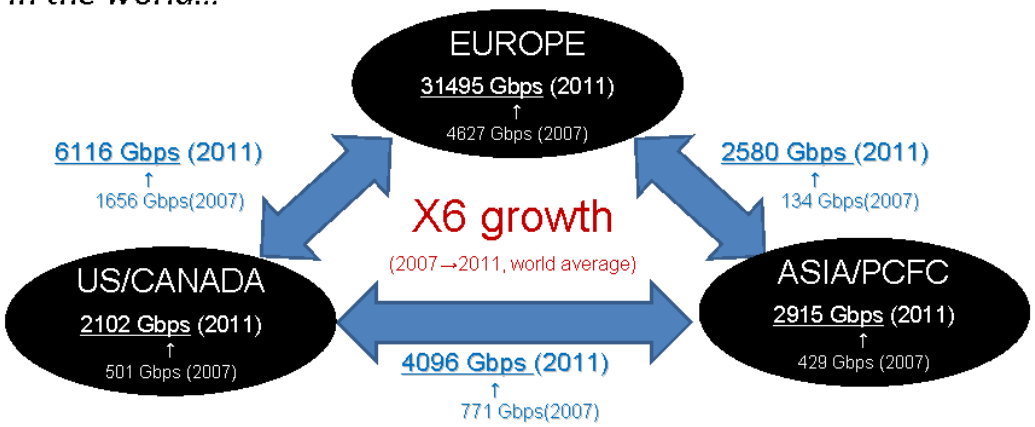
# Ubiquitous Japan

Ubiquitous Government and Society

***Koji Ouchi***
***Mission of Japan to the European Union***
*koji.ouchi@mofa.go.jp*

## *Putting things onto a ubiquitous network basis*

*In the world...*




*In Japan...*

- *Broadband (100% penetration (99.7% by fixed), 65% take-up)*
- *Cloud Computing (33% usage ⇔ 65% in the US)*
- *SNS, Smartphones, M2M*

## ***E-Education***

The positive effects of ICT to education are manifold: for teachers, ICT improves their instruction methods and facilitates interactions among themselves: for children, ICT helps their digital skills as well as overall capacity and learning discipline.

<CASE I> Cloud supporting system in Okinawa

•The City of Miyakojima, Okinawa Prefecture, consists of six islands and the public schools are dispersed among broad and remote area.

•The cloud system has been introduced to support their back-office functions. We have seen positive effects on efficiency of management (ie student list, exam record) and on knowledge sharing. They also can save money and human resources through cloud solutions.

<CASE II> Future School Project

•Ministries of Education and Communications have jointly conducted a series of pilot project since 2010. The idea is to offer a tablet per student and a digital whiteboard per classroom to identify merits and issues of digital education.

•We have found the possibility of customized and interactive education and released a guideline as regularly revised on the best use of ICT on education.

## ***E-Medicine***

ICT plays a growing role in the medical sector. ICT-enabled solutions (ie remote medicine) provide better services which will eventually enhance social benefits. Also, the use of digital tools will improve the quality and safety of medicine while maintaining the management costs even lower.

Evidence finding (MIC, 2012)

•16 items are identified for the quantitative evaluation (ie electronic clinical records, remote medicine, paperless hospitals). The annual benefit is estimated to reach 330 billion yen and it is expected to grow as it penetrates.

•9 items are identified for the qualitative evaluation (ie quality of medical services, bridging the divide between doctors and patients). More evidence is needed to put these items into quantitative evaluation in the future.

<CASE> Electronic Health Record (EHR)

•A cloud platform has been developed that different stakeholders (ie patients, doctors, pharmacists) can safely share their clinical records across regions.

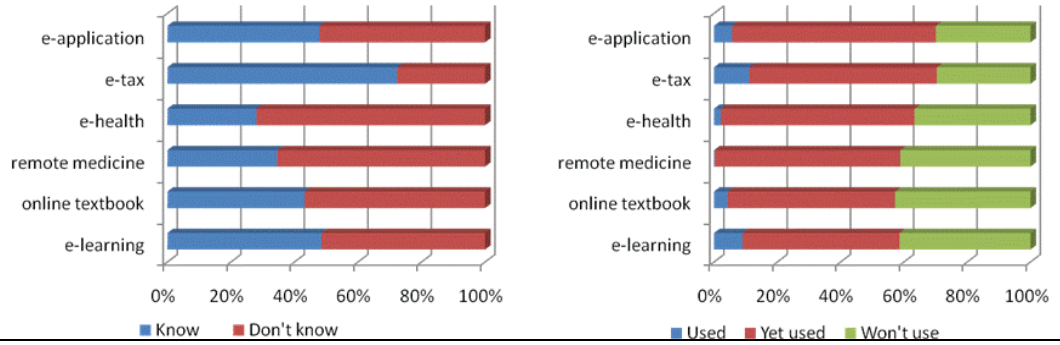
•Research institutions and other public entities can use the anonymized information through EHR for the epidemiological purpose.

## *E-Government*

At the national level, 7,633 public procedures are available online in FY2012, a 42 % decrease since FY2010 due to the stocktaking review on ones with limited access. The rate of actual online usage is 32%.
At the local level, the usage rate is 41%. Authorities are growingly sharing systems for the sake of online services and e-procurement.

Opinion Survey (MIC, 2012)

•While e-taxation draws higher attentions than others, further efforts are needed to improve both knowledge and adoption of ICT-enabled public services.




## *And more*

### ➢ Personal Identification

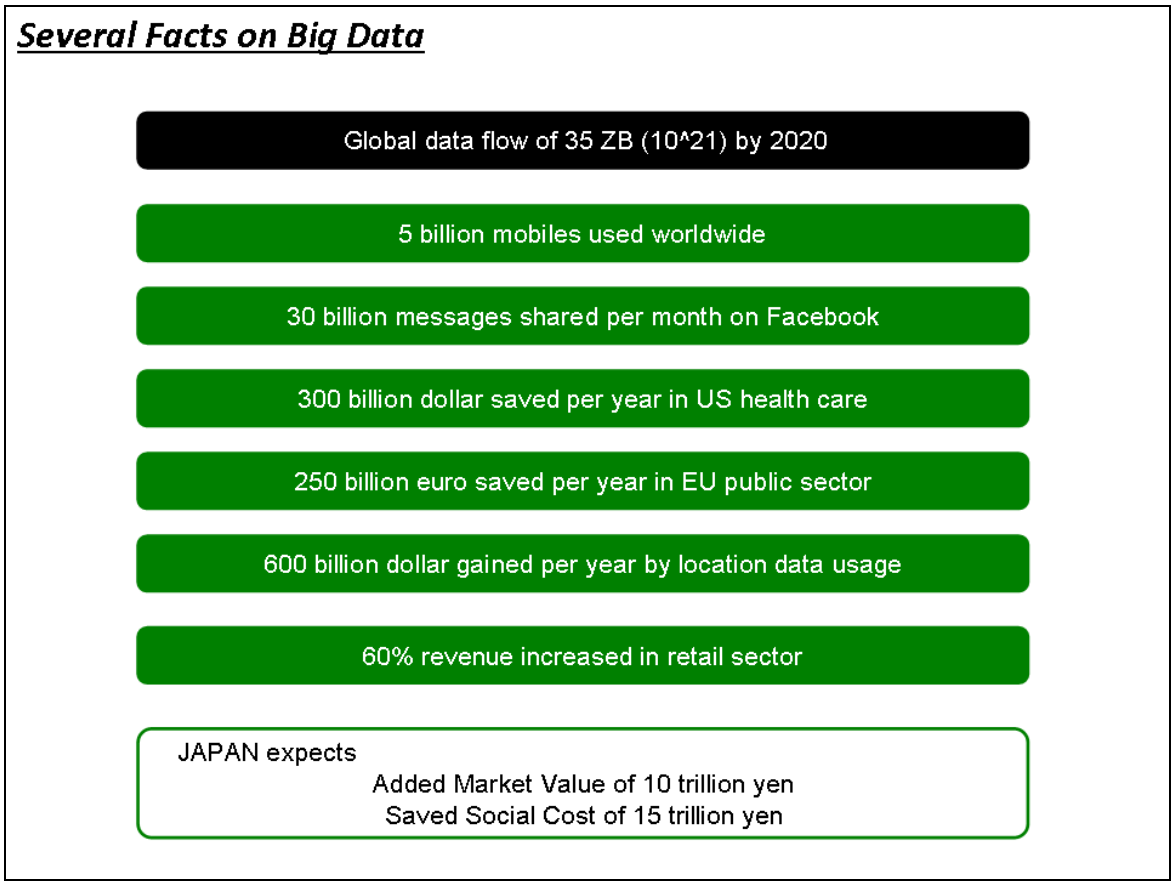
- First covering social welfare and taxation, then to expand.
- Personal data is protected through new mechanism.
- Cloud platform allows for multipurpose utilization.

### ➢ Public Sector Information

- Open Data Strategy (2012)
- Cloud Testbed Consortium (http://e-stat.go.jp)
- Geographical information utilization

### ➢ Big Data

- Massive, diverse and real-time (ie social media, web, censor, log…)
- Promotes innovation and resource optimization
- Addresses societal challenges (ie traffic management)


Several Facts on Big Data
Global data flow of 35 ZB (10^21) by 2020
5 billion mobiles used worldwide
30 billion messages shared per month on Facebook
300 billion dollar saved per year in US health care
250 billion euro saved per year in EU public sector
600 billion dollar gained per year by location data usage
60% revenue increased in retail sector
JAPAN expects
Added Market Value of 10 trillion yen
Saved Social Cost of 15 trillion yen

# Presentation by Catherine DICKSON

## INTRODUCTION

Thank you very much for the kind invitation to speak with you today to provide an overview of Canada's experience to date with e-governance issues. Canada has been providing e-services to our citizens since 2004 and we continue to focus on modernizing government and improving the delivery of services to citizens and businesses securely and in a manner that respects their privacy.

As Canadians, we have a unique advantage. We are a relatively small population in a very large territory (second largest in the world, to be exact). Pragmatically, with such a small population (35 million) we can get our leaders easily into one room to make decisions. But more importantly, as Canadians, we respect each others' differences. We like to solve our problems for the benefit of all Canadians. And that is exactly the approach we are taking to tackling the identity challenges in this new digitally-enabled world.

Specifically, I'll speak to three themes:

- first, the context in which we operate;
- second, our successes so far; and
- third, our way forward for Federating Identity.

## THE ENVIRONMENT

The evidence is telling:

- the average Canadian spends 43.5 hours a month on the Internet – almost twice the worldwide average of 23.1 hours - according to Web research firm comScore Inc.'s
- 89% use credit cards online; and
- 80% of boomers aged 45-64 use the Internet, and Internet use by those aged 65-74 has doubled in recent years

In short, Canadians are quickly moving towards a digital society, and the Internet has evolved to become a critical enabler for the Canadian economy and a major driver of change in both the public and private sectors.

Canadians now expect that online government services are as secure, confidential and user-friendly as they would expect in a physical office setting. And they expect their privacy to be protected.

The Canadian government is responding to the expectations of Canadians. We are streamlining information technology networks, data centres, and e-mail systems.

We are also pursuing opportunities to improve the way we deliver services to Canadians through collaborating with other jurisdictions, (our Provinces and Territories), and, with the private sector (such as the banks and telcos).

The reality today, however, is that governments still delivers services to citizens and businesses independently, making it time consuming and costly for citizens and businesses to navigate across multiple departments to get the services they need.

We are hard at work to find a way to changing this traditional model of service delivery – moving away from the stovepipe approache and aiming to achieve a future where the citizens become the centre of their own service delivery model.

Federating identity is major stepping stone towards achieving a citizen-centric model. Identity is at the heart of public administration and government services. Federating identity is about trusting identity information between organizations and accepting an identity established by another department, jurisdiction, or even another country.

## WHAT WE'VE ACHIEVED SO FAR

When Canada first started putting its government services online through Government On-Line, our goal was to become the government most connected to its citizens therefore providing Canadians with access to all government information and services online at a time and place of their choosing.

We have been successful in achieving this initial goal and a great deal of our success was the result of collaboration with the provincial and territorial partners and the private sector to improve the many ways we serve Canadians.

However, as everyone is this workshop is aware, the online service delivery paradigm continues to evolve. It's no longer just about moving service transactions online; it's about building relationships of trust and digitally-enabling every aspect of daily life. You only need to look as far as your mobile smart phone or tablet to appreciate how these new technologies have changed since this rise of the browser.

One of the greatest risks we face as governments is not keeping up with advances in technology and citizens' expectations which requires continually improving the delivery of government services at lower cost, with higher service quality and having broader reach to all Canadians.

As transactions become "higher in value", that is, in terms of increasing and valuable personal information involved in the transaction, our confidence relies heavily on knowing who is really on the other side of the transaction. Are you dealing with the same person you did yesterday? Do you really know who this person is? Is this person really who they say they are?

In 2008, Canada began to review its approach to authentication and what we called the Cyber Authentication Renewal strategy was developed. This strategy set out several foundational principles that shaped the future of authentication solutions for the Government of Canada. The key principles outlined in this strategy were simple yet fundamental:

- separation of identity from credential or authentication,
- use standardised technology components and services;
- allow for multiple levels of assurance to manage different levels of risk depending upon the sensitivity of the transaction;
- enable multiple service providers; and finally,
- provide a flexible and seamless experience for Canadians who should have a choice of online authentication service provider.

In December of 2012, the Government of Canada successfully completed its **Federation of Credentials Phase** resulting two new authentication services available to Canadians:

- the **Credential Broker Service** that will enable Canadians to use their online authentication previously issued to them by their financial institutions; and,
- **GCKey**, for Canadians who wish to use online credentials issued by the Government of Canada.

Since then we have witnessed a dramatic uptake of these services:

- Over 400,000 Canadians are using the **Credential Broker Service**, meaning they are using their bank credentials to securely access Government of Canada Services
- Over 1.4 million individuals are using **GCKey** to access services. It should be noted that GCKey is available to non-Canadians, such as those who are applying online for immigration.

## PATH FORWARD: FEDERATING IDENTITY

Canada is now moving into the next major phase: Federating Identity.

Federating identity is about trusting identities that have been established by other jurisdictions. It's about trusting the identity information provided by an individual requesting a government service: trusting that the information is accurate and that the individual is using their own identity information.

Federating identity is crucial for government because so many valued downstream services and benefits depend on identity. Solutions must be found to ensure that an individual is using their real name or using their own legitimate documents and to ensure their privacy. This is difficult to do in the physical world; it is that more challenging in the online world.

Work to date has concluded that in order for Canadians to maintain confidence in the digital economy, they need to know with whom they are dealing online, where identification is accomplished digitally, without paper documents or face-to-face visits, and in a way that protects sensitive information, uses an "ask me once" approach, and respects the privacy of the individual.

We are in the process of establishing a Digital Identification and Authentication Council (DIAC) which will include representatives of the public and private sector membership to underpin a modernised payments system and be an anchor to the modernization of service delivery throughout the Canadian economy while respecting Canadians' privacy

In this next phase, will incorporate a pan-Canadian approach, whereby different jurisdictions should be able to rely on one another to securely authenticate individuals online regardless of the originating jurisdiction and using trusted online credentials issued by trusted partners.

Today, within the federal government and across the provinces, territories and municipalities, the formalization of federating identity has begun. A pan Canadian assurance model has been developed in collaboration with the different Canadian jurisdictions, and represents a foundation for agreement and interoperability. Building on this model, Canada is developing policy instruments to ensure consistent identity practices across federal departments and which will support federating identity between departments and with other jurisdictions.

We are optimistic that in the near future a citizen will be able to use their secure provincial or territorial credential — such as their provincial health card — to access federal government online services. Alternatively, provincial and territorial programs and services could benefit from relying upon identity assurances generated within the federal government.

This federated model enables the government to confidently offer high-value online programs and services in a secure way. It also makes it easier for users to access and move between different orders of government services without the need to re-identify themselves.

## CONCLUSION

From Government On-Line to Cyber Authentication Renewal and finally to Federating Identity, Canada is evolving its strategy to support Canada advance as a digital society.

There's no doubt that we are in the midst of rapid technological change. These changes hold exciting opportunities for governments to transform the way they serve their citizens. In moving forward, Canada will continue to earn the trust of Canadians through the delivery of online services while respecting privacy, ensuring security and providing choice.

Thank you for your attention.

