Session III.
From vision to implementation:

Governing the Open Science Cloud
for standards, interoperability and integration

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Setting the scene

- EOSC Definition
  - "The European Open Science Cloud (EOSC) would offer 1.7 million European researchers and 70 million professionals in science and technology virtual environments with free at the point of use, open and seamless services for storage, management, analysis and re-use of the data that are linked to their research activities, across borders and scientific disciplines."

- EOSC Objective
  - "The European Open Science Cloud aims to create a trusted environment for hosting and processing research data to support EU science in its global leading role."

Governance

- **Structures, processes and policies** by which the functions within an organization are directed and controlled so as to yield business value and to mitigate risk (A. Finkelstein)"

- It includes **stakeholders involved in the value chain** and is needed to ensure **conflict resolution and adherence to the principles**

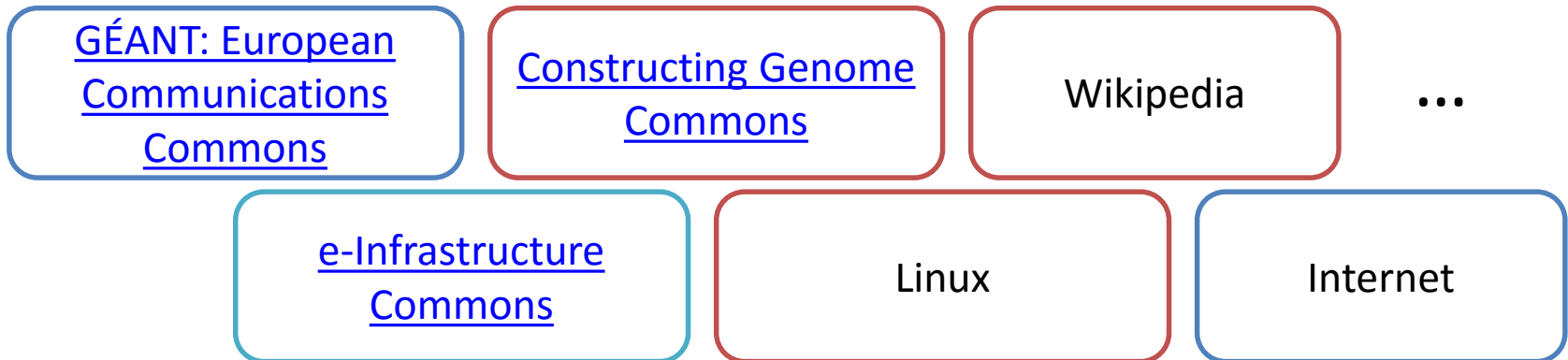- EOSC: **multi-stakeholders, lightweight**

Which stakeholders?

- Funders
- Consumers
- Service providers and composite service providers (those who aggregate services into complex, value added solutions for their customer)
- Integrators: offer data, applications, software and system integration products for both customers and IT service platform providers
- Consultants: provide consulting services for customers and providers
- Regulators and standardization bodies
- ?

Example: Commons dimensions for an Online Creation Community

1. Collective mission or goal of the process
2. Cultural principles and social norms
3. Design of the platform of participation
4. Conditions for self-management of contributions
5. Formal rules or policies for community interaction
6. License
7. Decision-making and conflict resolution systems
8. Infrastructure provision

Source: "Governing Knowledge Commons" book (2014), p.288

Commons

Institutionalised community governance of the production and/or sharing of a particular type of resource (from natural to intellectual)

GÉANT: European Communications Commons

Constructing Genome Commons

Wikipedia

...

e-Infrastructure Commons

Linux

Internet

Knowledge resources: Commons vs. Proprietary

Knowledge Resources		Principles	Design	Outcomes
• Data • Software • Biomedical knowledge • Creative works • Scientific publications • Climate technology	**Commons**	• Sharing • Common goods • Cooperation • Complex human motivation	• Copyleft & non exclusive licensing • Conditions on public funding • Internet regulation encouraging de-centralisation	• Broad access • Public knowledge goods • Democratic shared infrastructure • Cooperative peer to peer innovation • Diffusion Ecological knowledge
	Proprietary	• Protection • Private property • Commodi-fication • Personal gain maximization	• Exclusive licensing • No conditions on public funding regarding knowledge sharing • Free market allowing for centralisation	• Exclusion • Private knowledge goods • Private infrastructure & monopolies • Data commodifica-tion • Limited use of sustainable technology

E.g. Human Genome Project and Bermuda Principles

E.g. Biological patents

Source: The EU and the Commons: a Commons approach to European Knowledge policy

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Internet Governance

Internet Governance:
A Multi-Stakeholder System

- Governments
- Business sector
  - Domain-name companies, Internet Service Providers, telecommunication companies, software companies, Internet content companies
- Civil society
  - WGIG (Working Groups on Internet Governance)
- International organisations:
  - ITU (International Telecommunication Union), WSIS (World Summit on Information Society), UNESCO (UN Educational, Scientific and Cultural Organization), UNDP (United Nations Development Programme)
- The Internet community
  - Institutions and individuals who have developed and promoted the Internet since its inception
- ICANN
  - Internet Corporation for Assigned Names and Numbers

Internet Governance: Layers

- The "physical infrastructure" layer
  - Where the information travels

- The "code" or "logical" layer
  - Controlling the infrastructure

- The "content" layer
  - The information that signals through the network

Internet Governance:
Mix of Commons and Market

- Clear separation between
  - the parts of the system that are subject to private initiative and control
  - the parts that are subject to global coordination and nonexclusive access

- Internet combines
  - exclusive, private network facilities and services
  - open, non-proprietary standards
  - End-to-end design

Public-Private Partnerships (PPP)

Public-Private Partnerships

- Public procurement arrangement (business relationship) between the public sector and the world of business where risks, rewards and responsibilities are shared

- Used in particular at different stages of infrastructure projects where responsibilities are assigned for design, funding, construction, management, maintenance or operation of the infrastructure assets

Why Public-Private Partnerships in Horizon 2020?

- To solve problems together with industry
- To strengthen European industrial leadership
- To facilitate prioritisation of R&I in line with the Europe 2020 objectives and industry needs
- To leverage research and innovation elements
- To strongly commit industry to joint objectives

Questions

1. What needs to be governed in Open Science Cloud?

2. How do you foresee options for structuring the governance of the open science cloud?

   – What we can learn from other federated infrastructures such as the Internet?