

Big Data in health

Current and future initiatives of the Commission



Roger Lim MscBA

European Commission (DG SANTE)

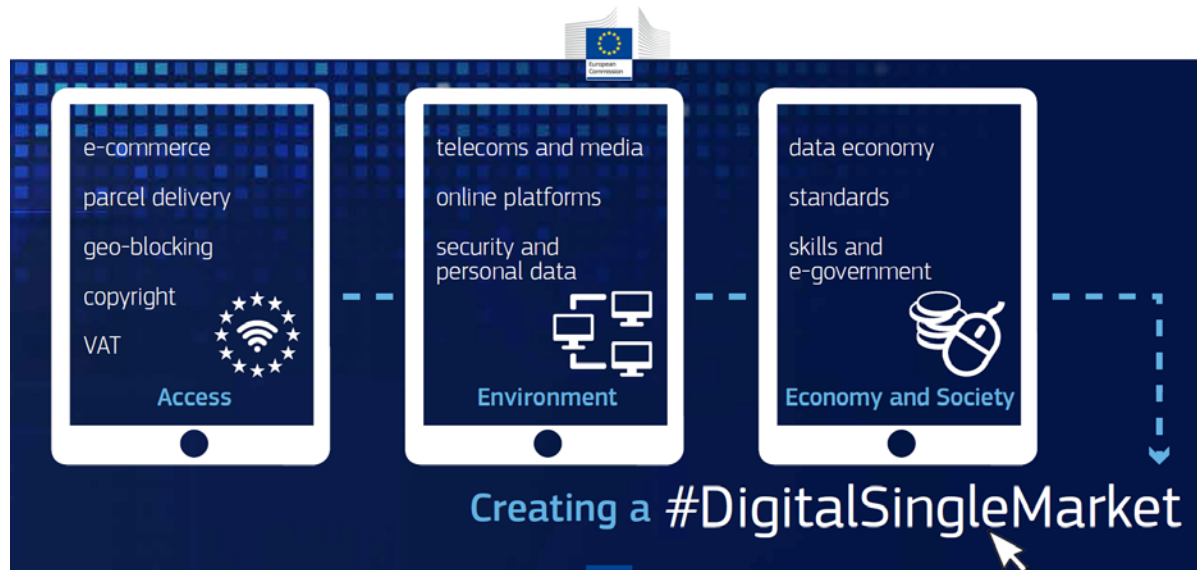
Unit B3, Cross-border Healthcare and eHealth
Health Systems, Medical Products and Innovation

