The e-Infrastructure Commons

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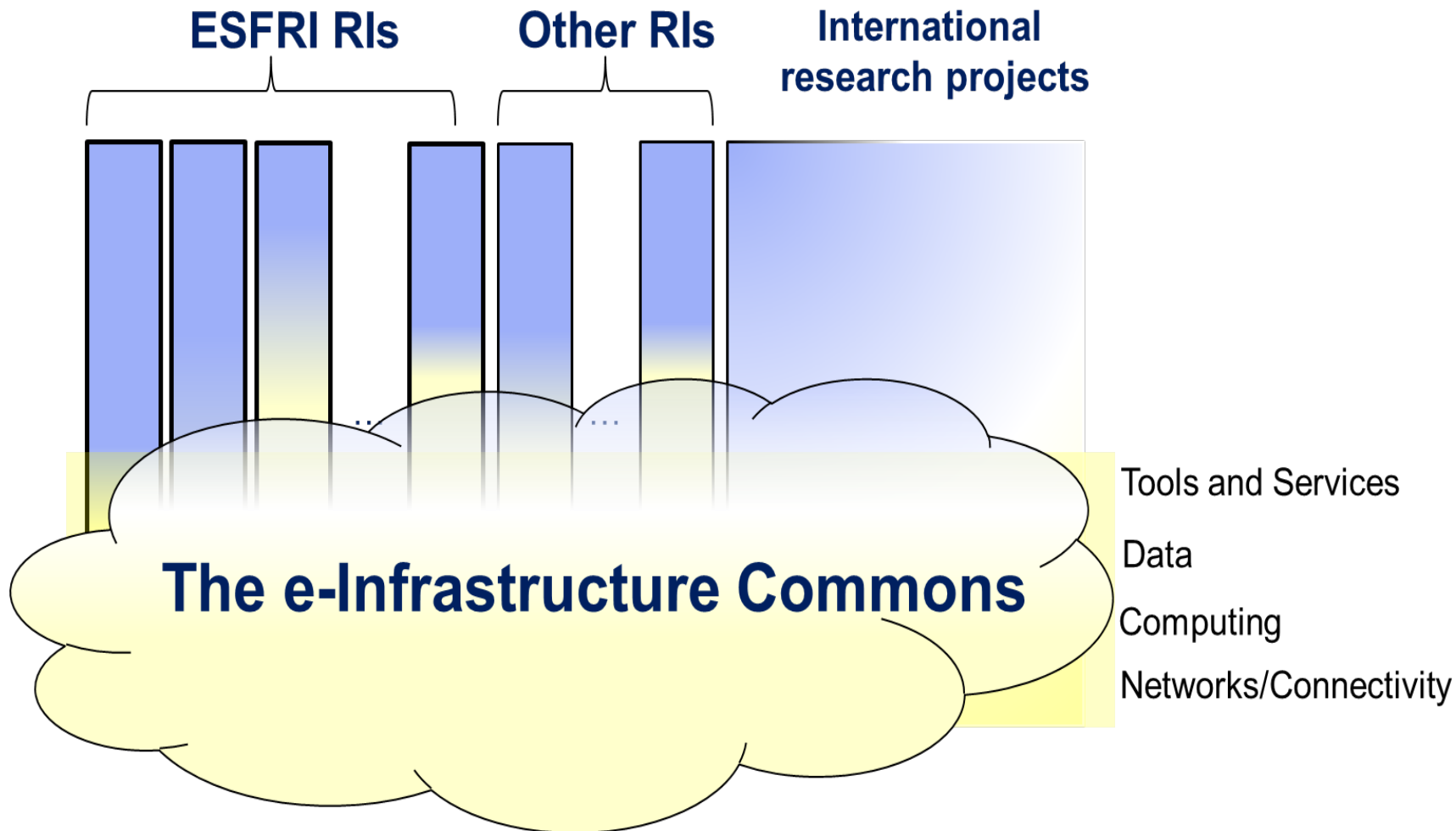
The e-Infrastructure Commons

