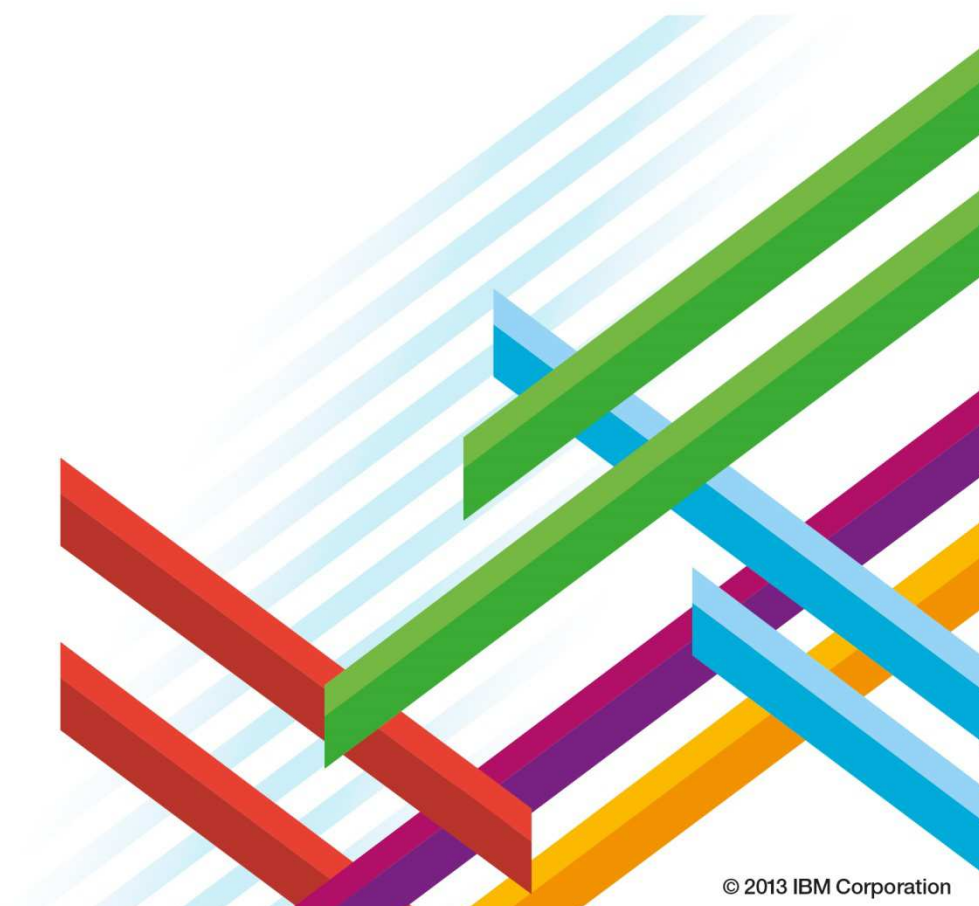# Digital Transformation – an active force for economic growth and a sustainable society

Sietze Dijkstra

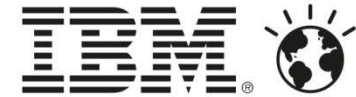Global Government Industry leader
IBM Global Business Services

Agenda

- How Big Data Analytics, Social Media and Mobile will help Governments achieve their goals.

- Case studies

- "Security" needs to be approached holisticly

Government CxOs rank technology as #1 factor

External forces impacting the enterprise (3–5 Years)