## ADDITIONAL READING

Links to publicly available documents

The Treasury Board Secretariat paper: Federating Identity Management in the Government of Canada: A Backgrounder: http://www.tbs-sct.gc.ca/sim-gsi/si-is/docs/ident-eng.asp

TBS Policy Instruments

Standard on Identity and Credential Assurance
http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=26776

Guideline on Defining Authentication Requirements
http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=26262

The link to the Pan-Canadian Paper on Trusting Identities that was finalised May 2011
http://www.iccs-isac.org/en/km/transformative/pdf/trust.asp

The Pan-Canadian Assurance Model –the document and accompanying workshop slides:
http://www.iccs-isac.org/en/km/transformative/pdf/assurance.asp

The links to the final report of the Task Force for the Payments System Review, entitled Moving Canada into the Digital Age.
http://www.fin.gc.ca/n12/12-030-eng.asp (English)
http://www.fin.gc.ca/n12/12-030-fra.asp (French)

The supporting discussion papers, specifically – Going Digital: Transitioning to Digital Payments – Chapter 5 which has the discussion on Digital Identity. It can be found at these links:
http://paymentsystemreview.ca/wp-content/themes/psr-esp-hub/documents/r03_eng.pdf (English)
http://paymentsystemreview.ca/wp-content/themes/psr-esp-hub/documents/r03_fra.pdf (French)

## Presentation by Henri RAUCH

# Ubiquitous governance in the Netherlands

Workshop on "Ubiquitous Digital Single Market"
Monday 13 May 2013

henri.rauch@kinggemeenten.nl
**National Expert**
**KING Quality Institute NL Municipalities**

EP IMCO Committee Workshop 13 May 2013 : Slide 1

## What is the rational behind 'Closed' Government Cloud?

- Prevent lag Gov IT
- Lock-in
- Energy spill
- Technology Push
- Request NL Parliament



- 2012: NL Government Cloud Strategy
  - Information Security Concerns
  - Privacy Concerns
  - Advantages related to Multi-tenancy: first 80% is enough...
  - Combine it with Comply-or-explain policy
  - Develop Community Cloud with Gov as User & Delivery

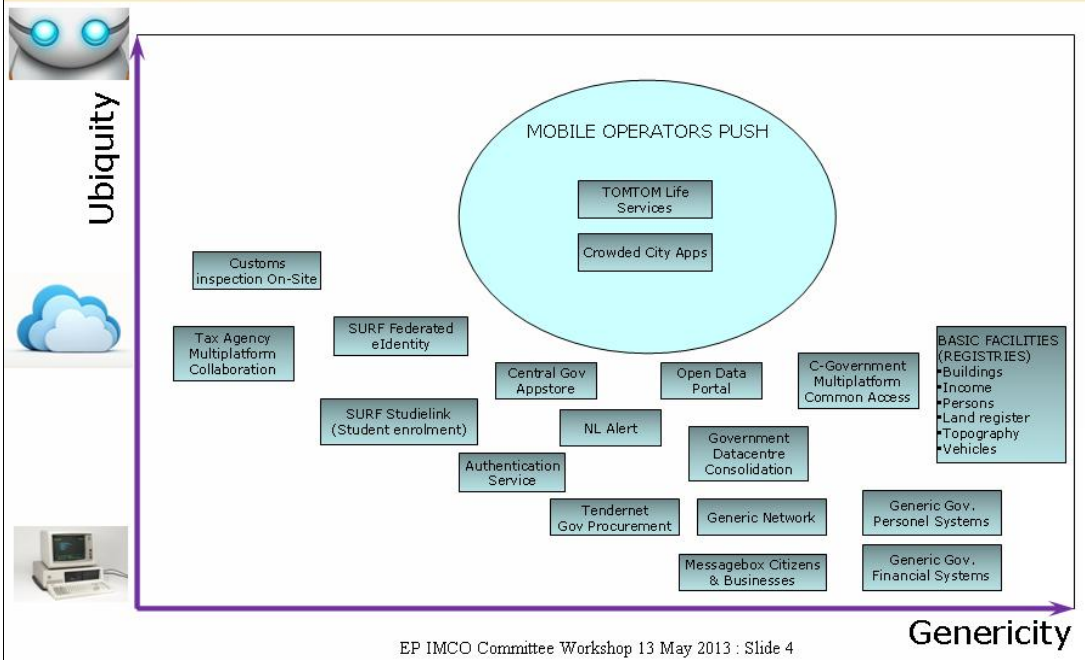
EP IMCO Committee Workshop 13 May 2013 : Slide 2

## Impact on NL governance

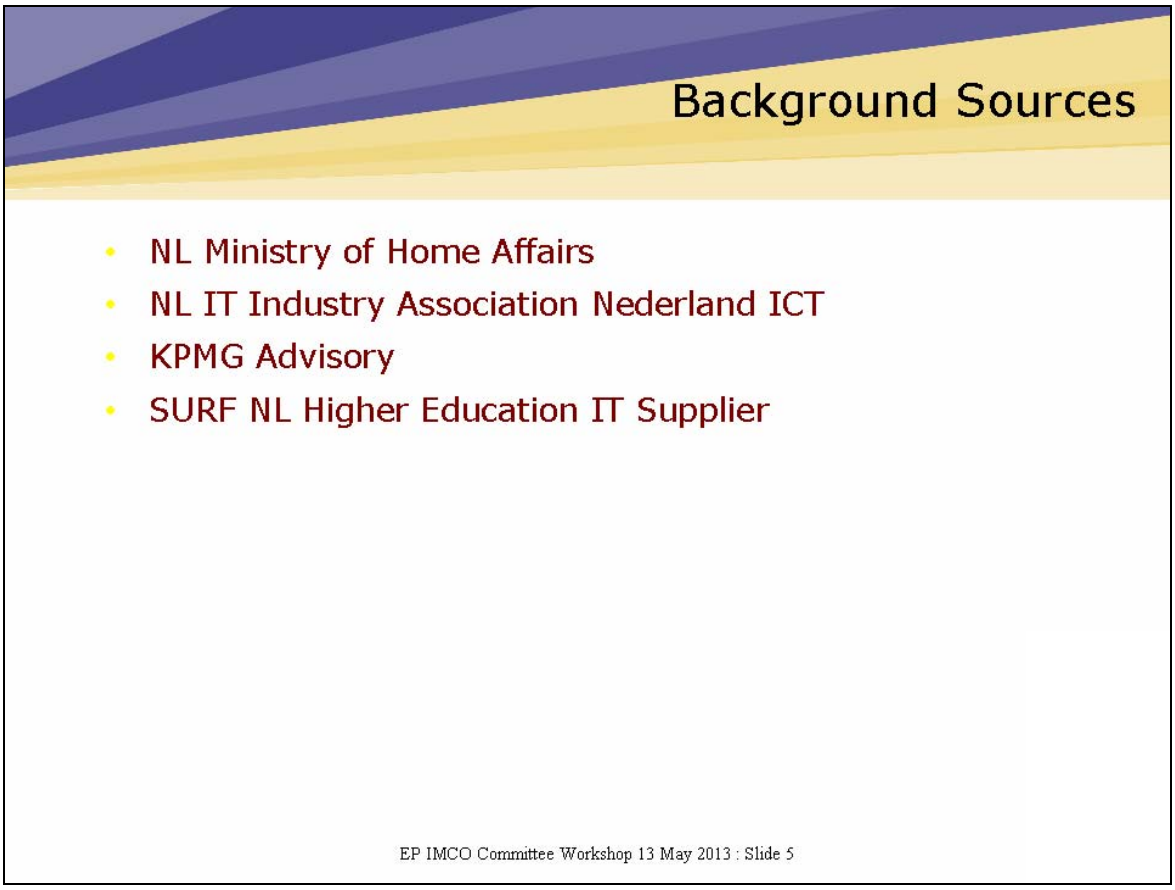
- Compact Government Services
  - Defragmntation; Bundling of government demand market
  - Benefit and risk sharing between procurers & suppliers
  - Search for radical improvements to the quality and efficiency of public services, with breakthrough solutions
- Coordinating Policies
  - Government Cloud Strategy
  - Information Security Policy
  - Open Data Policy
- European Cloud Platform
  - Better collaboration bundling demand & suppliers markets
  - Defining joint strategies participating actively in ECP

EP IMCO Committee Workshop 13 May 2013 : Slide 3

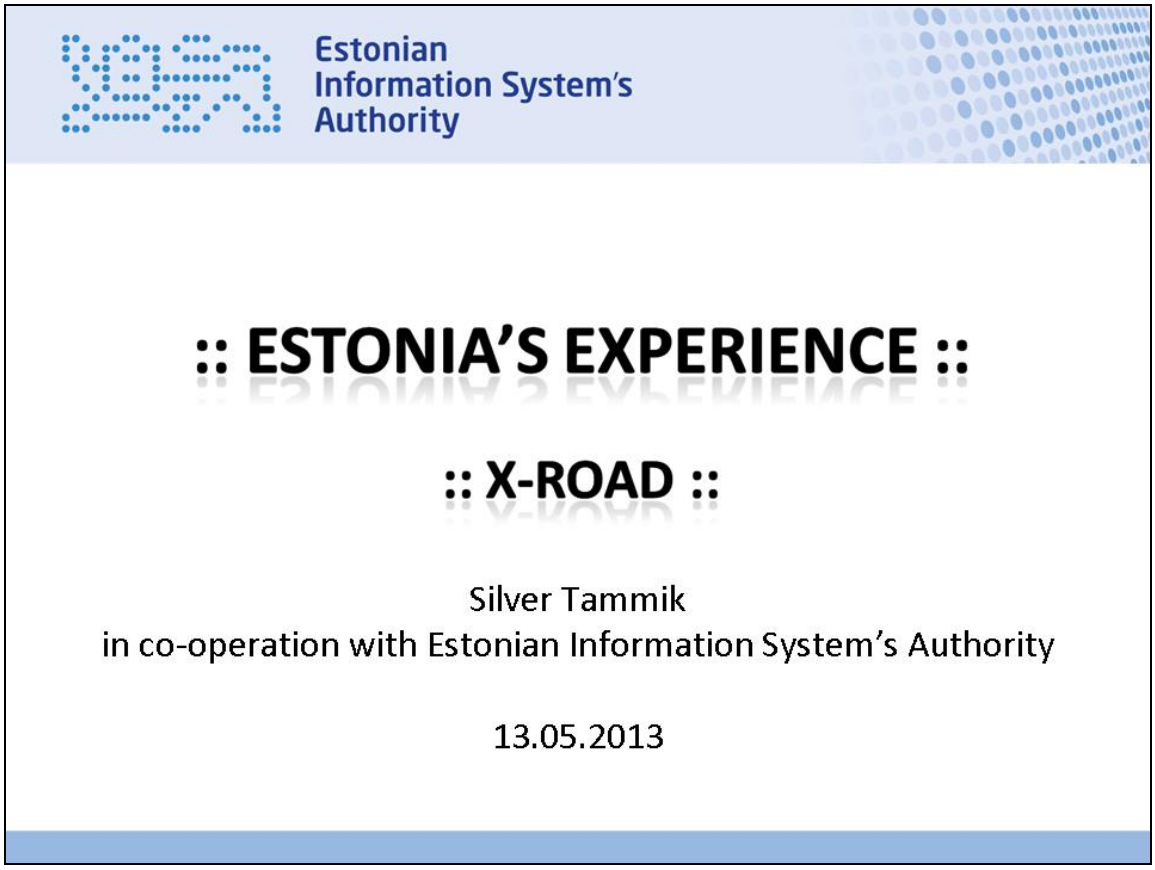
## NL Government Ubiquity - Mapping

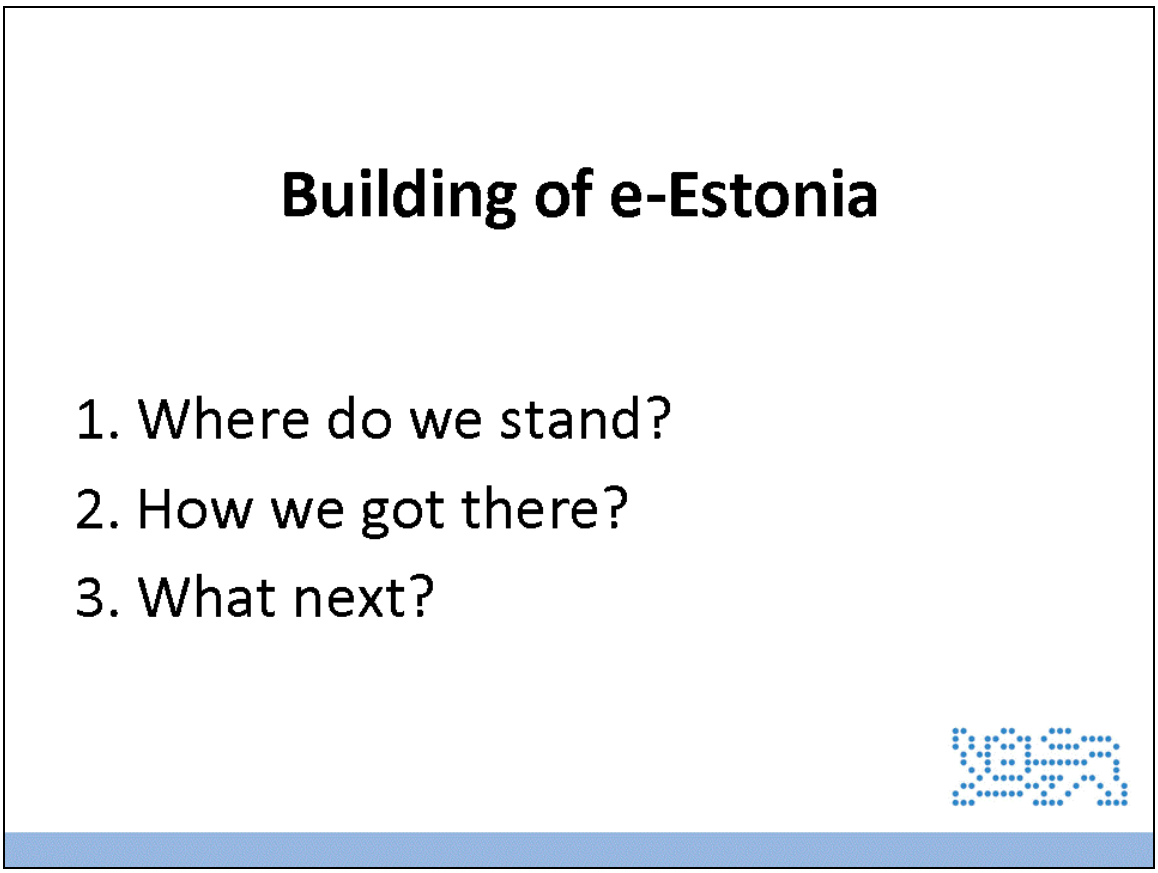



EP IMCO Committee Workshop 13 May 2013 : Slide 4


Background Sources
NL Ministry of Home Affairs
NL IT Industry Association Nederland ICT
KPMG Advisory
SURF NL Higher Education IT Supplier
EP IMCO Committee Workshop 13 May 2013 : Slide 5

