Data layer

Service layer

Governance layer

-scale of scientific activity (data-driven science)

Physics

Life sciences

Earth sciences

Applied - engineering

Economics

Social sciences

Humanities

Citizen science

Lead users...

Scientific communities

...long tail

European Open Science Cloud

Bottom-up governance

Federation

Legacy and sustainability

Leverage of MS investment

Trust

IPR protection

Privacy and personal data protection

Big data analytics

Data fusion across disciplines

High performance computing

Data storage

Data access and re-use

Data manipulation and export

Data discovery and catalogue

EIROforum position paper
Challenges and Opportunities

- Research Infrastructure operators need more cost-effective approaches to collecting, processing, distributing and re-using the rapidly growing amounts of data being produced by their instruments.
- Existing services do not cover the full lifecycle of research from proposal submissions requesting access to Research Infrastructures, through to data acquisition, sharing and publication.
- Researchers are by-passing their in-house IT departments and publicly funded e-Infrastructures to make use of commercial cloud services.
- The Helix Nebula initiative has brought together research organisations, data providers and publicly funded e-infrastructures to develop a hybrid cloud model with procurement and governance components suitable for the dynamic cloud market.
- Procuring cloud services from providers on a pay-per-usage model via the operations budget rather than the capital budget offers both flexibility and scalability.
- Many research organisations that operate research infrastructures do not have the mandate to provide IT services to their users for the management, processing and long-term preservation of their experimental data and will require assistance to bridge the gap from data to knowledge acquisition.
- A European Open Science Cloud has the potential to greatly improve the provisioning of IT services for Research Infrastructures to address their big data needs.
- This position paper is a rallying call for adoption of such a strategic approach – within the EC and other funding bodies as well as the operators of Research Infrastructures.