Global

Market factors ①

Technology factors ②

Macro-economic factors ③

People skills ④

Regulatory concerns ⑤

Socio-economic factors ⑥

Globalization ⑦

Environmental issues ⑧

Geopolitical factors ⑨

Budgets ⑩

Government and NGOs

① **Technology factors**

② Budgets

③ People skills

④ Regulatory concerns

⑤ **Macro-economic factors**

⑥ Geopolitical factors

⑦ Socio-economic factors
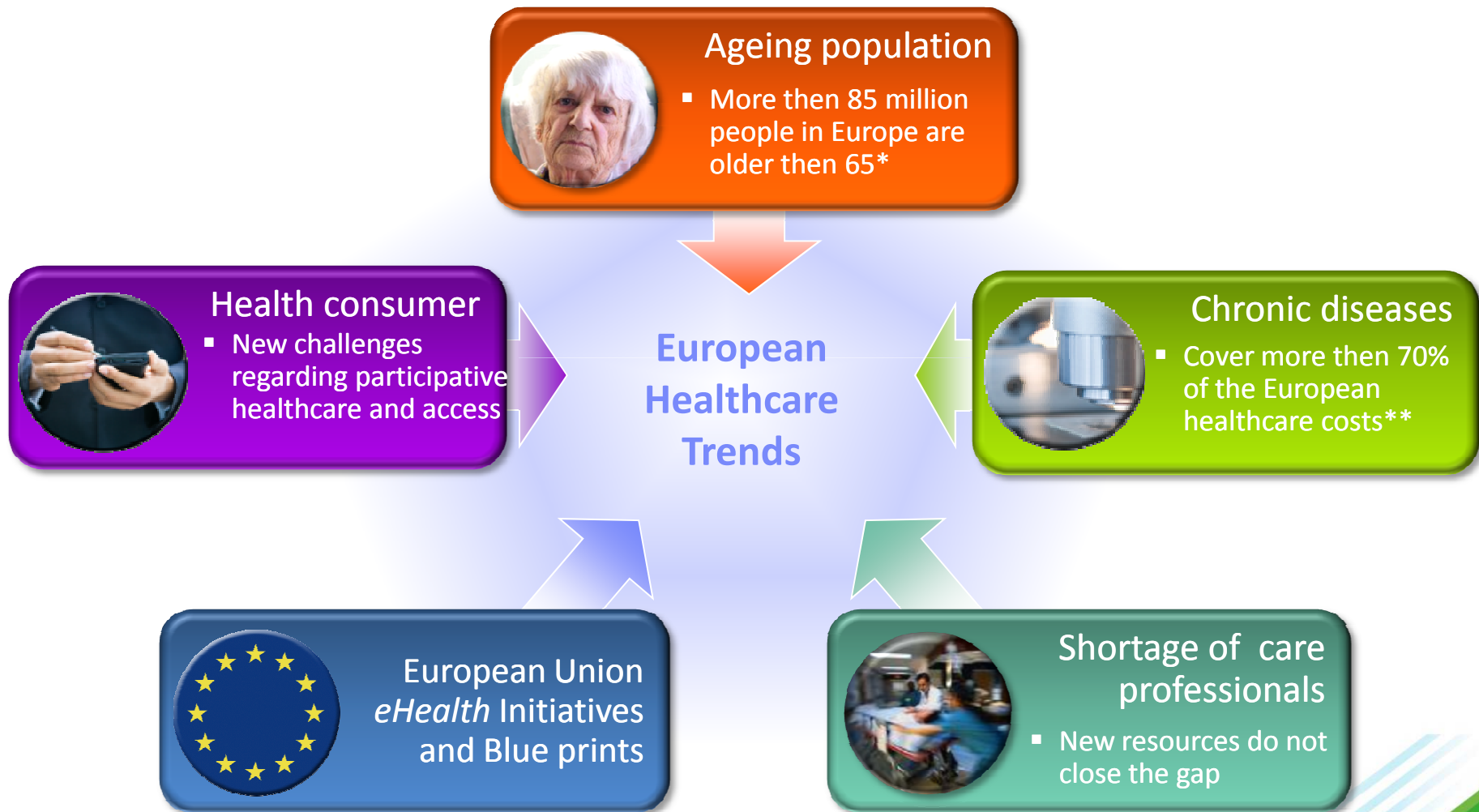
⑧ **Market factors**

⑨ Environmental issues

⑩ Globalization

"Limited resources drive innovation; if you want to do more then think of doing things differently."

CFO, US Government Agency

The healthcare care systems need to change

IBM

Ageing population
- More then 85 million people in Europe are older then 65*

Health consumer
- New challenges regarding participative healthcare and access

European Healthcare Trends

Chronic diseases
- Cover more then 70% of the European healthcare costs**

European Union *eHealth* Initiatives and Blue prints

Shortage of care professionals
- New resources do not close the gap

* Source: "Together for Health: A Strategic Approach for the EU 2008-2013"
**Source: "Strategic Implementation Plan for the European Innovation Partnership on Active and Healthy-Ageing," Brussels, 11 November 2011.