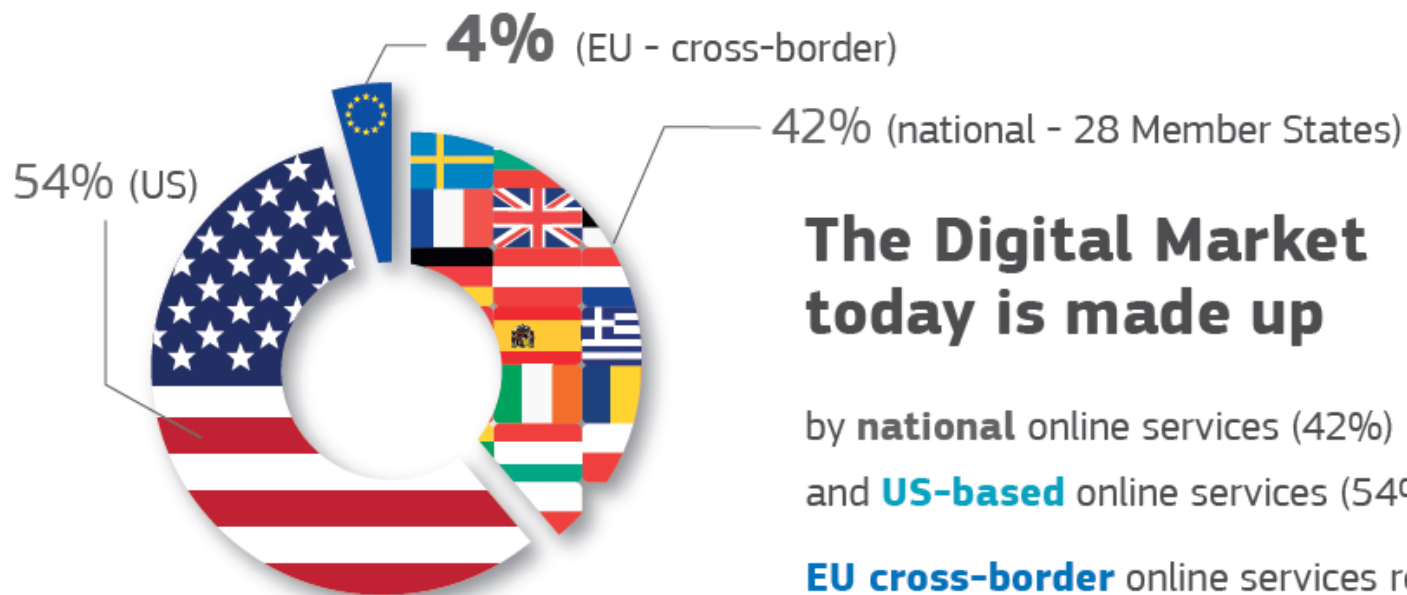
Table of content

1. Digital Single Market
2. eHealth Action Plan 2012 - 2020
3. EU-funded research on Big Data
4. Big Data study for future follow-up

1. Digital Single Market (DSM)

- To make the EU's Single Market ready for the digital age
- One of the top priorities of the Juncker administration
- Covers a broad area (incl. health) and is built on 3 pillars





The Digital Market today is made up

by **national** online services (42%)
and **US-based** online services (54%)

EU cross-border online services represent only 4%

1.a (e) Health in the DSM

- Health technology is considered critical in improving the EU's competitiveness
- Condition is to provide essential interoperability and standardization in the health sector (mHealth, telemedicine)

The Commission will launch an integrated standardisation plan to identify and define key priorities for standardisation with a focus on the technologies and domains that are deemed to be critical to the Digital Single Market, including essential sectoral interoperability and standards in areas such as health (telemedicine, m-health), transport (travel planning, e-freight), environment, and energy. The Commission will revise and extend the European Interoperability Framework.

1.b Digitizing Industry

Set of measures to help European industry, researchers and public authorities to make the most of the growth potential of a digital data-driven economy:

- Priority standards to boost digital innovation
- Modernise digital public services: An eGovernment Action Plan
- The European Cloud Initiative to give a virtual environment to store, manage, analyse and re-use a big amount of research data

Big data and cloud



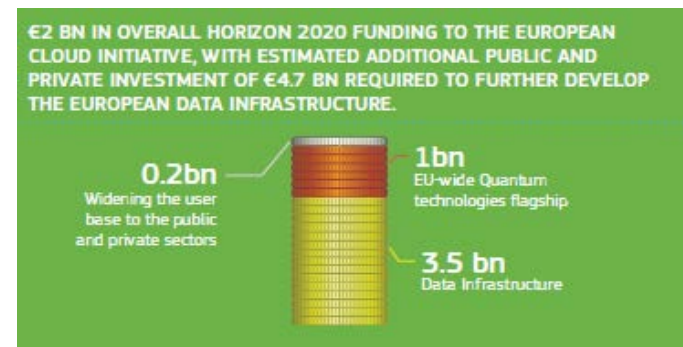
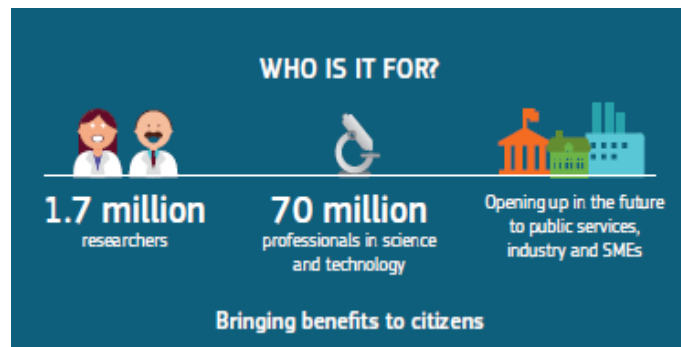
Digital data stored in cloud:
2013: 20% - 2020: 40%