## Presentation by Silver TAMMIK



# Where do we stand?

# Some components

eTickets

**eHealth**

**eTax-Board**

ePolice

eAgriculture

eCompany registration

M-Parking

eCar registration

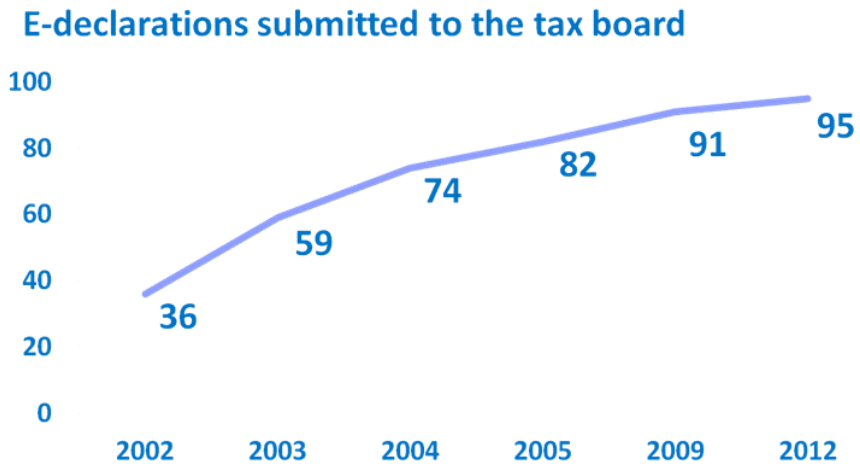
eFile

eSchool

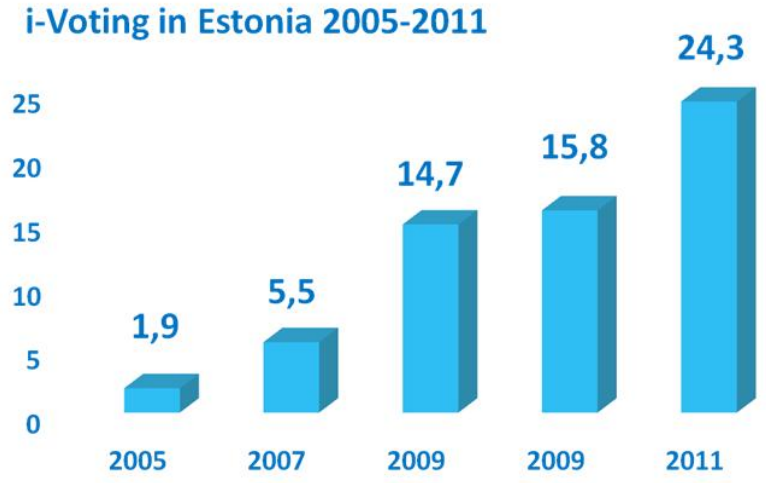
…

eParental benefits

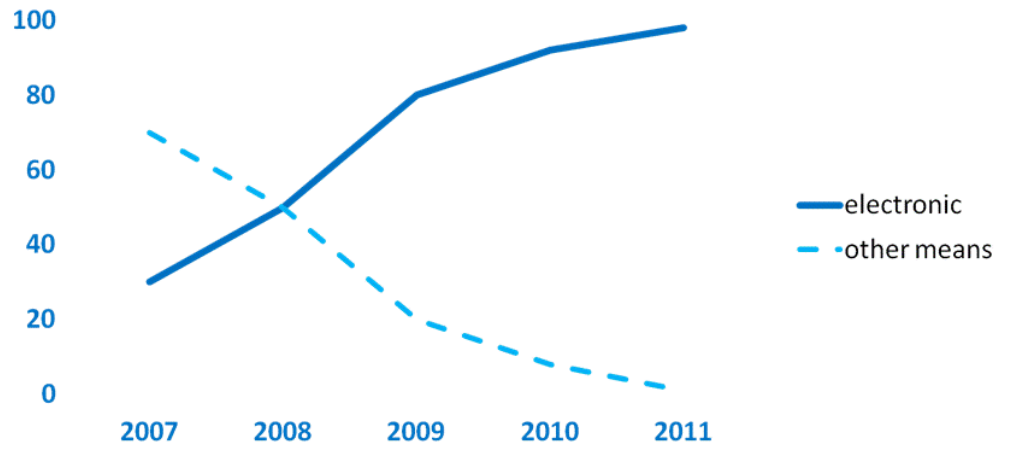
# e-Tax board




# i-Voting



# E-Business Register



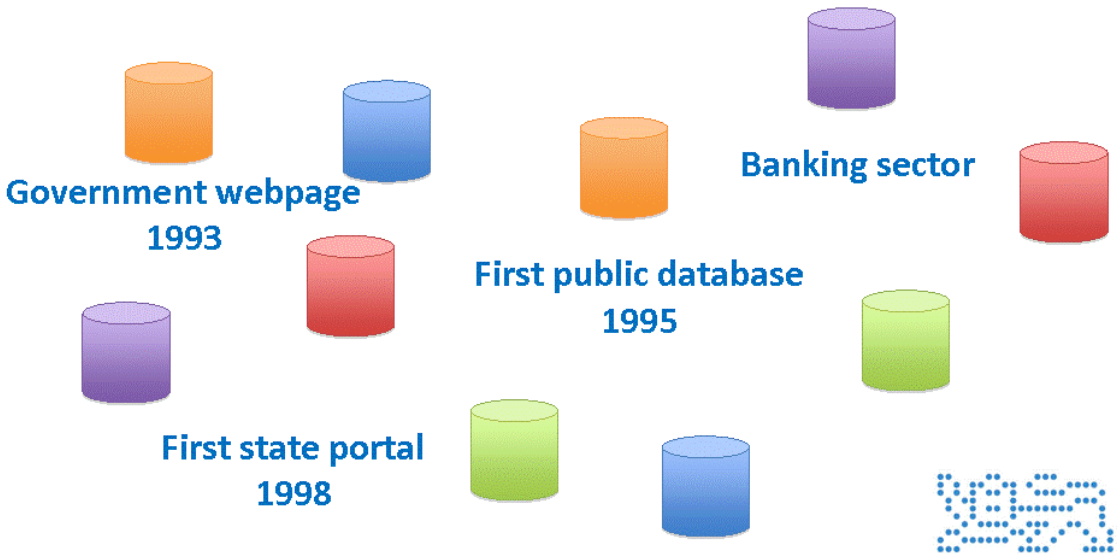

# Some additional examples

- Annual reporting for companies **100%** on-line
- **99%** financial transactions carried out electronically
- **95%** of all prescriptions electronically
- **95%** higher secondary students use eSchool
- **90%** fishing permits given out electronically
- etc

# How we got there?

# 1990s

Emerging IT systems and databases

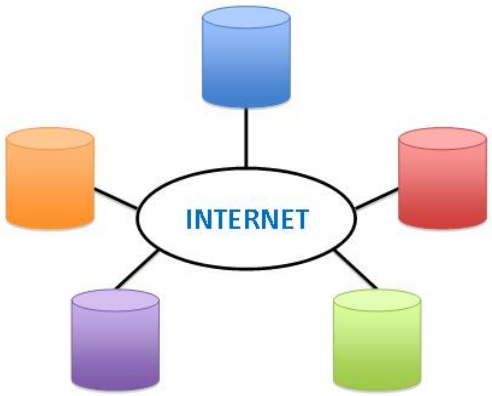


# Common Challanges

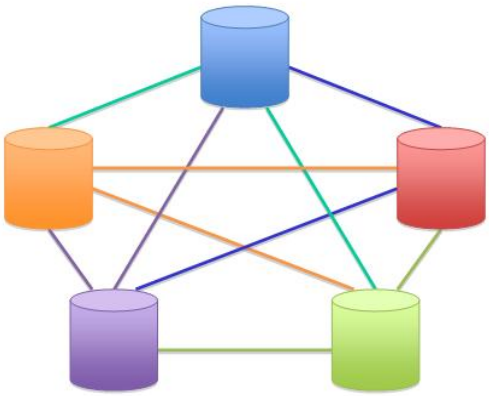
•**Authentication** and **authorization** of people in digital environment + **digital signature** – **eID**

•**Secure/standardized** identification and **data exchange** of information systems – **X-Road**