Objectives of Governments who do not want to stay behind

The transformation agenda of the State Service aims to contribute to three broad objectives.

To deliver good service to citizens, companies and institutions.

Increasing the effectiveness and reducing unnecessary bureaucracy;

Reduce the unit costs of the civil service

" One Government : we do not bother our citizens, companies and institutions with the differences between our organisations : We operate as One Government"

The sheer volume of Government Services, combined with security considerations, has inhibited the migration of Citizen mobile services to date
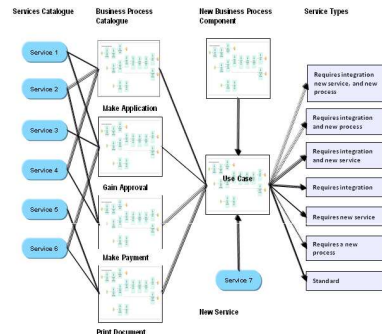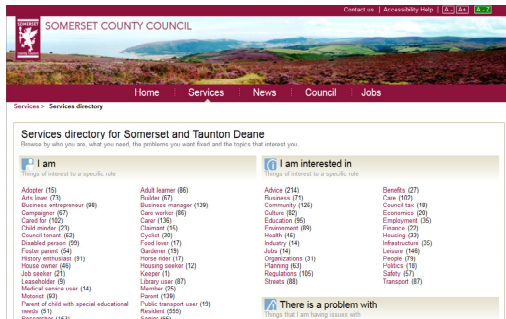

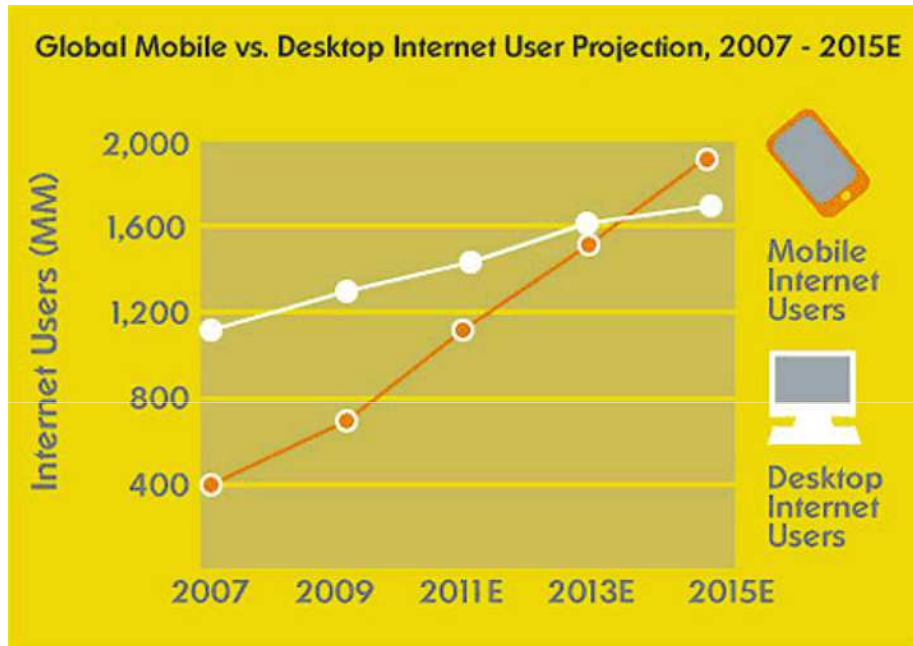| Web Portal aligned by Government department	High Service Complexity and volume	Security Challenges hamper citizen access to services

 ✗ ✗ ✗

- **Most Portals are organized by the department consuming the services, not by citizen need or relevance**

- **Transactions limited to informational content**

- **No mobile integration**

- **Typical Web Portals at local government level provides around 750 services to citizens**

- **Limited flexibility to re-configure services or expose web services to mobile devices**

- **Transactions require citizen to go to a face-to-face interview or to go through a time-consuming log-on procedure**

