



Digital Single Market Technologies and Public Service Modernisation Package - DSM

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European
Commission

BIG DATA ...

GROWTH OF THE DIGITAL UNIVERSE, 2010-2020

Digital Universe in Exabytes (Billions of Gigabytes)





European
Commission

GLOBAL CONNECTIONS III



Map of scientific collaborations from 2005 to 2009
Computed by Olivier H. Beauchêne @ Science-Metrix, Inc.
Data from Scopus, Inspec, Compendex, and ISI/Webof

Tapping into the potential of data

- Data is not always open (research and private)
- Lack of interoperability
- Fragmentation
- Demand for a world-class High Performance Computing infrastructure to process Data
- Re-use of Data





Digital Single Market Technologies and Public Service Modernisation Package - DSM

- **Digitising European Industry**
- **European Cloud Initiative**
- Priorities for ICT Standardisation
- E-Government Action Plan





Digital Single Market Technologies and Public Service Modernisation Package - DSM

- **Digitising European Industry**
 - launched on 19 April 2016 the first industry-related initiative of the Digital Single Market package
 - focusing on five priority areas: 5G, cloud computing, internet of things, data technologies and cybersecurity
 - co-financing the testing and experimentation of technologies to accelerate standards setting including in relevant public-private partnerships



Digital Single Market Technologies and Public Service Modernisation Package - DSM

- **European Cloud Initiative**
will provide European science, industry and public authorities with:
 - a world-class data infrastructure to store and manage data
 - high-speed connectivity to transport data
 - ever more powerful High Performance Computers to process data





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- **European Cloud Initiative**
 - A **European Open Science Cloud** (EOSC) will offer a virtual environment to store, share and re-use the large volumes of information generated by the big data revolution
 - Will be underpinned by the **European Data Infrastructure** (EDI), deploying the high-bandwidth networks and the supercomputing capacity necessary to effectively access and process large datasets stored in the Cloud.





1. European Open Science Cloud

Unlocking data

- Make all scientific data produced by the Horizon 2020 Programme open by default.
- Raise awareness and change incentive structures
- Interoperability and data sharing (RDA)
- Fit-for-purpose pan-European governance structure
- Cloud-based services for Open Science
- Enlarge the scientific user base





1. European Open Science Cloud Commission Actions

- Global policy → Level playing field in scientific data sharing and data-driven science
- Integrate and consolidate e-infrastructure platforms

2016

- Default → Open research data
- Update of the 2012 CR on access to and preservation of scientific information
- Connect priority European RI to the European Open Science Cloud

2017

- Action Plan for scientific data interoperability



2. European Data Infrastructure Underpin of the EOSC

- Objective → Exascale supercomputer in 2022 based in EU technology between the top three.
- PRACE, GÉANT, PPP on HPC, ECSEL, IPCEI
 - **Foster EU technology (low power)**
 - **Integration of technologies (High connected to mid and low computing centres)**
 - **GÉANT: seamless, high-speed, reliable and secure connectivity**
- Widen HPC user base
- Tackle lack of interoperability
- Define governance structure





2. European Data Infrastructure Commission Actions

- Develop and deploy a large scale European HPC, data and network infrastructure

2016-20

- Acquisition of two co-designed, prototype exascale supercomputers and two operational systems

2018

- European Big Data Centre
- Upgrade of GÉANT

2016



Financing the Digital transformation

- Sources:
 - **Horizon 2020 Framework Programme for Research and Innovation (Horizon 2020)**
 - **Connecting Europe Facility (CEF)**
 - **European Structural and Investment Funds (ESIF)**
 - **European Fund for Strategic Investments (EFSI)**
- Additional requested funding:
 - **European Data Infrastructure** **€3.5 billion**
 - **Quantum Technologies** **€1 billion**
 - **Widening Access and building Trust** **€0.2 billion**