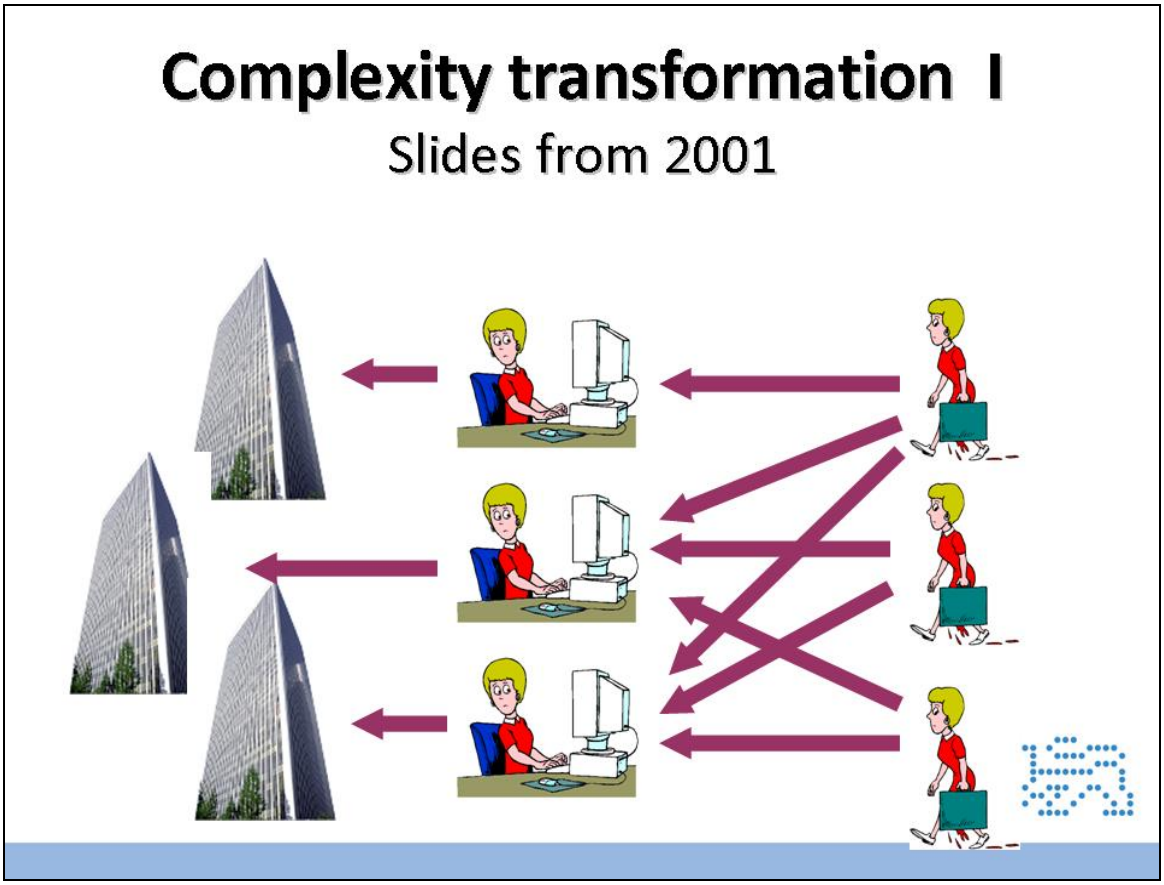
# Common solution

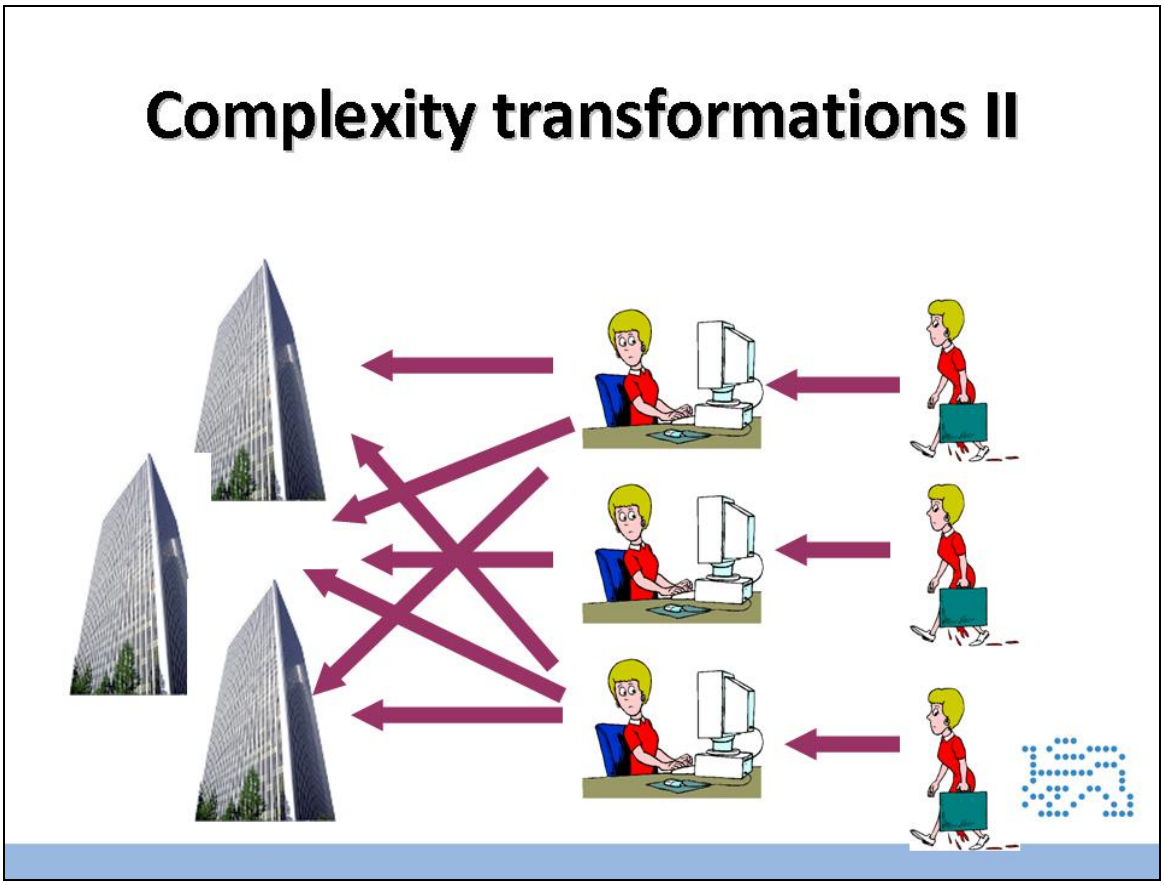



**Multilateral solution**

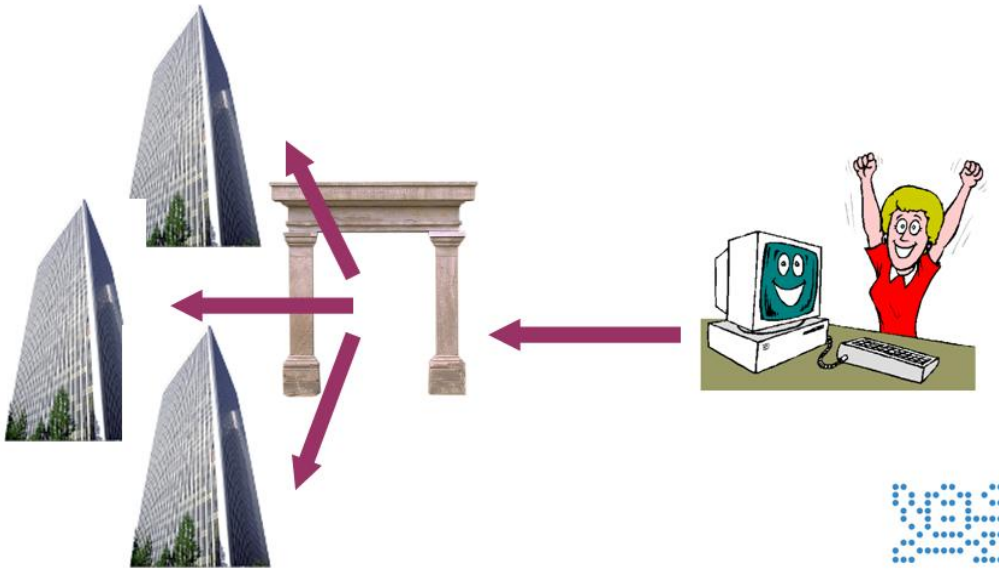


**Bilateral solutions**


Complexity transformation I
Slides from 2001

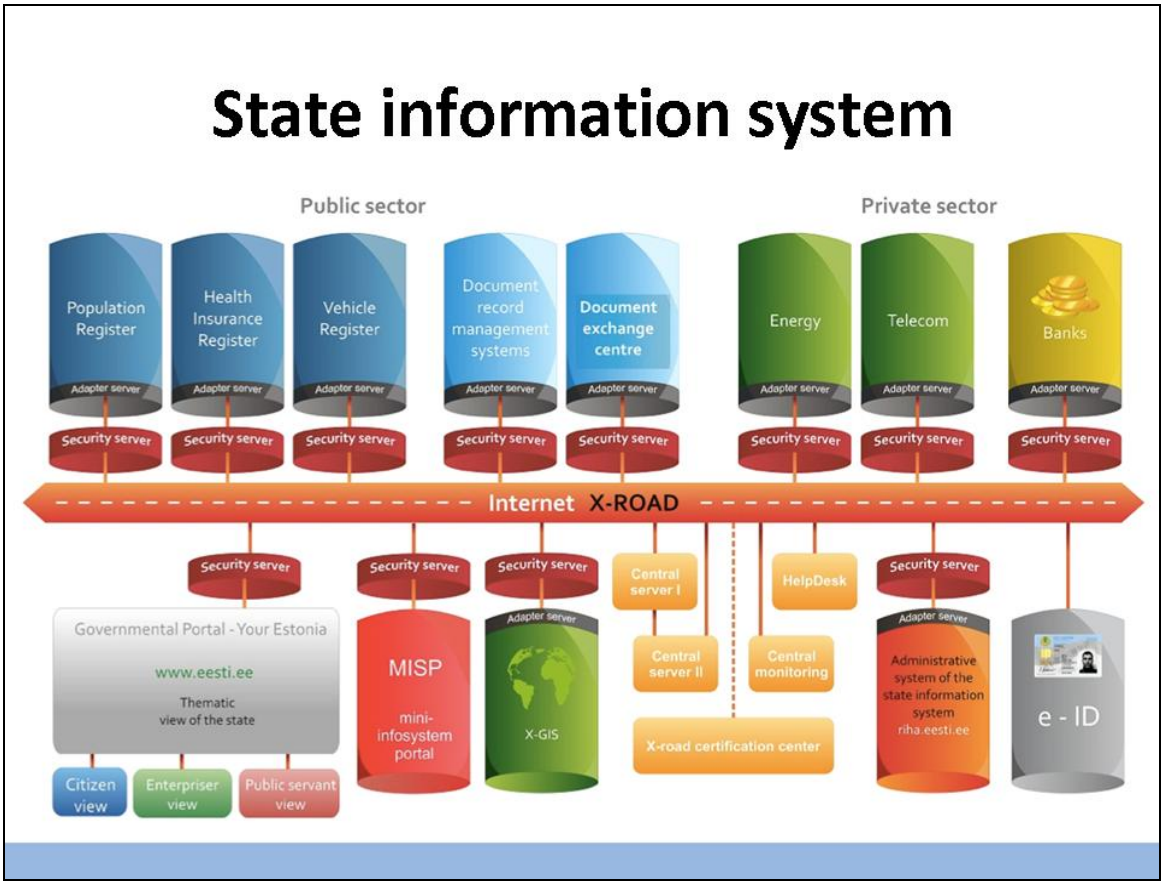

Complexity transformations II

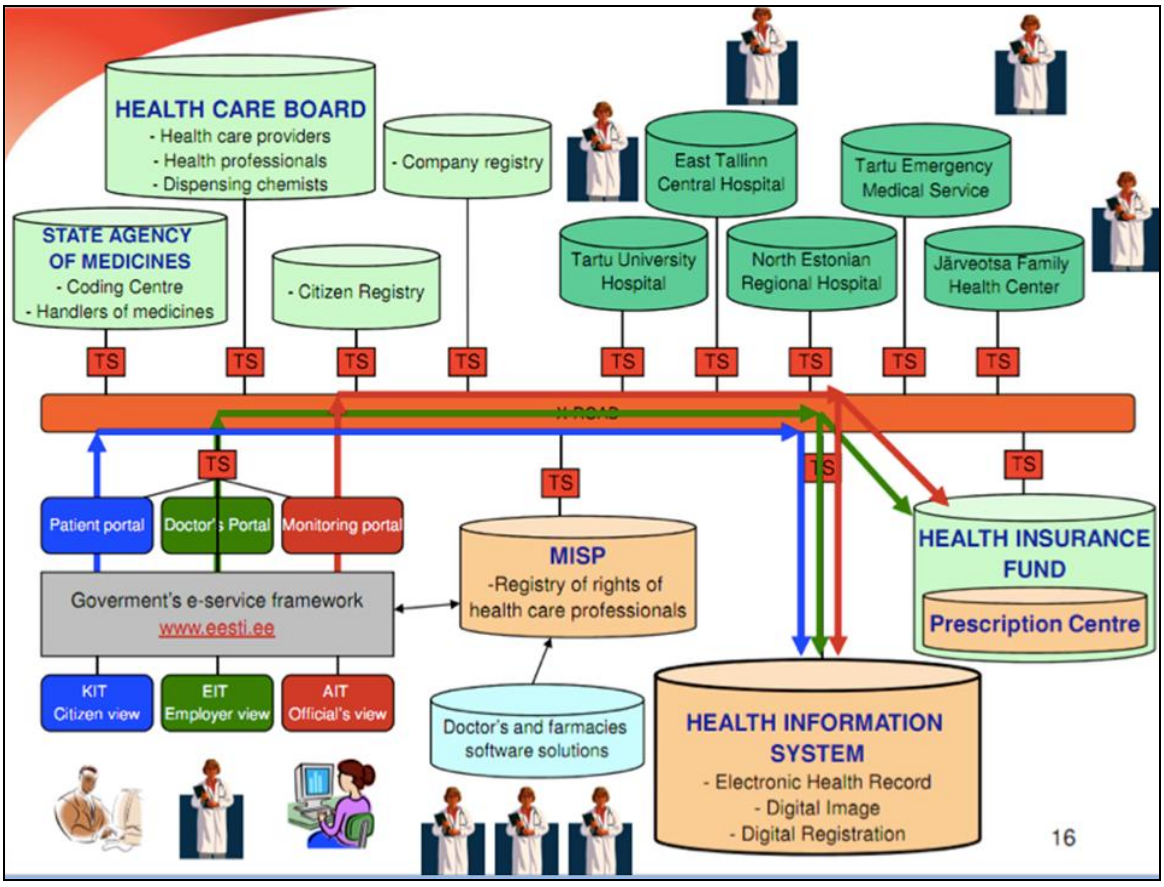
# Complexity transformations III



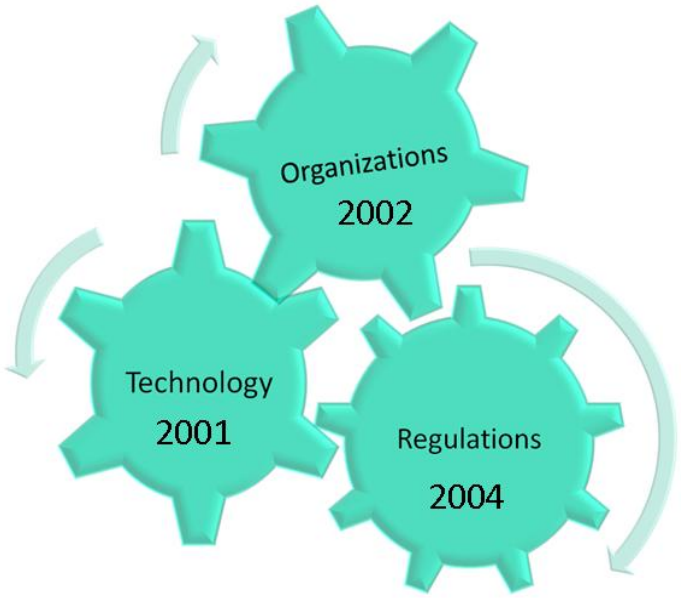
# National chip-based Identity Card

- Start of issue: **January 1, 2002**
- **Compulsory**, passport is not
- Allows the development of **secure** e-services
- Can be **used in any system**, public or private
- more than **1.1 million** active e-ID cards
- More than **115 million** digital signatures
- More than **190 million** authentications


State information system
Public sector
Private sector
Population Register
Health Insurance Register
Vehicle Register
Document record management systems
Document exchange centre
Energy
Telecom
Banks
Adapter server
Security server
Internet X-ROAD
Governmental Portal - Your Estonia
www.eesti.ee
Thematic view of the state
Citizen view
Enterpriser view
Public servant view
MISP
mini-infosystem portal
X-GIS
Central server I
Central server II
Central monitoring
X-road certification center
HelpDesk
Administrative system of the state information system
riha.eesti.ee
e - ID

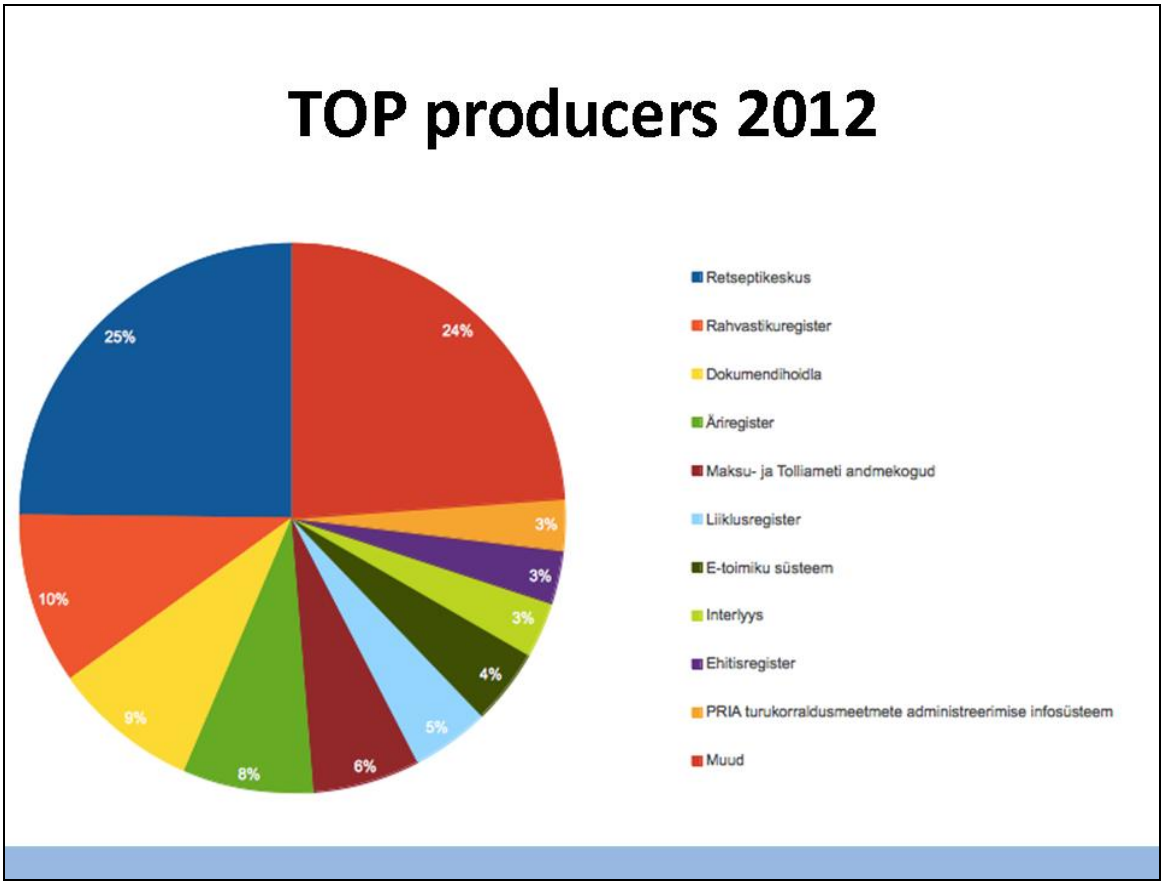

HEALTH CARE BOARD
- Health care providers
- Health professionals
- Dispensing chemists
- Company registry
STATE AGENCY OF MEDICINES
- Coding Centre
- Handlers of medicines
- Citizen Registry
East Tallinn Central Hospital
Tartu Emergency Medical Service
Tartu University Hospital
North Estonian Regional Hospital
Järveotsa Family Health Center
TS
X-ROAD
Patient portal
Doctor's Portal
Monitoring portal
Goverment's e-service framework
www.eesti.ee
KIT Citizen view
EIT Employer view
AIT Official's view
MISP
-Registry of rights of health care professionals
Doctor's and farmacies software solutions
HEALTH INSURANCE FUND
Prescription Centre
HEALTH INFORMATION SYSTEM
- Electronic Health Record
- Digital Image
- Digital Registration
16

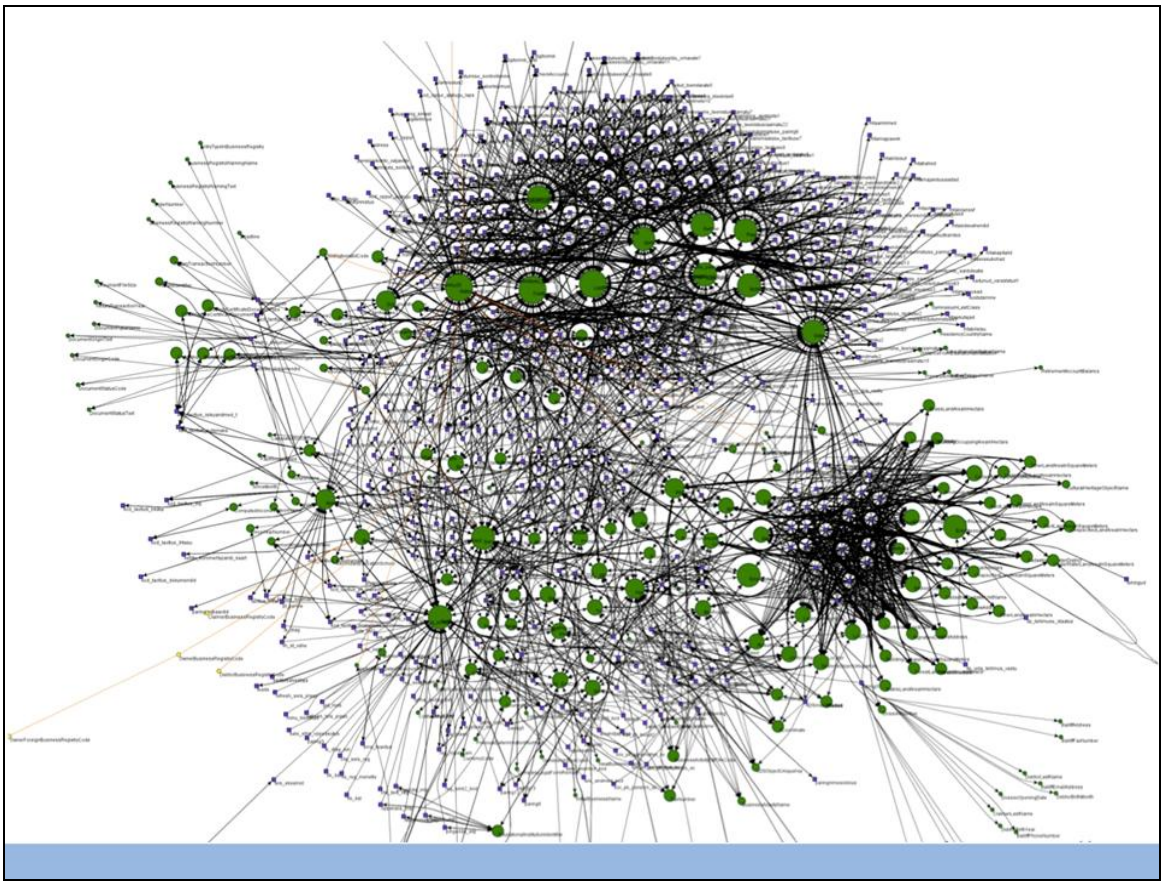
# X-Road is not only technology




# Situation today – x-road

- X-Road launched in Estonia **in 2002**
- More than **170 databases** are offering services via X-Road (producer certificates)
- More than **3000 services** are available
- More than **900 organisations** are using X-Road daily (consumer certificates)
- More than **50% of citizens** are using X-Road via Citizen portal
- **Most of companies (~160 000)** are used X-Road via Entrepreneur portal
- **~1 000 000 transactions** per day


TOP producers 2012
25%
24%
3%
3%
3%
4%
5%
6%
8%
9%
10%
Retseptikeskus
Rahvastikuregister
Dokumendihoidla
Äriregister
Maksu- ja Tolliameti andmekogud
Liiklusregister
E-toimiku süsteem
Interlyys
Ehitisregister
PRIA turukorraldusmeetmete administreerimise infosüsteem
Muud



# What next?

# Enablers are already there

- **eID** - third countries, non-residents
- **X-Road** – simplification, cross-border
- **Gateways** (eesti.ee) – userfriendliness
- **Interoperability** framework
- Availability of digital **information**
- **Services** – focus on integrated solutions and quality

**Constant monitoring and piloting of new trends and solutions – mobile, cloud etc**

# X-Road Europe - International

**Development** environment

(unreal organizations – unreal data)


**Test** environment

(real organizations – unreal data)


**Production** environment

(real organizations – real data)


# Some considerations

- **Change in governance** – e-services are not copies of paper world procedures
- **Users attitude**– why not digitally?
- **Think globally** – at least nation wide
- Role of the **private sector** – let the ideas in!
- Political **commitment** – not only technology, but also organization and regulation

# Thank you!

http://e-estonia.com/

https://www.ria.ee/en/

https://www.eesti.ee/eng

E-mail: ria@ria.ee

## Presentation by Nicola WESTMORE

HM Government | G-Cloud

# UK's G-Cloud Project

13 May 2013

Nicola Westmore, Deputy Programme Director

UNCLASSIFIED

HM Government | G-Cloud

## Challenges

The UK Public Sector is facing hugely complex, inter-departmental challenges

We need to deliver a 21st century infrastructure to solve these challenges and seize opportunities to work more efficiently, flexibly, and responsively

HM Government | G-Cloud

## Where were [*are*] we?

- Austerity – no change on the horizon
- Stuck in large contracts 80% of Central Gov ICT controlled by 6 companies
- High system and running costs
- Difficult to iterate / reuse
- Lack of real competition
- Huge bill £16 billion p.a.


3

HM Government | G-Cloud

## G-Cloud vision

- Public Cloud First
  Multi-tenanted
- Commodity solutions
- Pay-as-you-go and friction free – easy in and easy out of contracts
- Rapid elasticity- up/down
- On-demand self-service
- Easily Accessible

"G-Cloud has shown itself to be a model for efficient public sector IT procurement, establishing a dynamic marketplace for cloud based IT service"

Francis Maude
Minister for Cabinet Office

4

HM Government | G-Cloud

# The G-Cloud Programme

- G-Cloud is the UK Government Programme to encourage adoption of cloud-based services
- G-Cloud covers the processes of buying, managing and using cloud services

How do we change the way we commission and use IT? How do we encourage the shift away from custom to commodity?