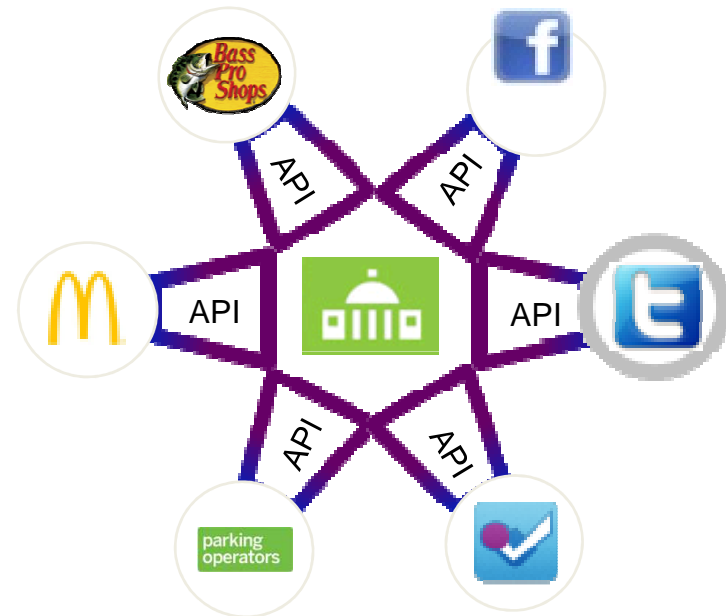- **Limited leverage of existing Government-issued credentials**

Mobile is everywhere,
enabling the concept of the *API economy*

Global Mobile vs. Desktop Internet User Projection, 2007 - 2015E
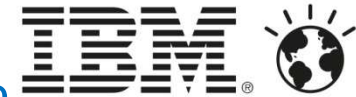
Source : Microsoft Tag

"….experts expect there to be 10 billion connected devices by 2020, and 350 million employees using smart phones by 2016. ….. it took land lines 50 years to reach everyday homes. The mobile adoption rate we have today is the fastest in technology history." *The Economist, Apr 13th 2012*

"APIs are powering new channels for conducting business, increasingly supporting the growth of mobile, web and partner channels. APIs and cloud have broken down the barriers to access data and services." *cnbc.com 10 Jun 2013*

Mobility enables the channel shift necessary to reduces costs and improve interaction between Government, Citizen, Business and Employee

Physical	→	Call Center	→	Web	→	Mobile

Employee to Government

How to improve productivity of Government workers while providing job flexibility?
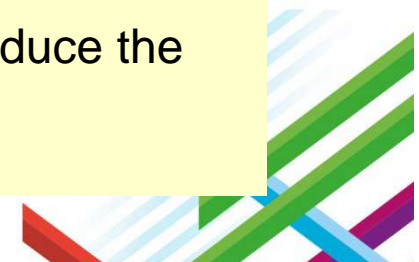
Citizen to Government

How to increase citizen engagement and satisfaction with Government, while reducing channel costs?
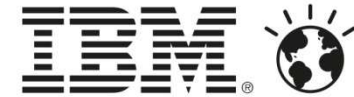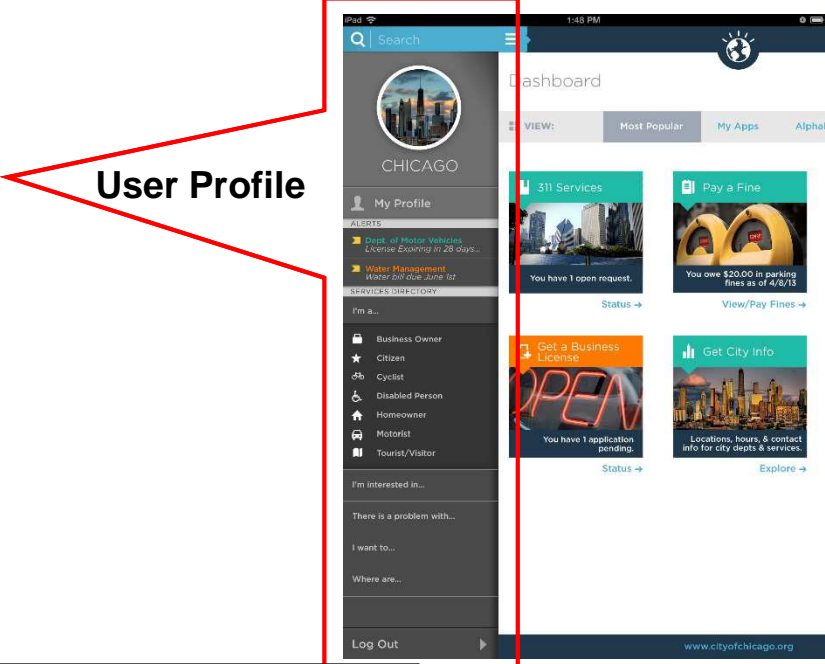
Business to Government

How to speed up the local economy and reduce the barriers to working with Government?

