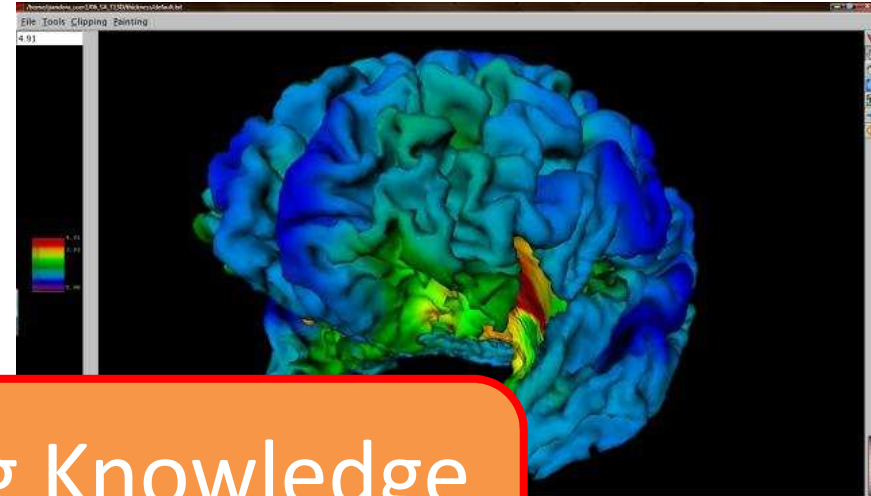
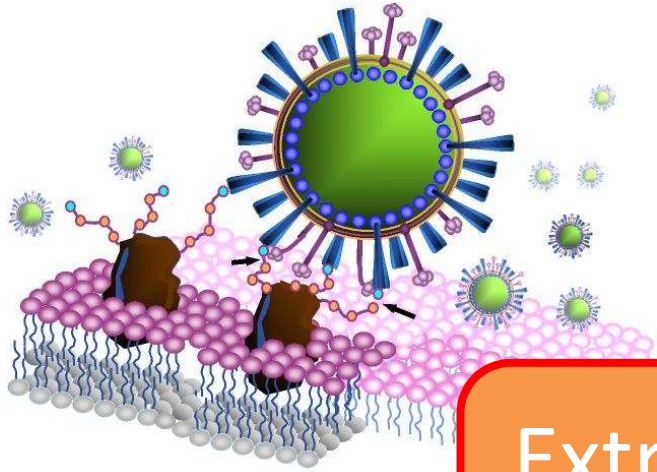
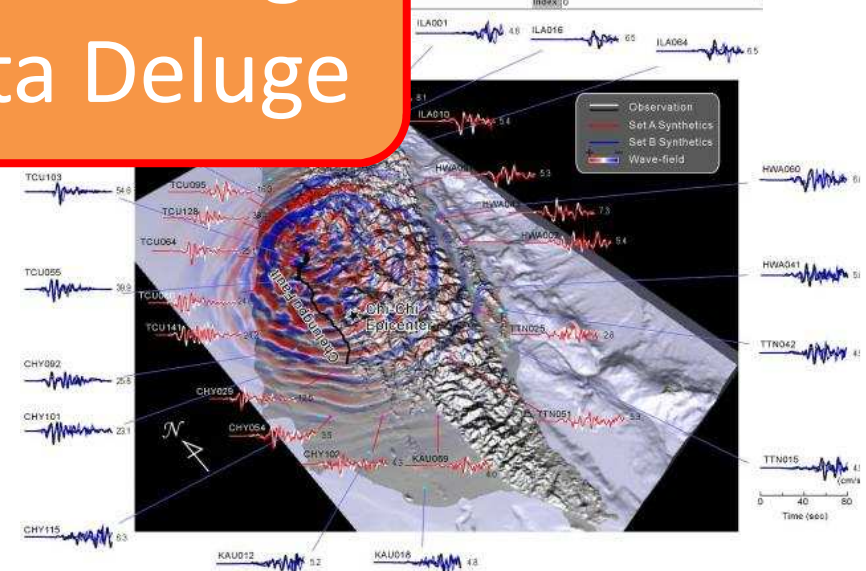
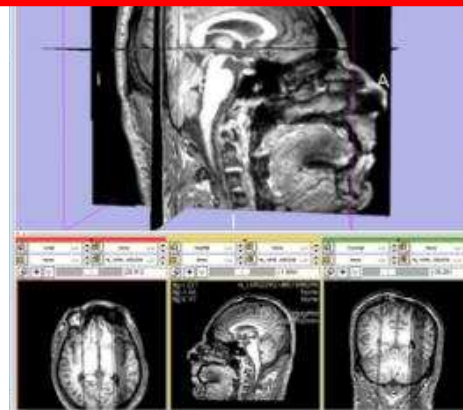