- Develop a marketplace
- Simplify how we buy & deliver services
- Provide access to a wider choice
- Encourage innovation
- Encourage change in culture

HM Government | G-Cloud

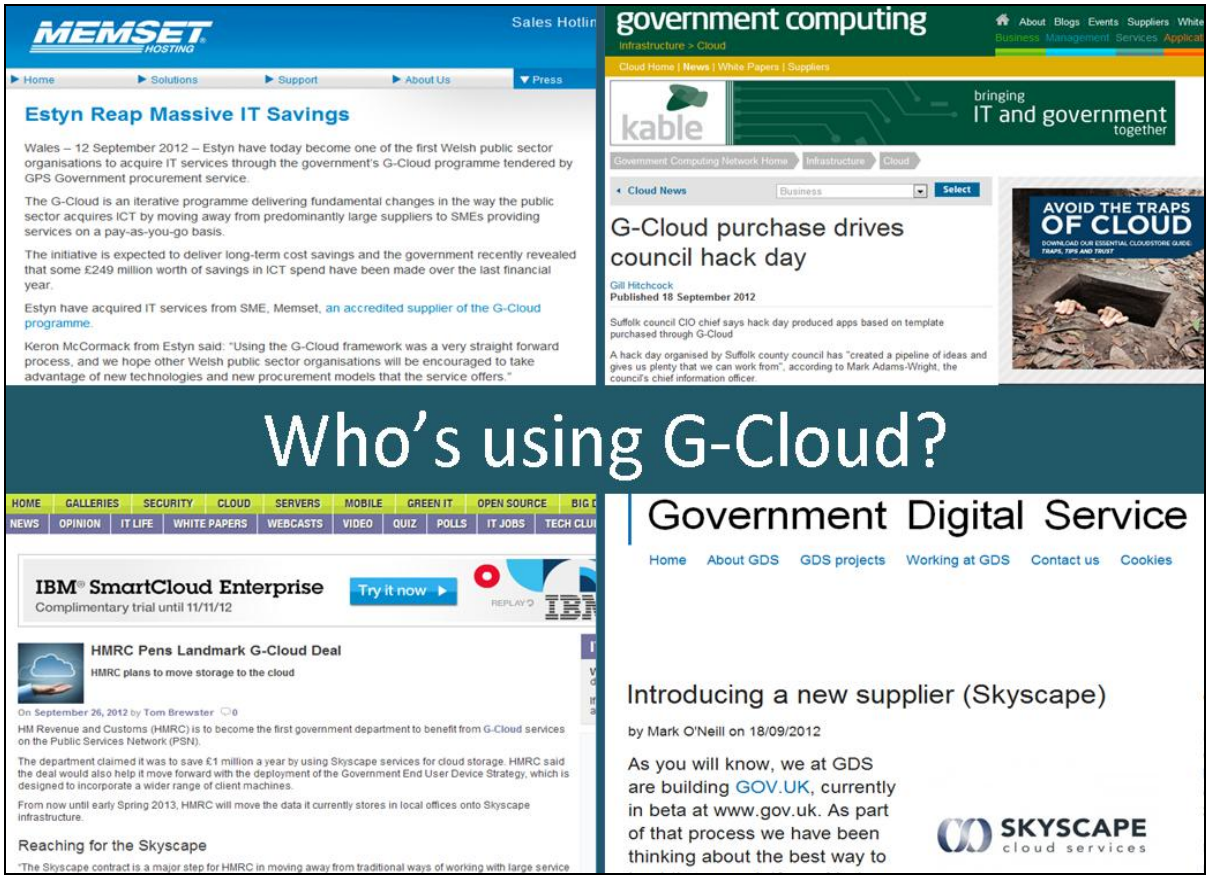
# G-Cloud Programme:

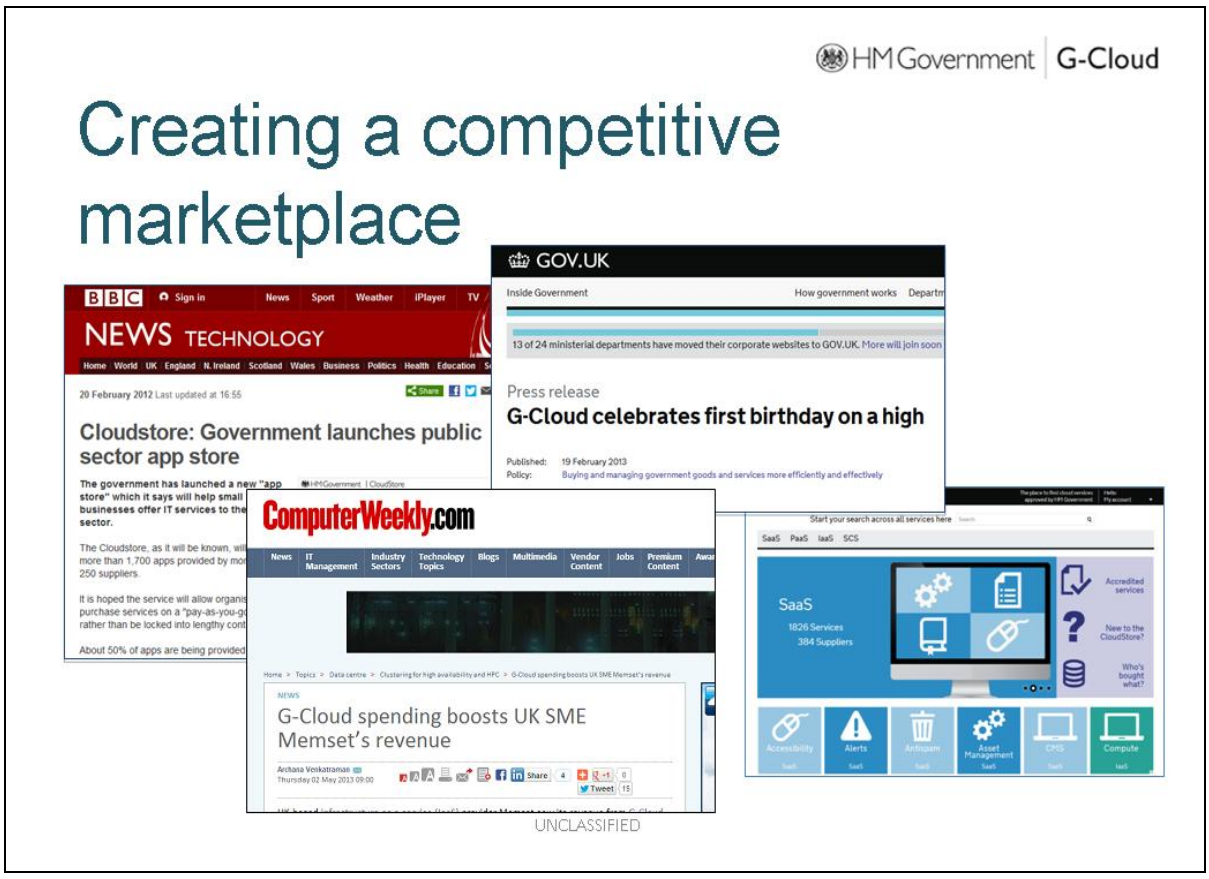
Our aim is to encourage the adoption of cloud-based services across the Public Sector

| Sales | SME Vol | SME Sales |
|---|---|---|
| £18.2m to end of Mar | 80% vol of orders | 70% of spend |

- Phase 1 complete: 1st anniversary; open and competitive marketplace
- **800+ suppliers and 7,000 + services provide access to a much wider choice**
- We've made it a lot easier for buyers
- **We've made it a lot easier for suppliers; we're levelling the playing field for SMEs**
- We're getting the message out; we're changing the market for public sector IT
- **Public Cloud First announced**

80%+ SMEs


MEMSET HOSTING
Estyn Reap Massive IT Savings
government computing
G-Cloud purchase drives council hack day
AVOID THE TRAPS OF CLOUD
Who's using G-Cloud?
IBM SmartCloud Enterprise
Try it now
HMRC Pens Landmark G-Cloud Deal
Government Digital Service
Introducing a new supplier (Skyscape)
SKYSCAPE cloud services


HM Government | G-Cloud
Creating a competitive marketplace
GOV.UK
G-Cloud celebrates first birthday on a high
NEWS TECHNOLOGY
Cloudstore: Government launches public sector app store
ComputerWeekly.com
G-Cloud spending boosts UK SME Memset's revenue
SaaS
1826 Services
384 Suppliers
UNCLASSIFIED

HM Government | G-Cloud

# G-Cloud: the benefits

| | |
|---|---|
| Easy to buy | • No OJEUs or long procurements necessary<br>• Compliant, self-service online CloudStore |
| Transparency | • Services, prices & commercial terms all online<br>• Driving competition – open marketplace |
| Significant savings | • Elastic pay-as-you-go, up to 90% savings<br>• No need to spend £m's to keep the "lights on" |
| Agile & Responsive | • Reducing deployment time<br>• Ability to meet changing user needs |

9

HM Government | G-Cloud

## Immediate focus

1. Policy & Promotion
2. Develop the vision
3. Address barriers
4. Self-service market

# Opportunities for growth

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HM Government | G-Cloud

# Contacts

http://gcloud.civilservice.gov.uk

enquiries@gcloud.cabinet-office.gov.uk

**@G_Cloud_UK**

**#GCloudJoinIn**

**#CloudStore**

12

**Presentation by Mark LANGE**

# Developing private and public ubiquitous solutions for the Digital Single Market

Mark Lange

Director, EU Institutional Relations
Microsoft Legal and Corporate Affairs Europe
13 May 2013

Microsoft


"A computer on every desk and in every home"

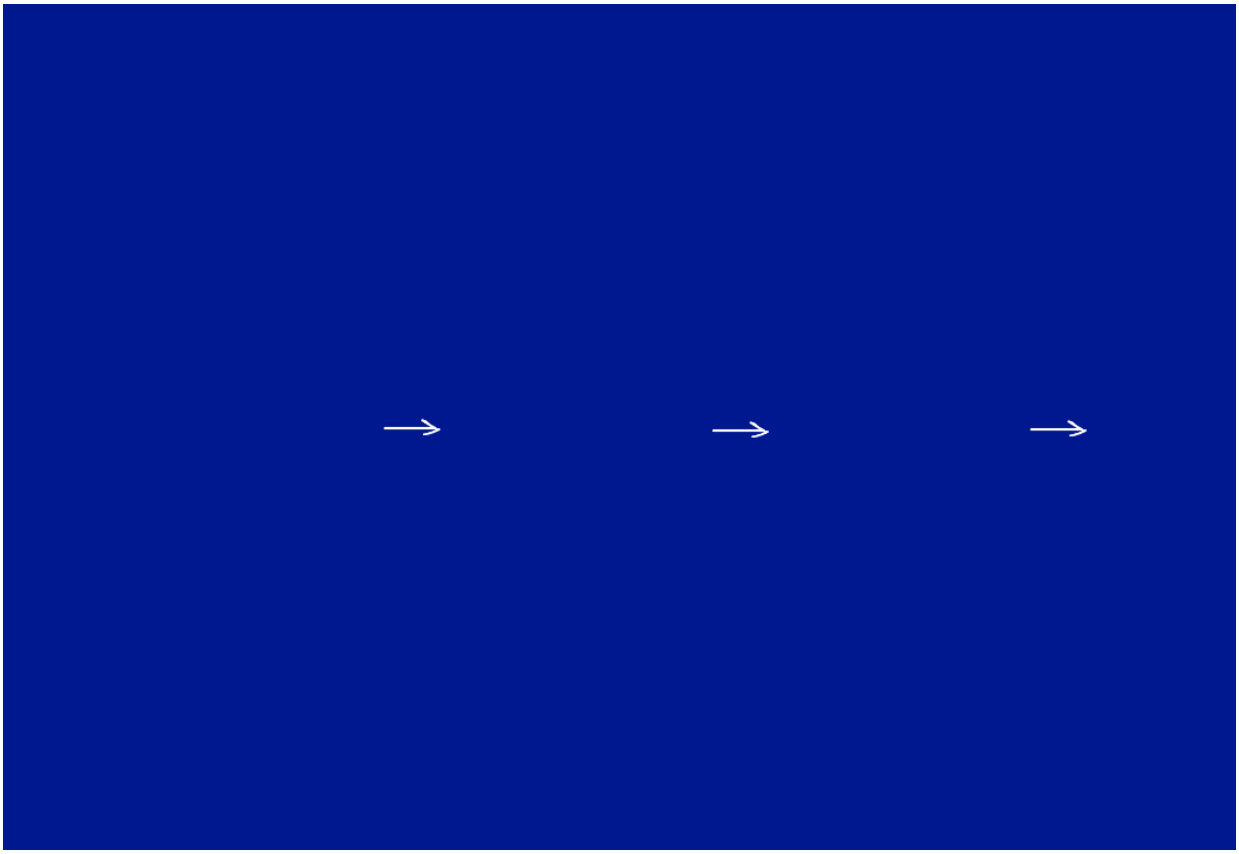
Mission Statement 1975

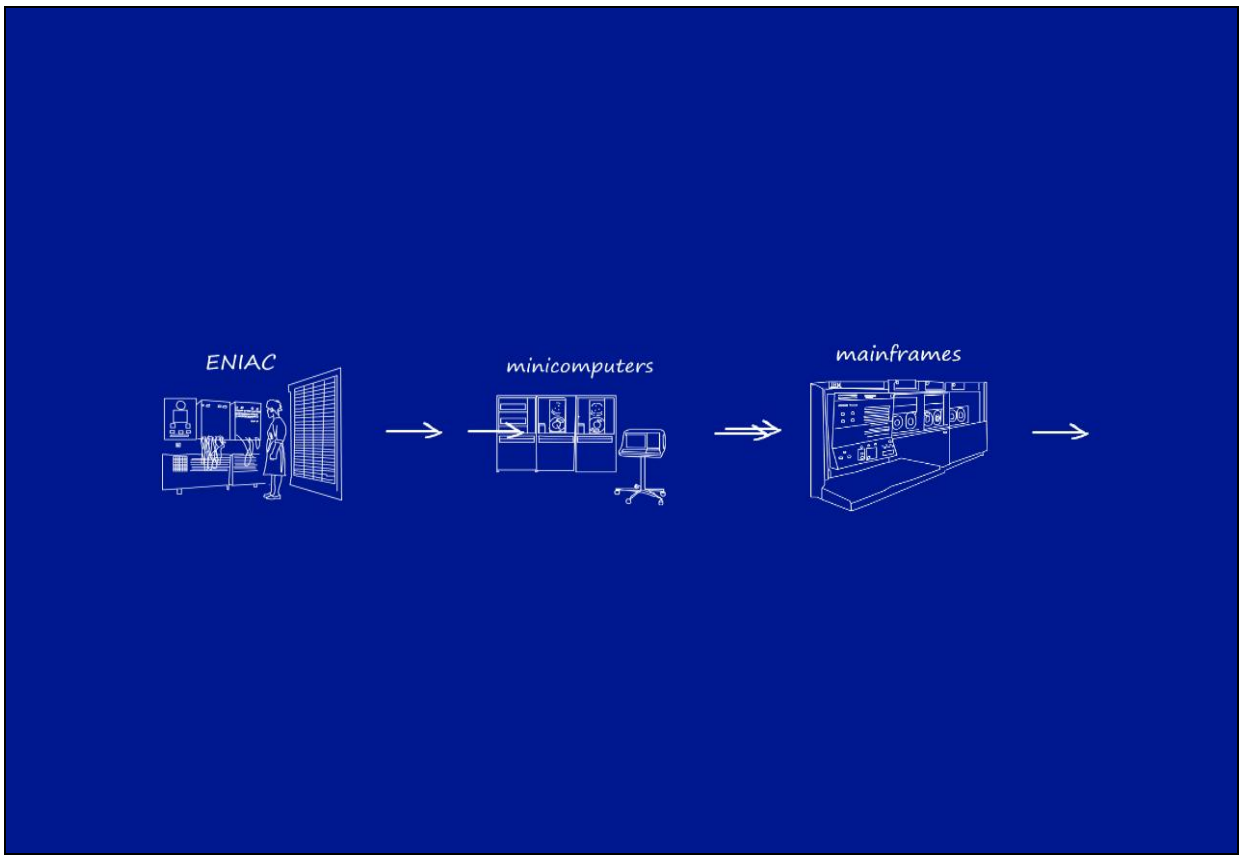

"A computer on every desk and in every home"... and in every car, pocket, refrigerator, lamp, watch. .