IBM has created a mobile portal approach that delivers Government services in a secure, focused manner, tailored to the citizen's individual needs
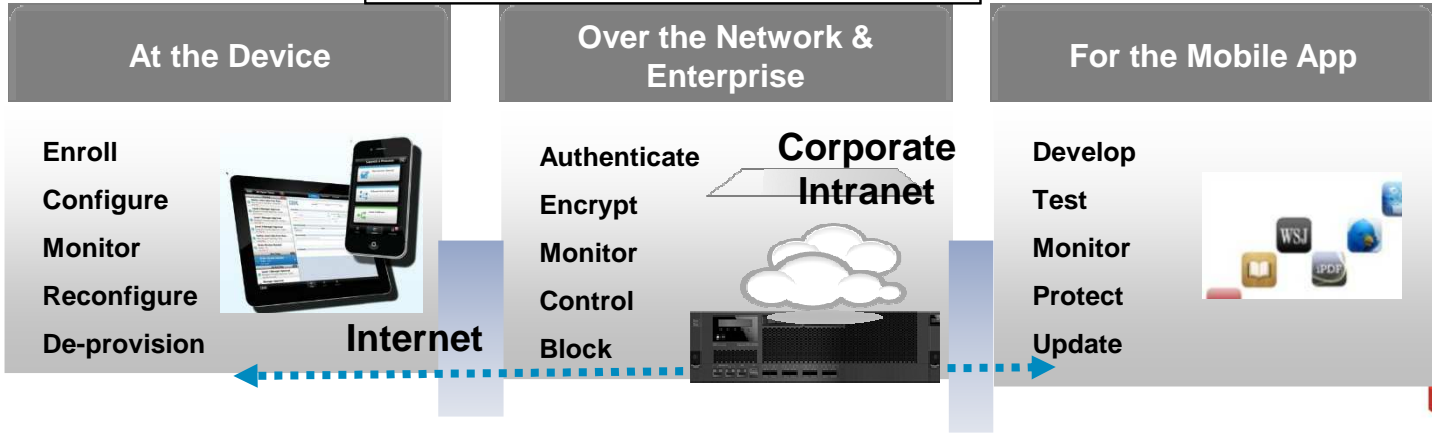
- **User Profile Choices**
  - **I am a ……**
  - **I am interested in…**
  - **I have a problem with…**
  - **I live near….etc**

- **Location Specific Services**

- **Account History**

- **Services suggested by Social Network preferences**

- **Govt employee services**

- **Federated credentials**

User Profile

- **IBM's "AllGov" approach to integrated Government mobile service provision**

Mobile Security Implemented end-to-end

At the Device	Over the Network & Enterprise	For the Mobile App
Enroll	Authenticate	Develop
Configure	Encrypt	Test
Monitor	Monitor	Monitor
Reconfigure	Control	Protect
De-provision	Block	Update

Corporate Intranet

Internet

Why Governments should promote Big Data and Mobile.

- Citizens will behave more and more as "clients" and expect a modern Public Service.

- Communication with citizens will be digital and through mobile platforms.

- New "smart solutions" will make an important contribution to the achievement of government objectives

- "Big data" is the new "natural resource" which makes innovation possible and hence is essential for economic growth and sustainability

- Due to the creation of the digital society, protection of the vital systems and data against hostile attacks and cybercrime is crucial

IBM BusinessConnect
Realize the art of the possible.