An ecosystem of ICT services for scientific research

- attained through a joint strategic effort between users and primary strategic actors and suppliers,
- in which providers have the freedom to innovate and …
- where users enjoy the freedom to choose the services they need from a mix of public e-Infrastructure and commercial services, so that …
- users can focus on doing of science, in (international) research collaborations, whilst avoiding spending effort on the requirements to access various services;

e-IRG 2013 White Paper:
http://e-irg.eu/documents/10920/11274/annex_5.1_e-irg_white_paper_2013_short_version.pdf/bac42091-6940-4e82-b2ab-17ceef4881f8

The e-Infrastructure Commons

ESFRI RIs   Other RIs   International research projects

The e-Infrastructure Commons

Tools and Services

Data

Computing

Networks/Connectivity

The e-Infrastructure Commons

Buzzword compliance

"Commons"

"Cloud"

"Open"

"Data"

"Science""

Pick any two …

The e-Infrastructure Commons

Recommendations for strategic actors:

- International user groups (ESFRIs and other RIs): "organize yourself"
- International e-infra organizations: "team up!"
- National governments and funding agencies: "make strong building blocks"
- European Commission: "strengthen, regulate, coordinate"
- Existing e-infra providers: "innovate or perish"

Telling others what to do … that's our task as e-IRG!

(And that is what we expect from you in the breakout session).

So, let's have a closer look
at these recommendations
and their follow-up

User communities: organize yourself!

- Drive the long term strategy for their e-Infrastructure needs;
- Use their purchasing power to stimulate the development of suitable, effective e-Infrastructure services;
- Participate in the innovation of e-Infrastructure services;
- Contribute to standards;

Some indications of progress:

- e-Needs questions in ESFRI Roadmap application;
- Increasing awareness within user communities of data quality, data management, data handling and consequences for e-infrastructure requirements;

In this workshop: ELIXIR and KM3NeT.

e-infrastructure organizations: team up!

- Join forces and share common challenges towards serving the European user communities, avoiding duplication of efforts in:
  - Outreach to and involvement of user communities;
  - Services registry, discovery and provisioning;
  - Financial, legal, business development and procurement;

I see good signs, such as:
- Position paper EUDAT, LIBER, OpenAIRE, EGI, GEANT on the Open Science Cloud for Research;
- Joint involvement in innovative projects, such as AARC;
- e-Infrastructure Joint Forum (initiative from EGI and GEANT);

More on this in the panel discussion tomorrow!

National governments: strong building blocks!

- Provide a basic funding level for the national e-Infrastructure, in particular devoted to its continuous innovation;

- Empower and fund national user communities for the use of e-Infrastructure services, enabling them to influence the development of the national e-Infrastructure;

- Remove existing national regulatory or political constraints for accessing publicly funded e-Infrastructures for private research and public-private research ventures;

- Provide input for the strategy setting and coordination bodies for their national e-Infrastructures;

- Encourage the actors in the national e-Infrastructures to collaborate and join forces with their counterparts in other countries and at EU level;

National governments: strong building blocks!

In short …

Competiveness Council May 28-29, European Council conclusions on *open, data-intensive and networked research:*

ESFRI is invited to explore mechanisms for better coordination of Member States' investment strategies in e-infrastructures, covering also HPC, distributed computing, scientific data and networks.

[… a challenge which ESFRI will address jointly with e-IRG …]

National governments: strong building blocks!

Some (unstructured) observations:

- In an increasing number of countries, e-infrastructure is appearing on national roadmaps for research infrastructures;
- Increasingly, actors in national e-infrastructure provisioning are teaming up (sometimes under joint umbrella organization);
- National research funders increasingly require data management paragraphs in research proposals;
- Balancing act:
  - setting (national) research priorities / funding research proposals;
  - funding national e-infrastructure;
  - relation national e-infrastructures with local institutions (universities etc.);