The use of big data by the top 100 EU manufacturers could lead to **savings worth €425 billion**

Studies estimate that, by 2020, big data analytics could boost EU economic growth by an additional **1.9%**, equalling a **GDP increase of €206 billion**

1.c European Cloud Initiative

- Strengthening the EU's position in data-driven innovation and improve competitiveness
- Based on 3 pillars in support of European science, industry, and public authorities:
 1. World-class data infrastructure to store and manage data
 2. High-speed connectivity to transport data
 3. More powerful High Performance Computers to process data



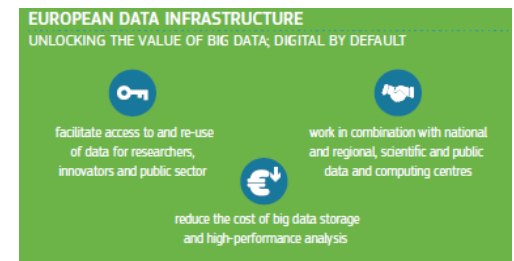
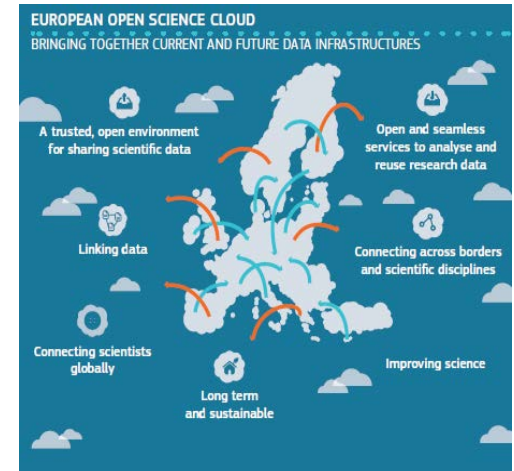
1.c.a How to achieve this

European Open Science Cloud

- Virtual environment, open and seamless services for storage, management, analysis and re-use of research data, across border and scientific disciplines (for free!)
- Could be used for education and training purposes in higher education

European Data Infrastructure

- Deploying high-bandwidth networks
- Deploying supercomputing capacity necessary to effectively access and process large datasets



1.d. Other initiatives supporting Big Data

- The EU strategy on the data-driven economy
- Funding research and innovation activities in the field of "Big Data" and "Open Data"
- The communication "Connectivity for a European Gigabit Society" recognises connectivity as an essential enabler of the data economy
- Free Flow of Data Initiative



2. eHealth Action Plan 2012-2020

The eHealth Action Plan (eHAP) has the following objectives:

- Achieving wider interoperability of eHealth services
- Support research, development and innovation in eHealth and wellbeing
- Facilitate the uptake and ensuring wider deployment
- Promoting policy dialogue and international cooperation on eHealth at global level

2.a Future of the eHAP

- Many activities to bring objectives into fruition are met or currently on-going
- eHealth Network played a pivotal role
- Superseded (integrated) by the Digital Single Market
- Could give sectorial implementation to the Digital Single Market strategy



3. EU-funded research on Big Data

The Commission has allocated € 2 billion under Horizon 2020 to invest in research and innovation for the first 4 years under the call Personalising Health and Care.