Case studies

Example of the Netherlands: "de IJk-dijk"

Convergence between physical and digital infrastructure, makes a predictive model possible
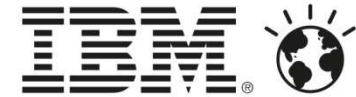
Can you predict when a cow lies down, when she will stand up?
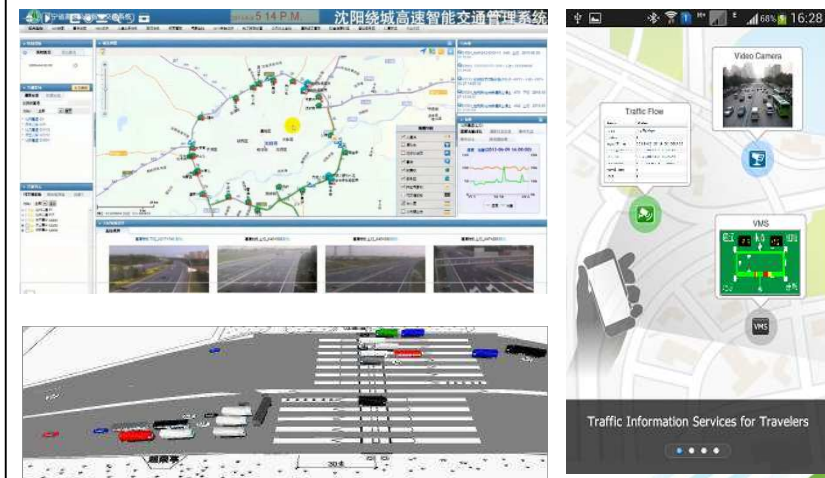
Ig Nobelprice 2013 granted to Dr. David Roberts
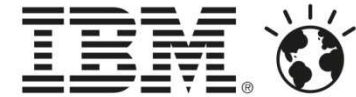
Smart Traffic Management in Cities

- Costs of congestion can be as high as 1.5% of GDP

- Smart Traffic Control centers can reduce the number by:
  - Streaming traffic data fusion
  - Integrated traffic monitoring and control
  - Decision support based emergency handling
  - On-line traffic analytics & optimization"

- Expansion of "Advanced Business Management" and "Connected Vehicle" is possible.

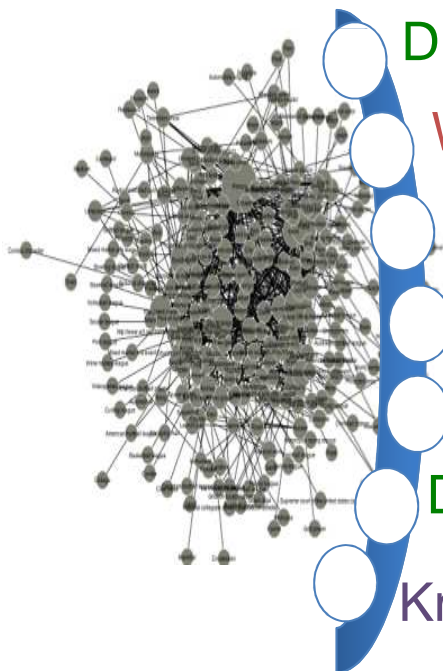Liaoning Province Highway Agency (LPHA) China

Linking Open City Data to DUBLinked

Goals:
- Improve uploading and integrating data
- Develop a richer content exploration capability for users.
- Increase visibility. Link DUBLinked with open data sites for "Cross City Exploration"

Putting the 'Linked' in DUBLinked!!

Digital traces (e.g., GPS buses)

Web services (e.g., events)

Internet Feeds (e.g., news)

Social streams

Physical city sensors

Data (e.g., from county councils)

Knowledge sources (DBpedia, Open StreetMaps)

What do you see ?

O'Connel Bridge / D'ollier St. Dublin City CCTV
8 Apr 2013 18:31:50 GMT Daylight Time

Dublin City Data Hub

Experiment with "location based services"

Phone tracking "Smart trash can" London

Smarter care enabled by analytics - examples

Integration of viral genetic data with clinical data to predict reactions on an anti-HIV therapy

Connection of DNA and clinical data for a better understanding and faster research of rare diseases

Real-time analytics op streaming data of medical instruments for monitoring of early born babies in the Toronto Sick Children's Hospital.

Improvement of knowledge and diagnoses and early recognition of rare diseases
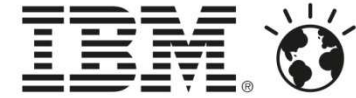

Cost savings and precise screening realized by integration of clinical, genetic and medical data.