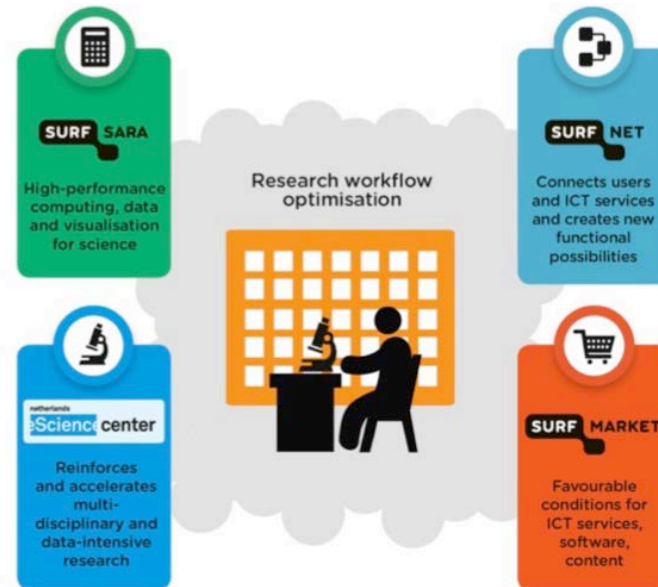Case studies in this workshop: Czech Republic, UK

National context (NL) – SURF

Compute
- Super computer (Cartesius)
- Beowulf cluster (LISA)
- GRID (GINA + LSG)
- HPC Cloud
- HADOOP

Storage
- Archive
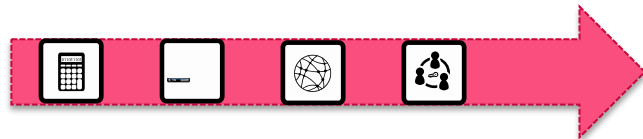- Grid (disk + tape)
- OwnCloud
- NoSQL / ElasticSearch

Network
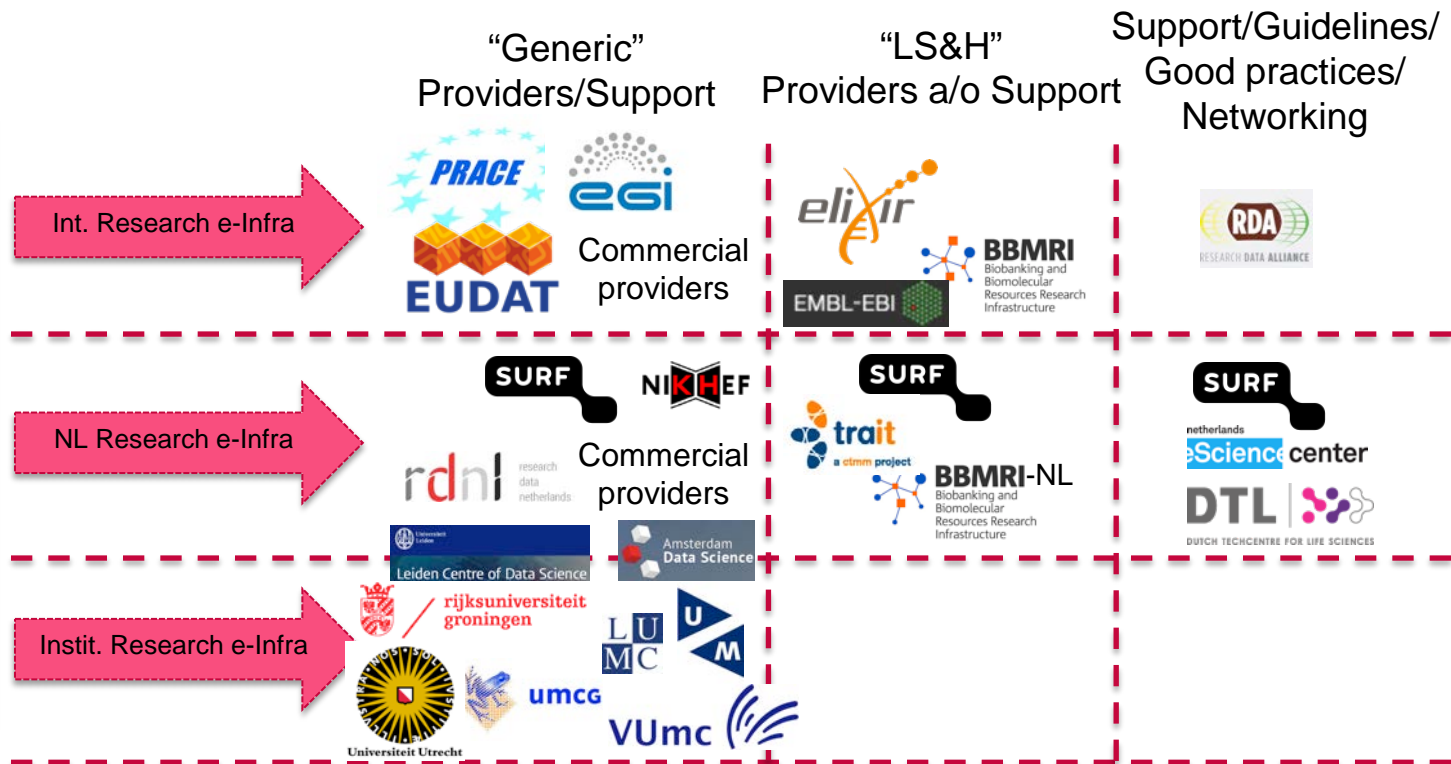- Routed
- Lightpaths (MSPs)
- Wireless