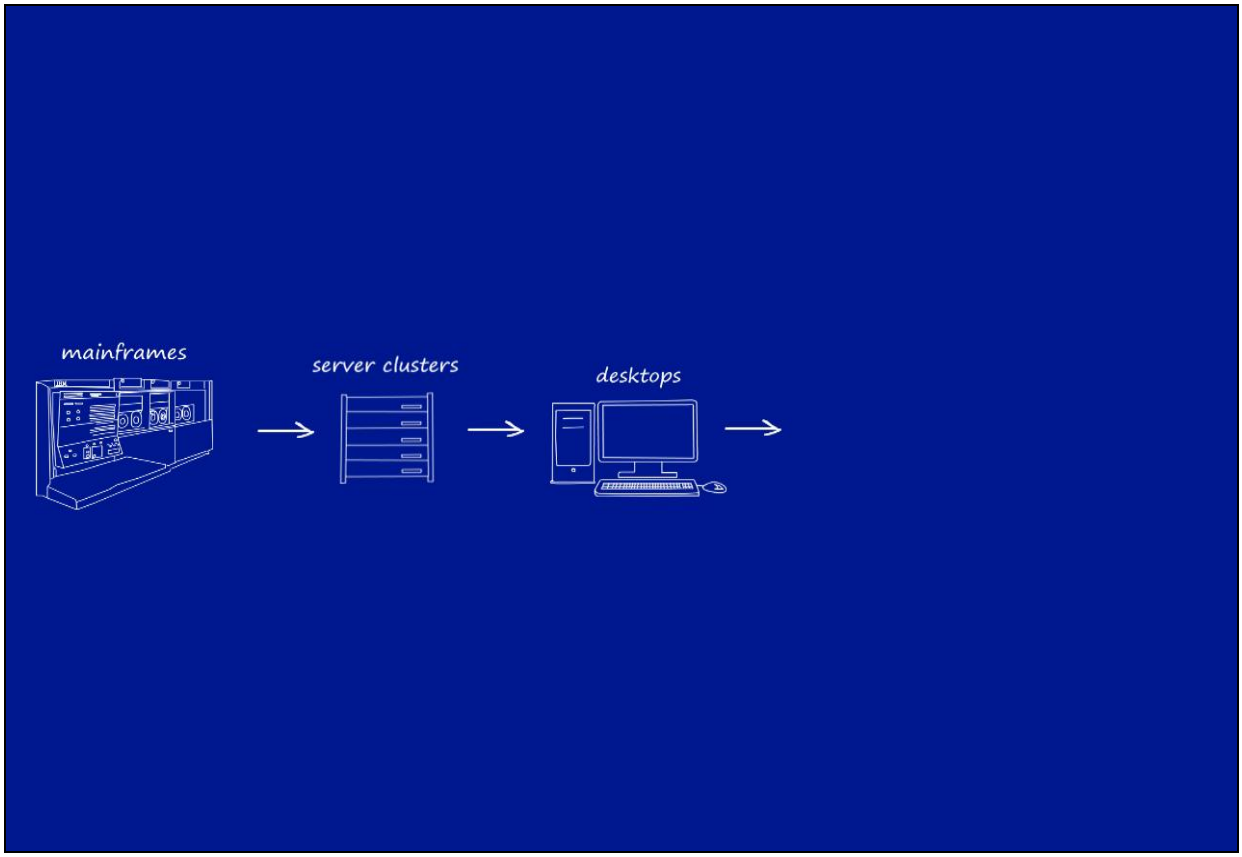
# Computing becomes invisible

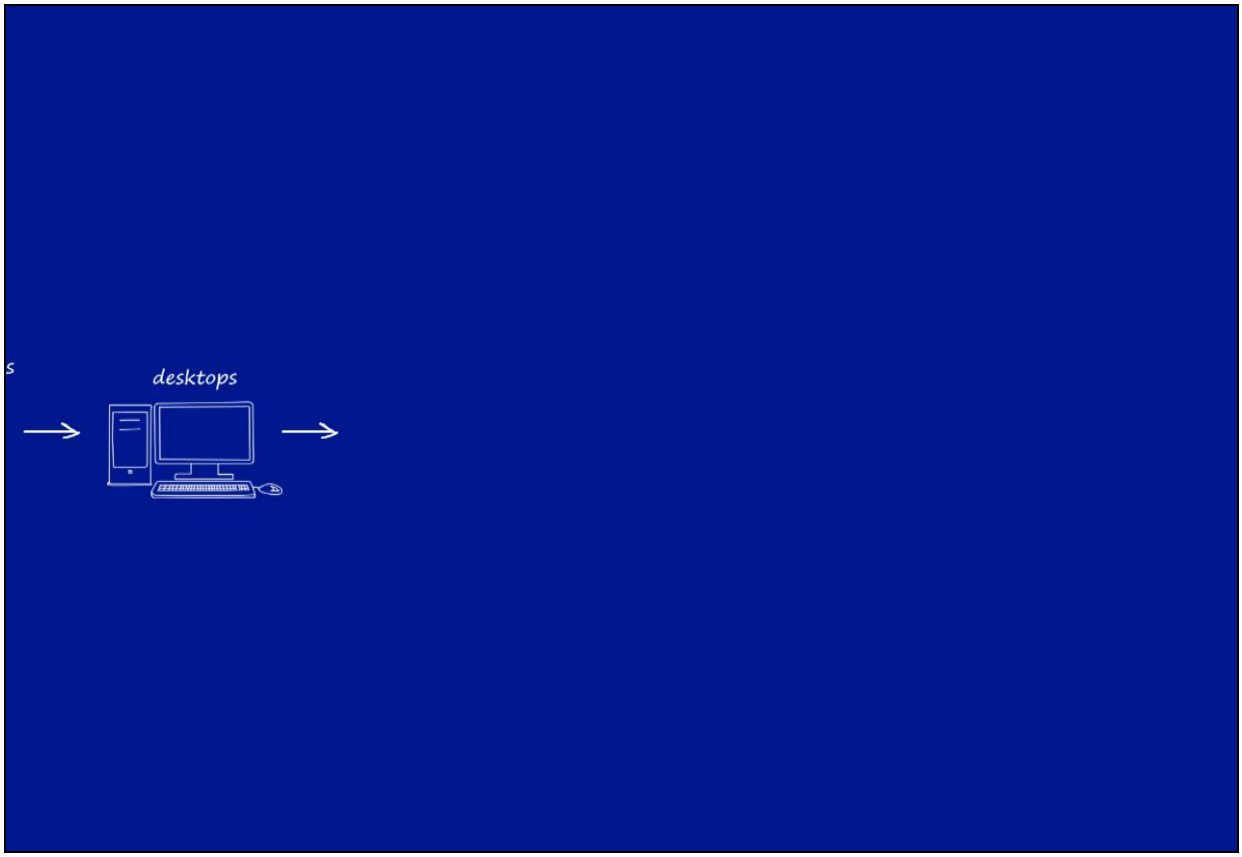


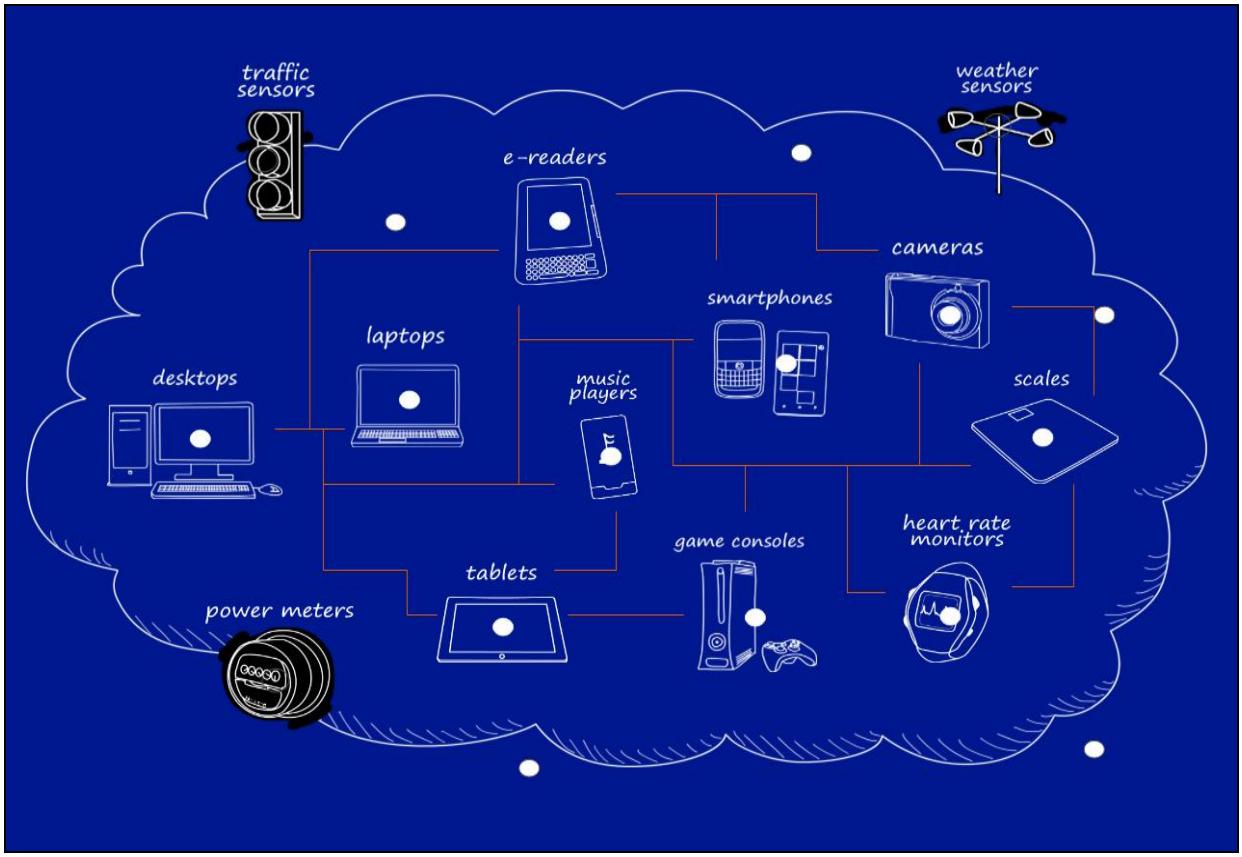



ENIAC
minicomputers
mainframes


mainframes
server clusters
desktops


s
desktops


traffic sensors
weather sensors
e-readers
cameras
smartphones
laptops
desktops
music players
scales
heart rate monitors
game consoles
tablets
power meters


Where is the data going?
http://www.opte.org/maps/

"Where the World Wide Web makes information available everywhere and to anyone, cloud computing makes computing power available everywhere and to anyone."

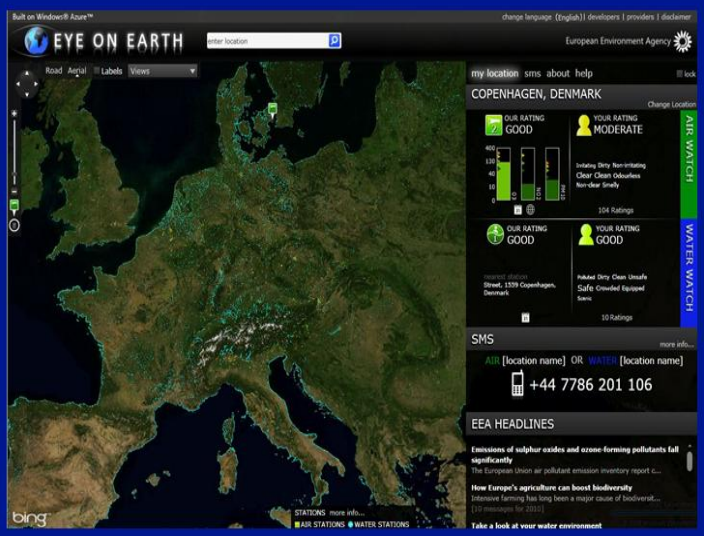
Ubiquitous computing power …

… power to develop public and private solutions to :

- Share public data
- Accelerate startup creation
- Advance machine translation

… to benefit the Digital Single Marke

## Share Public Data



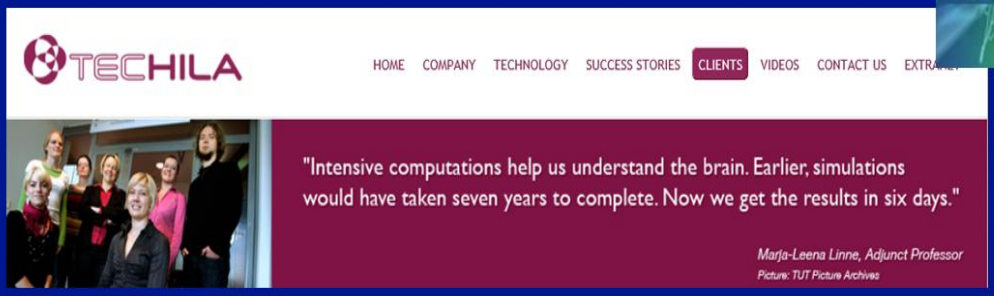

www.eyeonearth.org
http://eyeonearth.cloudapp.net

eye on earth

## Eye on Earth

- Making environmental data relevant
- Developed by European Environment Agency and Microsoft
- Platform for interactive map-based visualisations of public data

# Accelerate Startup Creation




## Techila Technologies

- Accelerating research
- One of 16,000+ European startup businesses in Microsoft BizSpark program
  - Accelerating cross-border business for SMEs

www.techila.fi
http://www.microsoft.eu

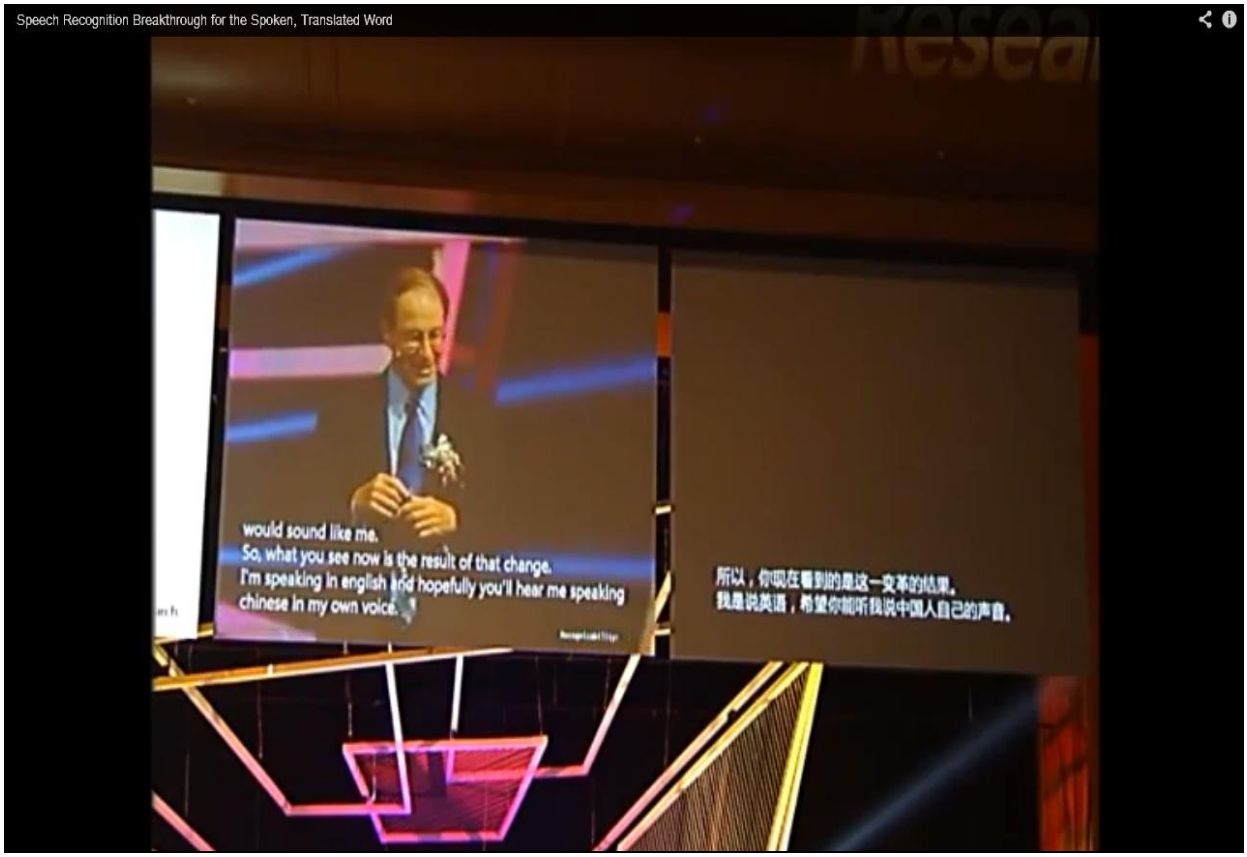
# Advance Machine Translation

- Big data, machine learning
- New breakthrough techniques in speech recognition and speech synthesis
- Word error rates approaching human capabilities
- Demo of recent breakthroughs

[go to minute 6:22 for beginning of simultaneous translation portion of demo]

bing

Microsoft Research


Speech Recognition Breakthrough for the Spoken, Translated Word
would sound like me.
So, what you see now is the result of that change.
I'm speaking in english and hopefully you'll hear me speaking
chinese in my own voice.
所以，你现在看到的是这一变革的结果。
我是说英语，希望你能听我说中国人自己的声音。


Thank
you
Microsoft
Mark Lange
mlange@microsoft.com

## Presentation by Sameer VERMA


### A new reality…

**Our world is changing**

- Rising middle class (2.5x by 2030) resulting in resource constraints
- BRICs driving new economic balance / large scale urbanization

**Our customer needs are changing**

- Instant use, instant value
- Real-time connectivity
- Focus on the "segment of one"

**Our industry is changing**

- Information is the new business currency
- "PERFECT STORM": Cloud, Intelligent Data, Mobile, Social, and Collaboration reaching maturity at the same time

 2

## Technology Mega Trends

**Connectivity**
- Smartphones outsell PCs
- By 2013, more than 15 billion devices will be connected to the Internet using a mobile device

**Big Data**
- Data volume doubles every18 months , with 85% of that data contained in business domains

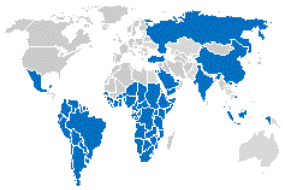
**Cloud**
- 80% of new software offerings were available as cloud services in 2011

**Social Media**
- More than 1 billion people access social networks
- Facebook overtakes Google as the most visited Web site