Reduction of hospitalization of heart failure, improvement of health care planning combined with cost reduction

Watson in The Cloud: *The physicians assistent !*

- Help to complete the diagnosis

- Better and more tailored medication

- Prevention of medical misstakes

- Evidence Based Medicine (EBD)

- Natural language interpretation, statististical analysis, machine learning- **cognitive computing**

- But ... The physician remains responsible and takes the decision

Holistic Cyber Security of NATO and member networks is critical

IBM ®

Cyber Security / –n **1.** the protection of an organisation and its assets from electronic attack to minimise the risk of business disruption.

Technical Mitigation

- Better firewalls
- Improved anti-virus
- Advanced Crypto

People Mitigation
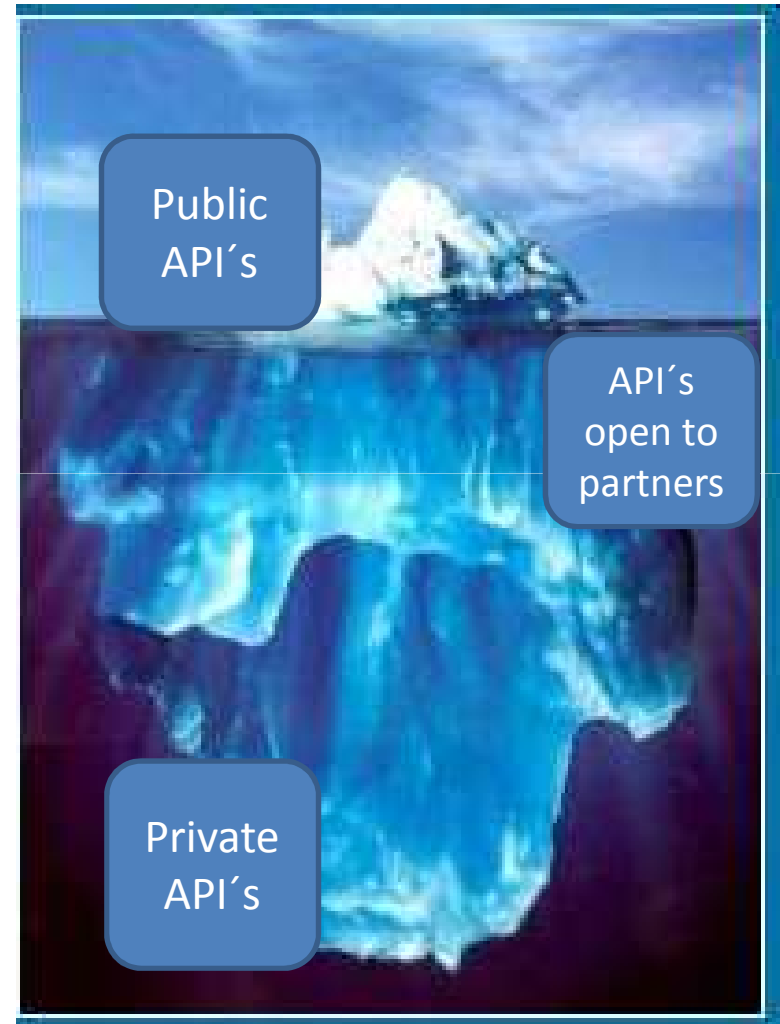
- Leadership
- Education
- Process

Risk Management approach

- Be alert to threats
- Understand your systems
- Perform risk analysis
- Design a Defense mechanism
- Don´t expect complete rule out of risks.
- Learning and improvement.

- Excelent inititives:
  - Alert online.nl
  - From a triangle to a quadrangle (Proposal of Paul Timmers, director sustainable and safe society, for the EC)

To conclude

- "Open Government/open data" and the "API-economy" are crucial for Governments who must keep abreast of the times and, preferably, be ahead of them.

- The rise of cognitive systems like Watson will have a big influence on how Public Services in the future will be delivered

- Big data is the new "natural resource" of economic growth. Governments will have an important role as actor, facilitator and legislator

Big data 100 meter sprint

"In Asia and de USA companies do anything to finish first with their innovative products. Legislators in these countries are doing their utmost to make the administrative "track" as easy as possible "

Quote Euro Commisionar Neelie Kroes, FD 26 October 2013

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Thank You!