- SURFsara: NGI + super computing center
- SURFnet: NREN
- SURFmarket: collaborative procurement, licenses
- NLeSC: Netherlands eScience Center

- SURF is (as of 2015) a cooperative. Universities, University Medical Centers and research institutes are members.

National context (NL)
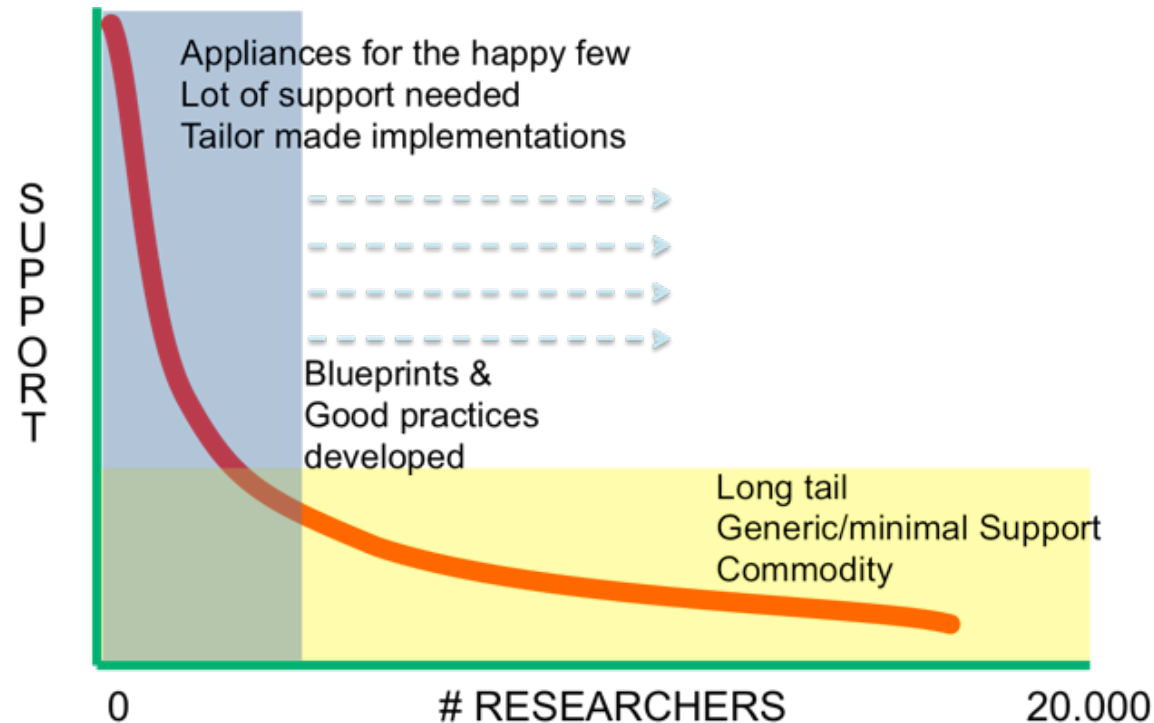

Where to get facilities?
Where do I find support, training and expertise?
What are the regulations I have to comply with?