**Consumerization of IT**

## New reality and new opportunities



**$230 B**

Cloud

Database & Technology

Mobile

Analytics

Applications

**$110 B**

BI/Analytics

Middleware

Core ERP + Suite

**2010** **2015**

successfactors BUSINESS EXECUTION SOFTWARE · ARIBA · ByD · CROSSGATE

**SAP HANA** · SYBASE · **Netweaver**

SYBASE · Sybase · Gateway

SAP BusinessObjects · Visual Intelligence · BPC

BW on SAP HANA · Predictive · GRC

SAP Business Suite on SAP HANA

Best in class industry solutions

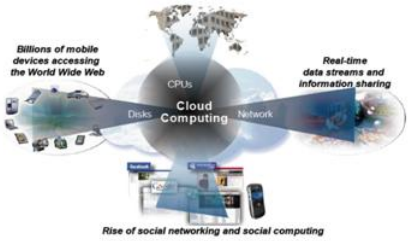
RIGHT HEMISPHERE

Source: IDC, CMI, strategy reviews with consulting firms, team analysis

## Ubiquitous business solutions

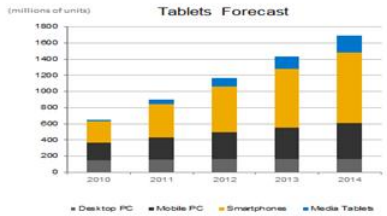
### Cloud




### Big Data


### Machine-to-Machine/Internet of Things

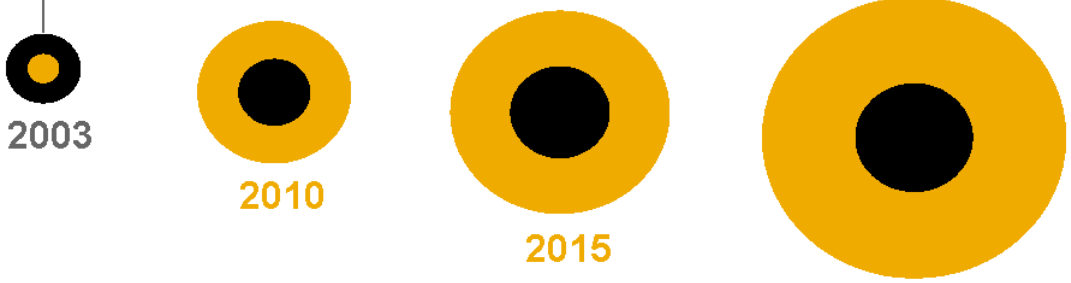

### Enterprise Mobility







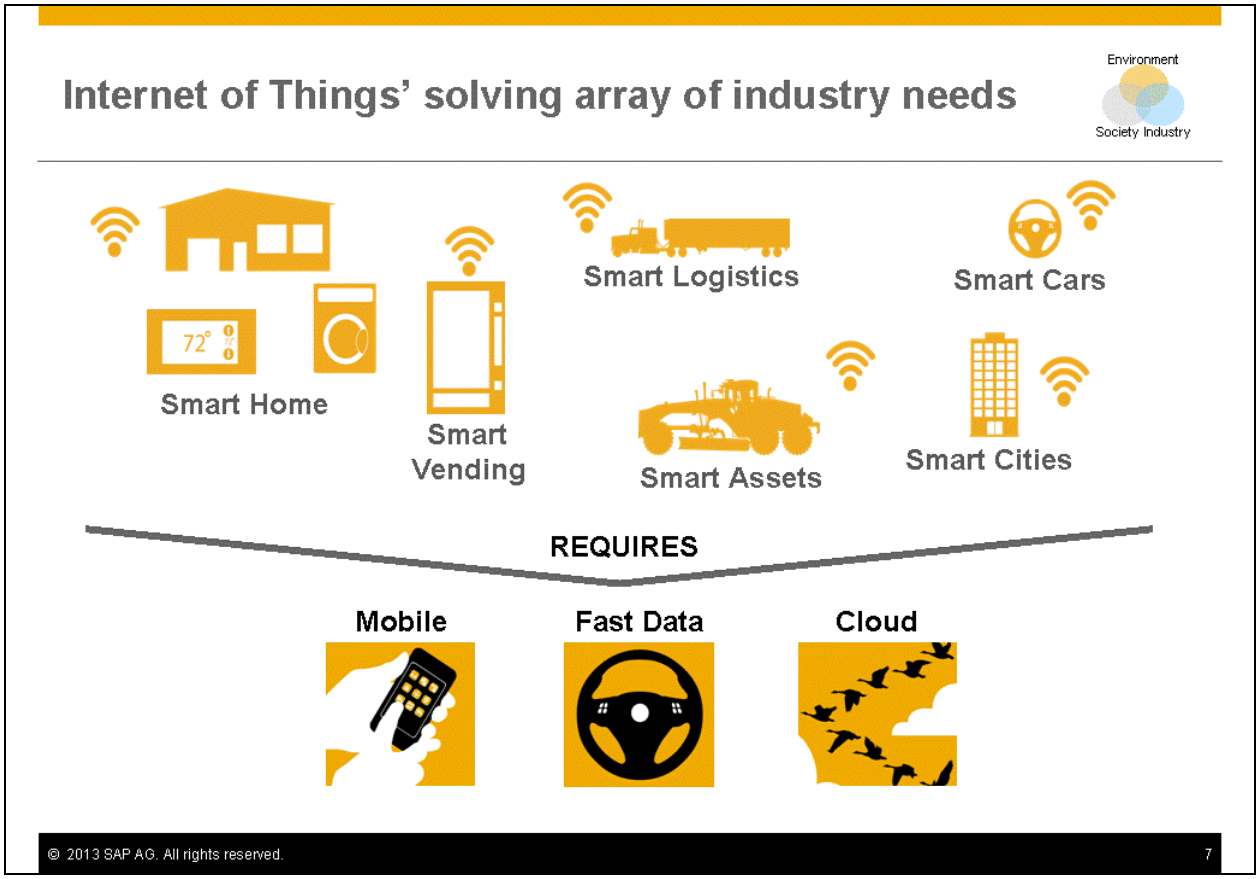
During 2008, the number of things connected to the Internet exceeded the number of people on earth




By 2020 there will be 50 billion*

***According to recent Cisco research, the Internet of Everything – defined as the intelligent connection of people, processes, data and things – is predicted to create business opportunities of up to $14.4 trillion in private sector economic "value at stake" over the next 10 years..***

*Berg Insight, 2012


Internet of Things' solving array of industry needs
Environment
Society Industry
Smart Home
Smart Vending
Smart Logistics
Smart Assets
Smart Cars
Smart Cities
REQUIRES
Mobile
Fast Data
Cloud
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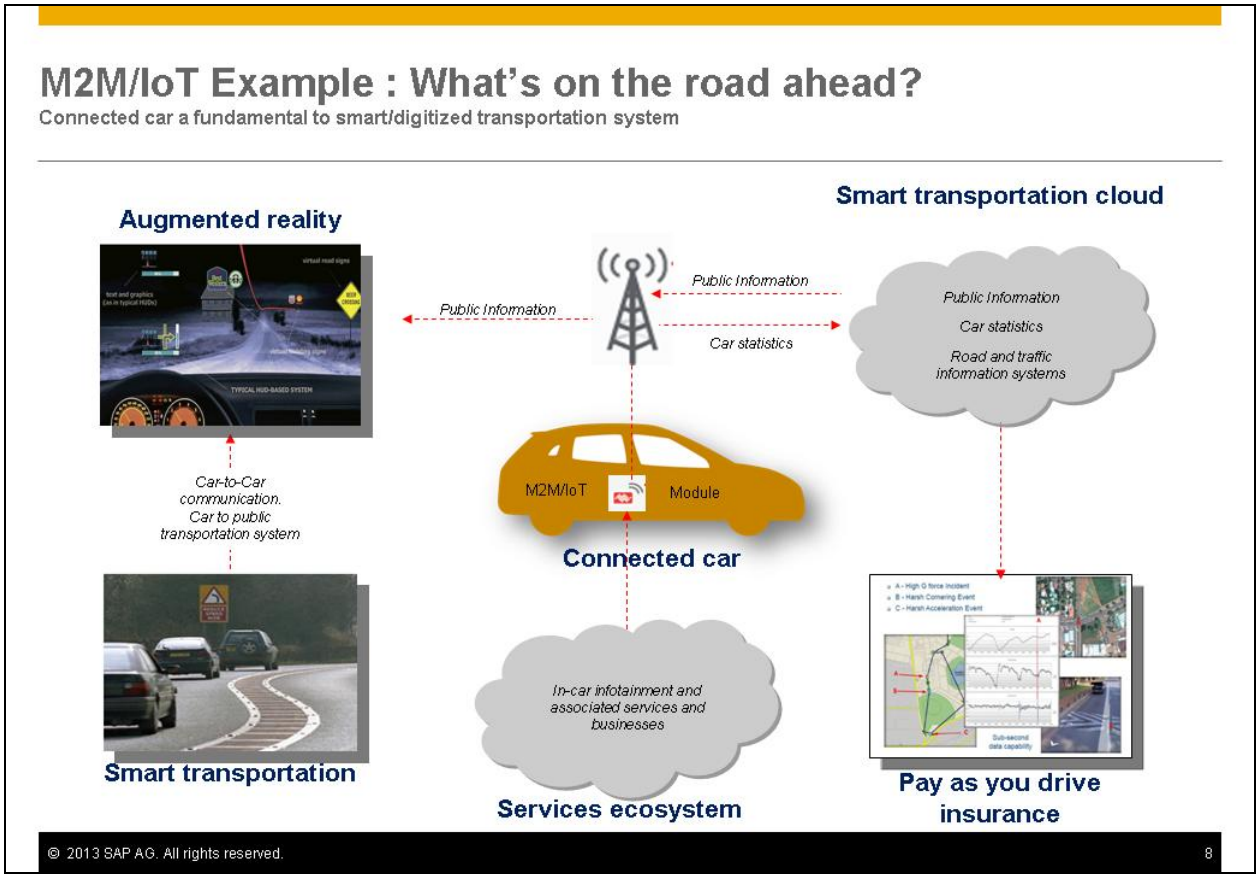
7


M2M/IoT Example : What's on the road ahead?
Connected car a fundamental to smart/digitized transportation system
Augmented reality
Smart transportation cloud
Public Information
Public Information
Car statistics
Public Information
Car statistics
Road and traffic information systems
Car-to-Car communication. Car to public transportation system
M2M/IoT
Module
Connected car
In-car infotainment and associated services and businesses
Smart transportation
Services ecosystem
Pay as you drive insurance
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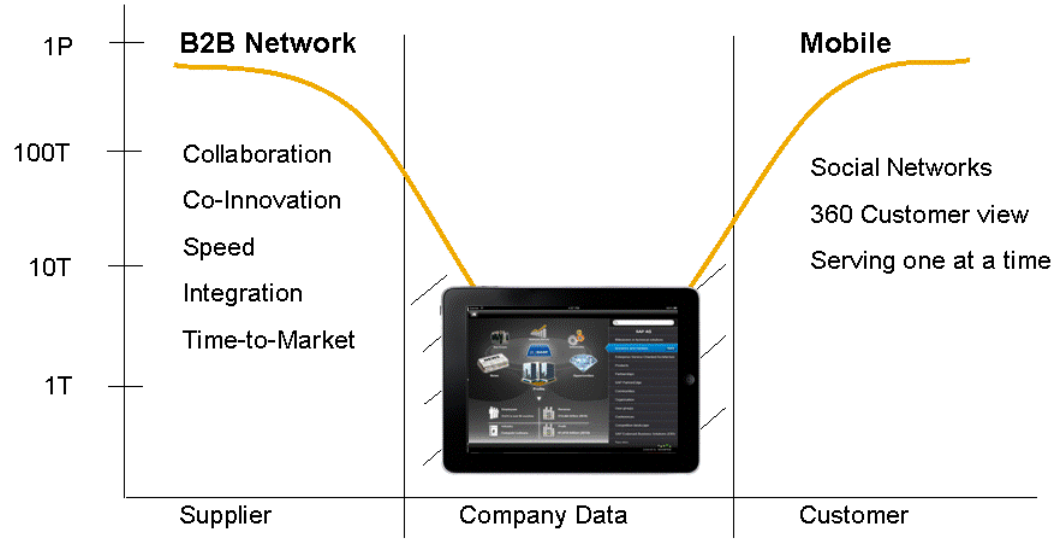
8

## Enterprise Data in the Future



## Big Data - SAP HANA

Ideal platform for M2M / IoT Fast / Big Data

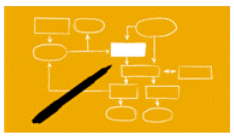
**Real-time Analytics**


Operational Reporting


Data Warehousing


Predictive & Text Analytics on Big Data

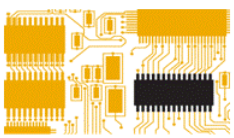
**Real-time Applications**


Core Business Acceleration


Planning and Optimization


Sensing and Response

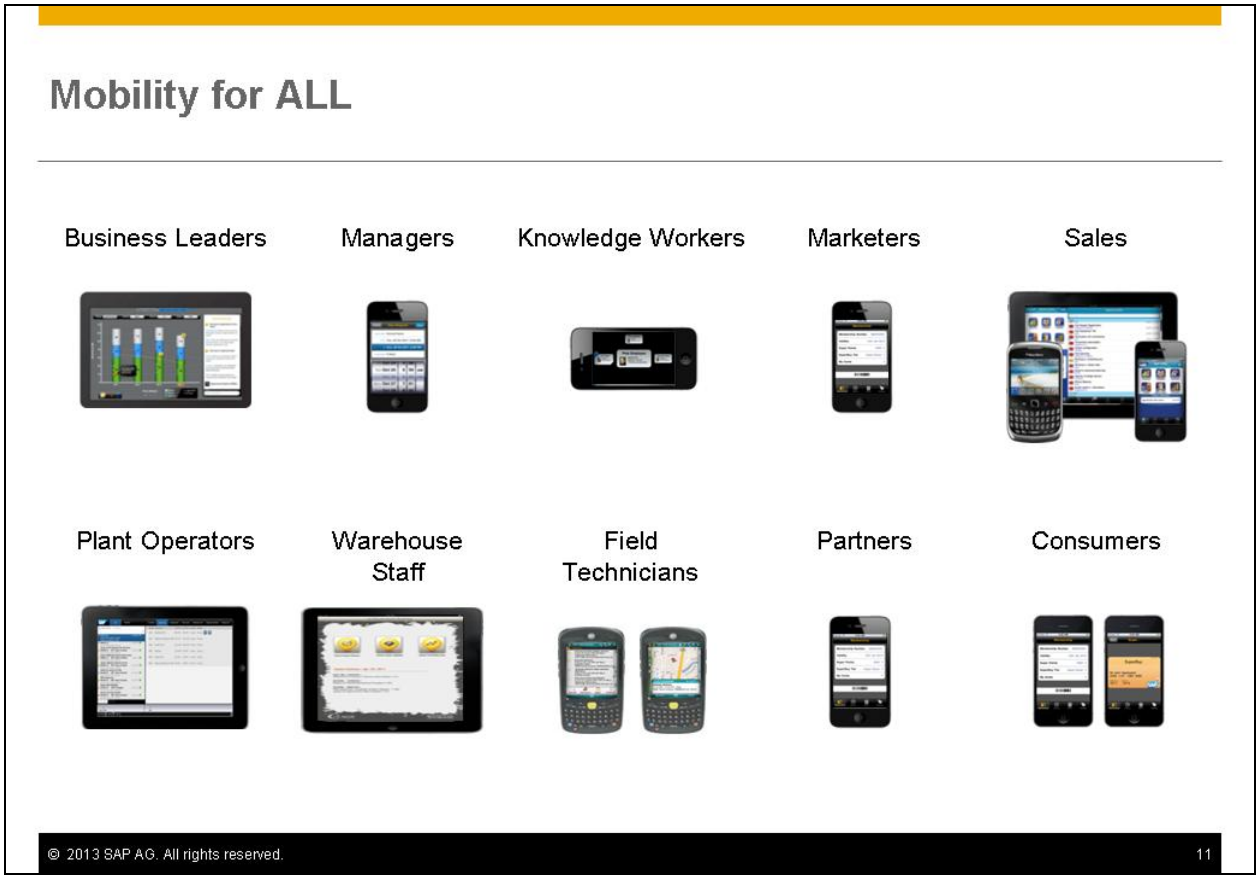
**Real-time Platform**


Database


Mobile


Cloud


Mobility for ALL
Business Leaders
Managers
Knowledge Workers
Marketers
Sales
Plant Operators
Warehouse Staff
Field Technicians
Partners
Consumers
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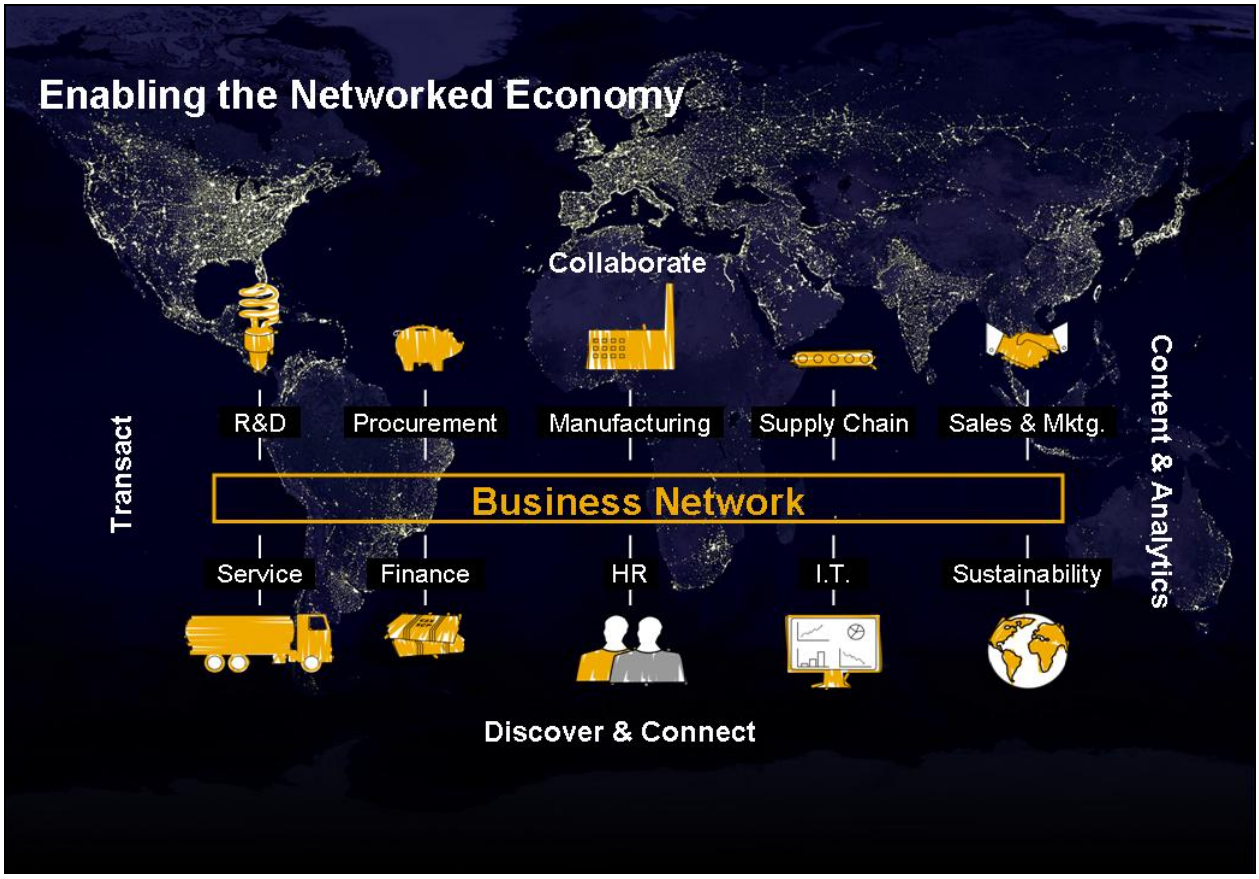
Enabling the Networked Economy
Collaborate
R&D
Procurement
Manufacturing
Supply Chain
Sales & Mktg.
Transact
Content & Analytics
Business Network
Service
Finance
HR
I.T.
Sustainability
Discover & Connect