This call will:

- improve understanding of the causes and mechanisms underlying health, healthy ageing and disease
- improve ability to monitor health and to prevent, detect, treat and manage disease
- support older persons to remain active and healthy
- and test and demonstrate new models and tools for health and care delivery

3.a Horizon 2020 projects

- Topic: Big Data supporting public health
- 4 projects funded:
 1. MIDAS: develop an integrated solution that allows the users to tap into evidence-based actionable information from various sources for health policy
 2. EVOTION: use of Big Data in supporting a holistic approach to hearing loss
 3. BigO: use of Big Data for childhood and adolescent obesity
 4. PULSE: use if Big Data from different sources to change public health from a reactive to a predictive system

3.b Public-Private Partnership (1)

- Big Data Value Association: a PPP with 24 members of large and SME industry, and research
- Budget: Investment expected to reach approx. € 2.5 billion
- Period: 1 January 2015 – 31 December 2020
- Objective: boost European Big Data Value R&D&I and to foster a positive perception of Big Data

The PPP aims to:

- Strengthen competitiveness
- Promote wide and best uptake of Big Data Value technologies and services
- Establish excellent science base

3.b Public-Private Partnership (2)

- Innovative Medicines Initiative (IMI 2): world's biggest public-private partnership
- Budget: € 3.3 billion (€ 1.638 billion H2020, € 1.425 EFPIA companies, € 213 million other life science industries or organisations)
- Period: 2014- 2024
- Objective: Improve health through development of, and patient access to, innovative medicines
- Big Data for better outcomes programme with a focus on blood cancers and Alzheimer's disease

4 Big Data study for future follow-up actions

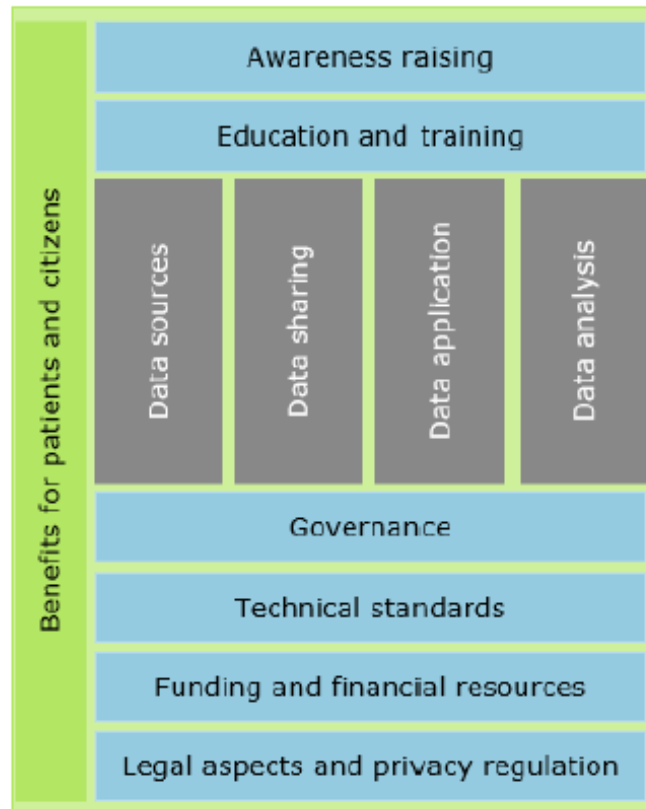
Reasons for this study:

- Council conclusions under Luxembourg presidency (2015) on *"open, data-intensive and networked research as a driver for faster and wider innovation"*
- More attention to the potential benefits of Big Data in healthcare
- Health-sector is a data-intensive sector
- The analysis of data can be used to improve therapies and medical practices

4.a Objectives

- Propose priorities related to Big Data in the practice of public health, telemedicine and healthcare
- Provide 10 examples of use of Big data in public health, telemedicine and healthcare

4.b. Overview of fields of policy & recommendations



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We recommend

- Handbook on European law relating to access to justice**
 A handbook to assist those who do not specialise in the area of access to justice. It is aimed at lawyers, judges, and other legal practitioners, as well as non-governmental organisations. It can also be used for legal research or public advocacy purposes.
- Urban Europe**
 What are the EU's largest cities? Which EU country has the largest percentage of urban inhabitants? What are the most popular city destinations for tourists? All this - and much more - in a new statistical booklet.
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 Exploited workers are paid €1 or less per hour, work 12 hours or more per day for six or seven days a week, live in harsh conditions and have no holidays or sick leave. This is happening in the EU.

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Digital Single Market *@DSMeu*
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Roger Lim *@rgr_lm*



Roger.LIM@ec.europa.eu

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