"Generic" Providers/Support

"LS&H" Providers a/o Support

Support/Guidelines/ Good practices/ Networking

Funding bodies
Regulations
Collaborations

Int. Research e-Infra

NL Research e-Infra

Instit. Research e-Infra

Commercial providers

Commercial providers

National context (NL)

Challenges for SURF:

- Only a small group knows how to find us;

- Support model does not scale for Long Tail of Science;

- Position of SURF: local vs. national vs. international e-infrastructures;

- Access to resources found to be complicated;

Appliances for the happy few
Lot of support needed
Tailor made implementations

Blueprints &
Good practices
developed

Long tail
Generic/minimal Support
Commodity

SUPPORT

0   # RESEARCHERS   20.000

Support 4 Research (S4R): a 'local first' approach

a 2015-2018 program across all SURF subsidiaries to address these challenges
- Gather e-infrastructure requirements from research institutes:
  - facilitate interaction, discussion, pilots;
- Increase knowledge (at the institutes) on compute, data and network services:
  - integrated catalog for SURF and partner institutes;
- Strengthen bonds between research supporters:
  - community building, knowledge exchange;
  - improved support flow between SURF subsidiaries and institutes;
- Increase knowledge about e-infrastructures
  - knowledge exchange, seminars; involvement local information managers;

Leverage the strengths of the individual subsidiaries
- SURFnet: links with ICT directors at research institutes
- SURFsara: links with researchers & research support
- SURFmarket: knowledge of market services
- NLeSC: software development & research involvement

EC: strengthen, regulate, coordinate

- Establish a European harmonised framework for the funding of e-Infrastructure innovation;

- Empower and fund European user communities, such as the ESFRI projects, to influence the development and use of transnational access to the e-Infrastructure;

- Enable and promote the use of Structural Funds for e-Infrastructure development in less favoured areas;

- Provide input for the European strategy setting and coordination bodies and their umbrella forum;

- Strive towards harmonisation to avoid regulatory conflicts with existing regulations for (among others) state aid or competition rules;

- Provide clear guidelines for 'regulation proof' participation of private research in the use of e-Infrastructure services

*1. **National e-infrastructure coordination:** encourage the development of strong national e-Infrastructure nodes and their co-operation / coordination for improved and extended European e-Infrastructure operation and provisioning of services.*

*2. **European e-Infrastructure coordination:** encourage and support initiatives from e-Infrastructure organisations to jointly address issues around coordination of governance, sustainability, procurement, legal issues, business models and inclusiveness in a coordinated way.*

*3. **Horizontal services:** encourage further innovation based on development and implementation of generic reusable tools and services to service user needs (e.g. AAI, PID, (meta)data standards, service discovery, reference models for interoperability, training).*

*4. **Transnational ease of use**: stimulate service portfolio harmonisation inside and across countries including actions directed to encourage the development of federated service delivery systems.*

*5. **Commercial services:** stimulate actions to develop models and solutions for the federation of commercial services in the e-Infrastructure ecosystem.*

*6. **Well organized user communities:** continue to encourage European user communities, such as ESFRI or FET Flagship projects, but also other segments of e-infrastructure users, to organize themselves with respect to formulating their e-infrastructure requirements and eventually to position them to pay for those services.*

Our WP16/17 recommendations (June 2014)

Meanwhile the Work Programme 2016-2017 is published …

Theme 1: integration and consolidation of e-infrastructure platforms supporting European policies and research and education communities;

Theme 2: prototyping innovative e-infrastructure platforms and services for research and education communities, industry and the citizens at large; both platform driven and user driven.

Yes, integration is encouraged, but some separation still exist …

More on this in Augusto's presentation …

Enough to discuss!

Thank you.