# Thank You!

**Sameer Verma**
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Corporate Strategy Group
SAP AG
Dietmar-Hopp-Allee 16
69190 Walldorf, Germany
http://www.sap.com

## Presentation by Jakob KUCHARCZYK


# Introduction

- The Internet offers an incredible amount of new opportunities for innovation and economic growth
- The presentation will inevitably only be a snapshot: it is impossible to predict what the 'next big thing' will be
- Economic growth does not primarily come from Internet companies, but from *Internet-using* businesses & consumers

# Ubiquitous Trade

eBay commissioned study 'Enabling Traders to enter and grow on the global scale'

Aim: analyze international trade flows and exporting behavior comparing offline channels and eBay as an online trading platform

# Ubiquitous Trade

**Some fascinating results:**

1. The Internet brings down trade barriers: trade costs matter 60% less for eBay transactions than for offline trade

1. Reach of international markets by *all* sellers:
   - 94% of the smallest 10% of commercial sellers export
   - 81% of those sell to five or more foreign countries

# Ubiquitous Trade

3. Newcomers grow faster:
   - after 5 years newcomers on eBay have a combined market share of 22% (compared to 13% of new offline firms)

4. Lower trade costs translate into consumer welfare:
   - 42% is the average increase in real income by reason of transacting on eBay instead of offline channels

# Ubiquitous Trade

Conclusions:

-Study reveals the evolving nature of commerce: it becomes technology enabled, consumer-driven and distance matters less – no need to be big to engage in trade

-**Essentially, all of us can start a business today and all that consumers need is a mobile phone**

-Example of Adam Mackay in the UK:

- Opened an online retail store on eBay for sports equipment in 2009
- After 4 years only, 50% of sales come from overseas markets
- His website processes orders from 88 countries

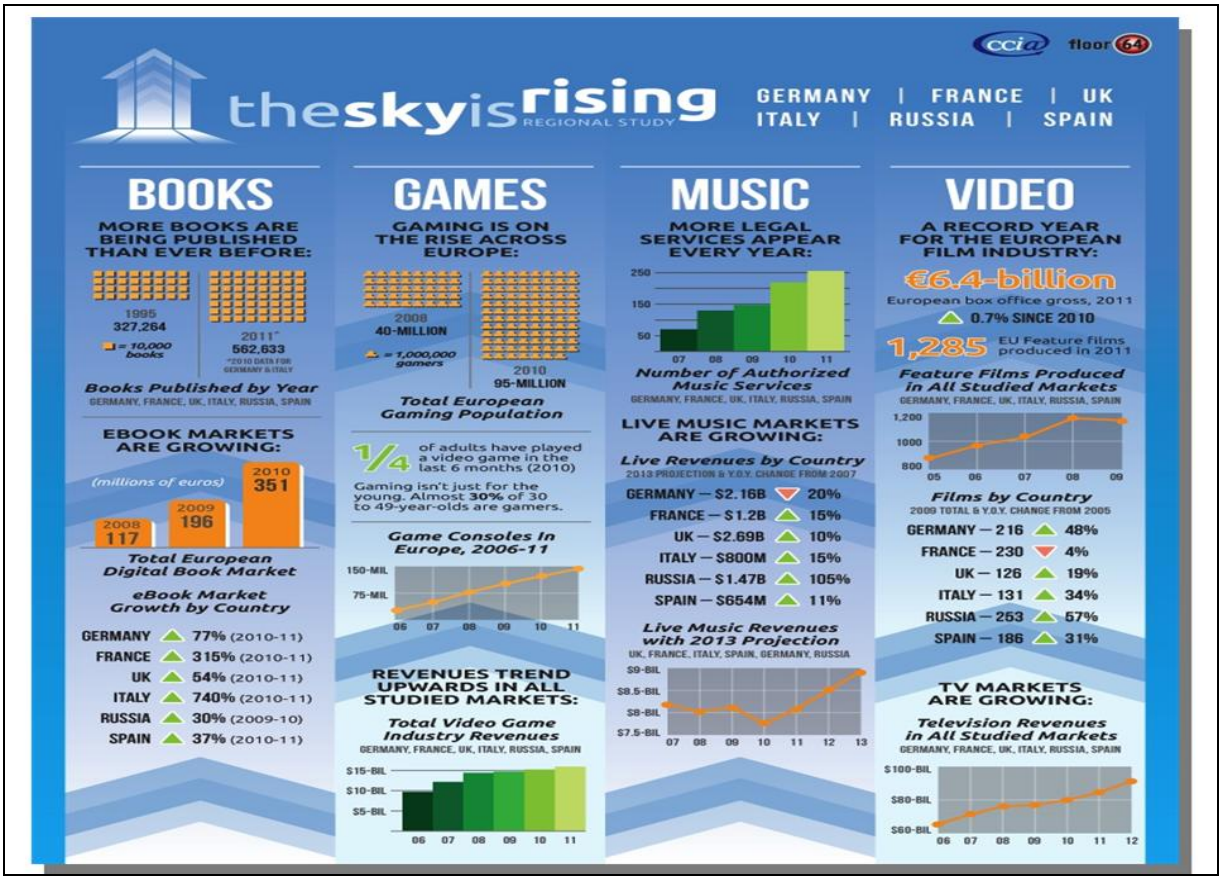
# Ubiquitous Access to Entertainment

It's the obvious topic: we as consumers spent a lot of time to 'consume' music, films, books and video games

CCIA recently commissioned 'The Sky is Rising':

-Study analyzing the economic state of the entertainment industry in six European countries: FR, GER, IT, RUS, SP, & UK

-Just a collection of the most reliable, publicly available data




# Online Opportunities & Innovation

Beyond Ubiquity in Trade and Entertainment: infinite possibilities

-Talent and Job pages on social networks
-Online accountancy tools for micro businesses
-MOOCs (Massive Open Online Courses)
-Move towards the 'sharing economy': cars, cabs, apartments…
-Specialized online market places for homemade stuff (Etsy)
-Limitless variety of apps

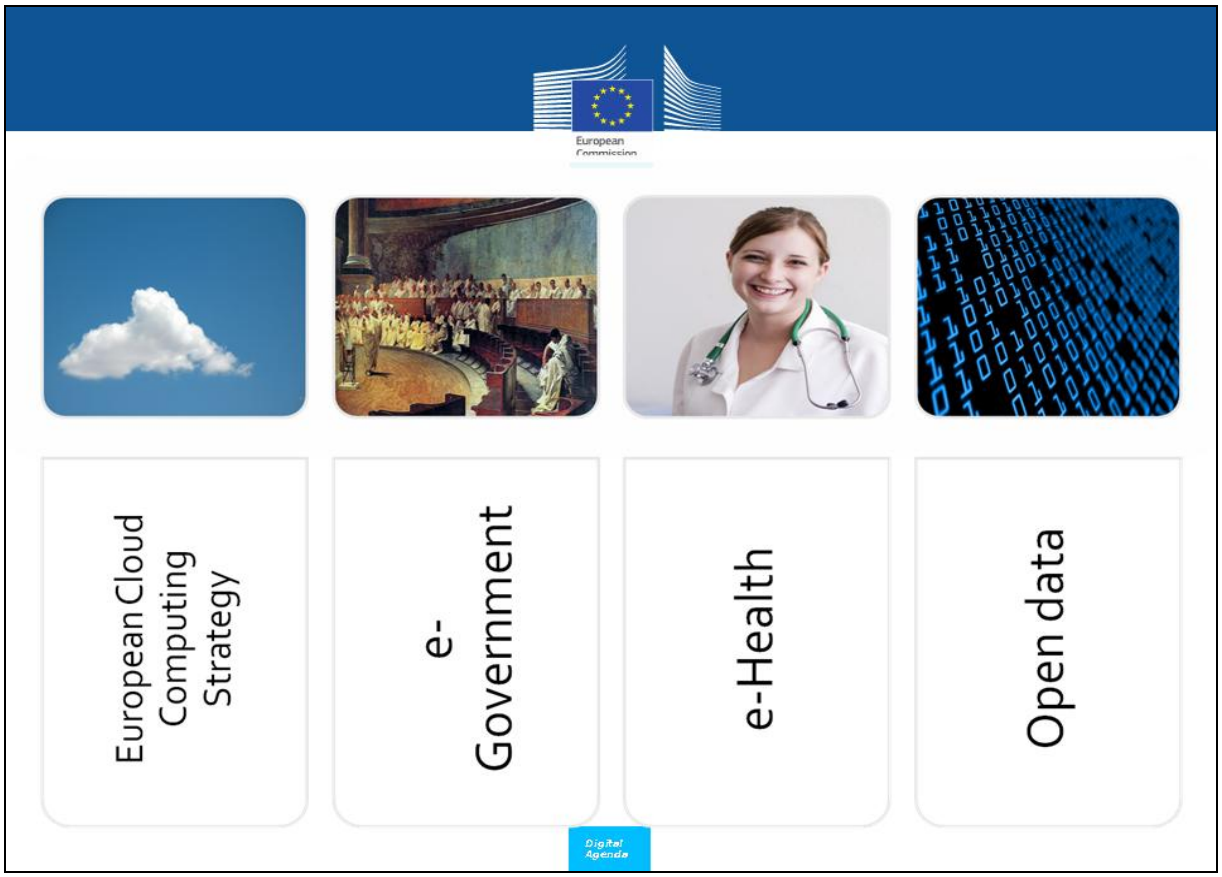
# Policy Recommendations

1. Strong Net Neutrality Rules: to allow "innovation without permission" from the network operator (Tim Berners-Lee)
   - COM to issue a Recommendation this year: concerns remain
2. Legal und operational certainty for online businesses
   - Welcome COM's decision to not open the E-commerce Directive
   - Notice-and-Action initiative is an opportunity
3. Need for an Harmonized, Integrated Market
   - Strong support for measures that bring down barriers to trade
   - Impediments to the development of a thriving online economy have both a public *and private* character – see the net neutrality example

# Thank you for your attention!

Jakob Kucharczyk
jkucharczyk@ccianet.org

## Presentation by Jörgen GREN

# European Cloud Computing Strategy

— *Reduce ICT and energy costs*
— *Increase competitiveness of SMEs*
— *Create millions of new European jobs.*

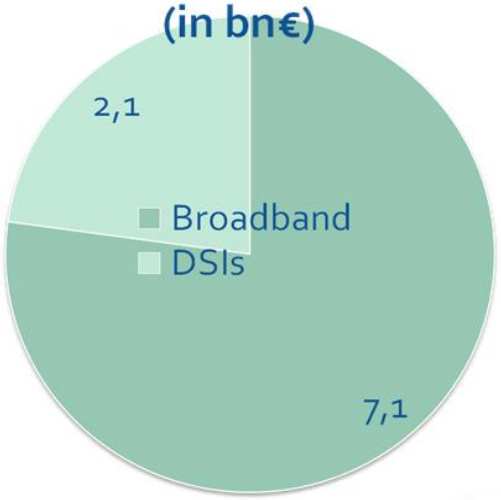
**Adopted 27/9/2012**

***3 Key main actions:***

— **Cutting through the jungle of standards**
— **Safe and fair contract terms and conditions**
— **European Cloud Partnership for public sector**

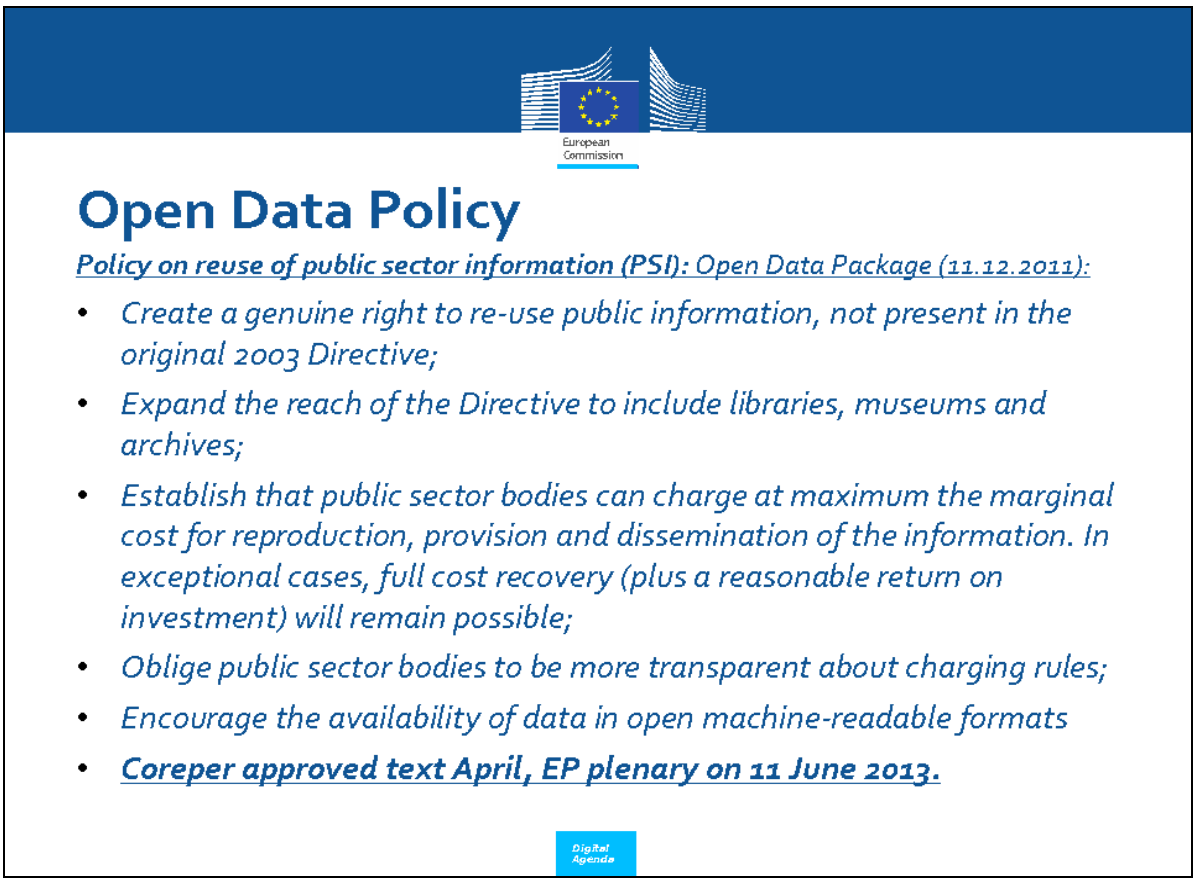
# Digital Service Infrastructure

## COM proposal (in bn€)




## Council position (in bn€)


European Commission
e-Health
e-Health AP 2012-2020
• clarifying areas of legal uncertainty;
• improving interoperability between systems;
• increasing awareness and skills among patients and healthcare professionals;
• putting patients at the centre with initiatives related to personal health management and supporting research into personalised medicine;
• ensuring free legal advice for start-up eHealth businesses
SWP on the legal aspects of telemedicine
European Innovation Partnership on active and healthy ageing
International cooperation
Underpinned by a strong research foundation
Digital Agenda


European Commission
Open Data Policy
Policy on reuse of public sector information (PSI): Open Data Package (11.12.2011):
• Create a genuine right to re-use public information, not present in the original 2003 Directive;
• Expand the reach of the Directive to include libraries, museums and archives;
• Establish that public sector bodies can charge at maximum the marginal cost for reproduction, provision and dissemination of the information. In exceptional cases, full cost recovery (plus a reasonable return on investment) will remain possible;
• Oblige public sector bodies to be more transparent about charging rules;
• Encourage the availability of data in open machine-readable formats
• Coreper approved text April, EP plenary on 11 June 2013.
Digital Agenda


European Commission
Thank you
For more information
DG Communications Networks, Content and Technology
http://ec.europa.eu/digital-agenda/
Digital Agenda

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DIRECTORATE-GENERAL FOR INTERNAL POLICIES

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- Environment, Public Health and Food Safety
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- Internal Market and Consumer Protection

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Publications Office

Ubiquitous Digital Single Market