# EGI: A grass roots perspective

Steven Newhouse  
Project Director, EGI.eu



Extracting Knowledge  
from the Data Deluge

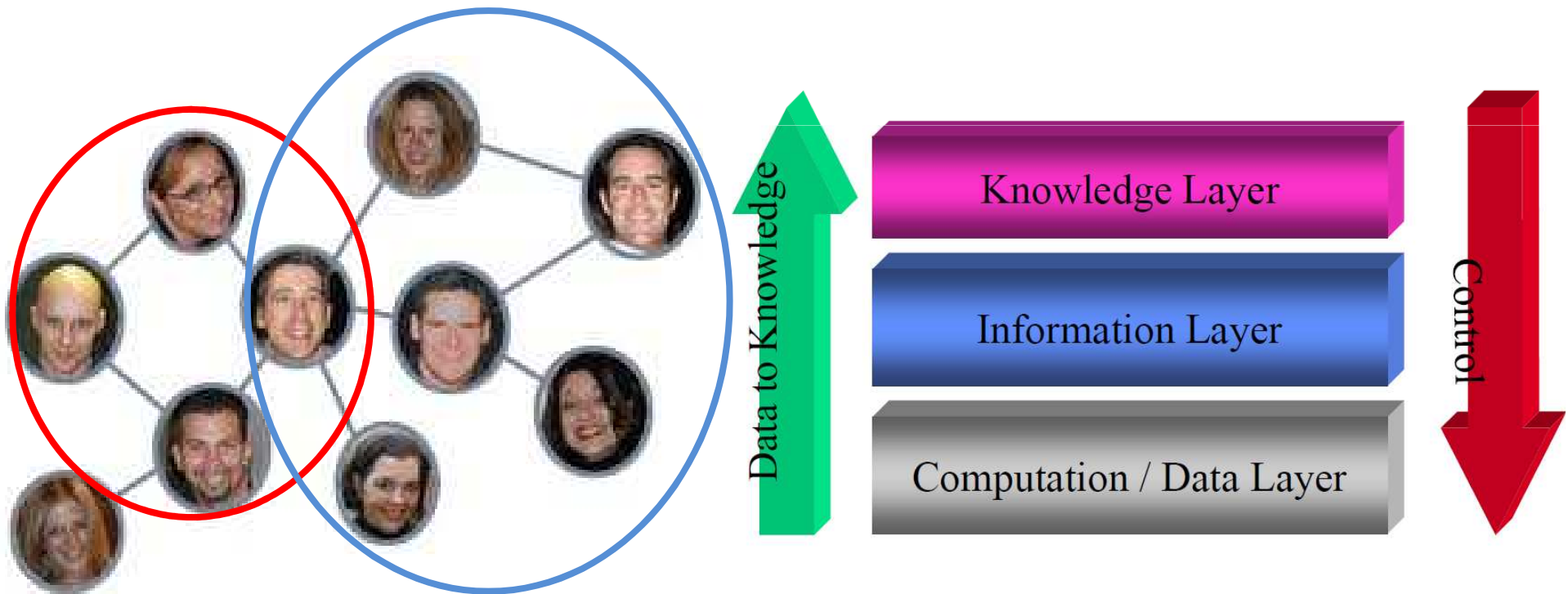


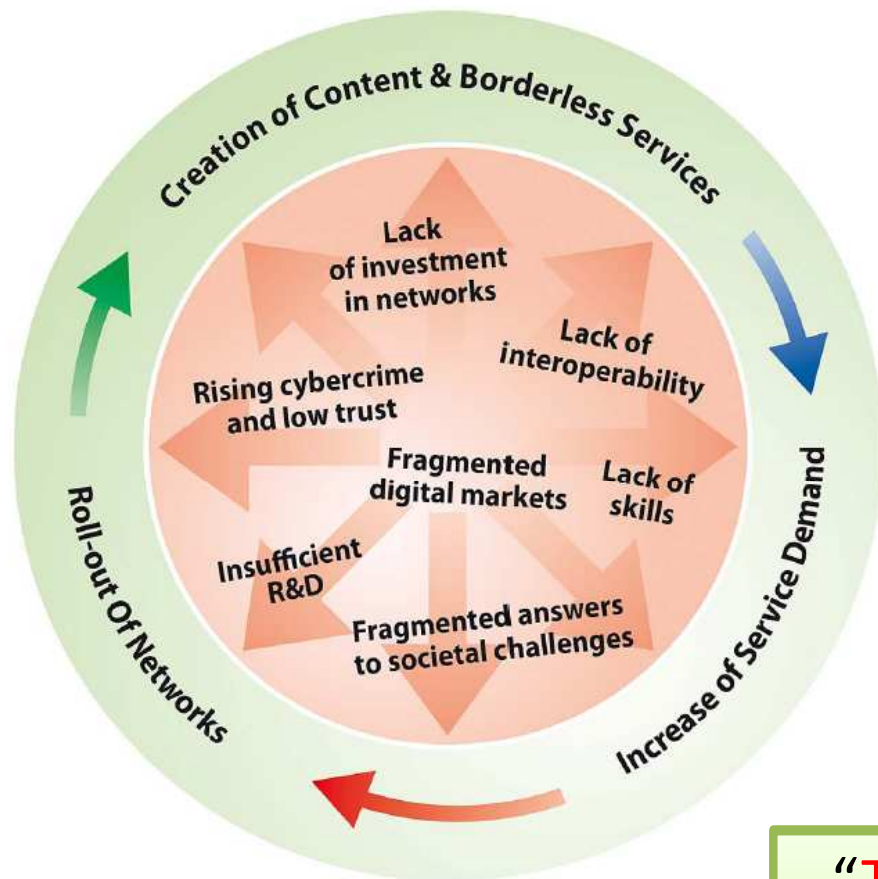
- It goes beyond High Energy Physics
  - Over 40 research infrastructures in ESFRI
  - Across all research communities & organisations
- Medical Records
  - Genome \$3B & 10 years → \$5,000 & 24hrs
  - Scans, Xrays, etc.
  - Mobile medical monitors
- From Humanity
  - TV, radio, documents, videos, etc.
  - Analysis and understanding



# Exploiting the Data

- Driven by international collaborations
- Data driven sharing at & analysis at scale





Digital Agenda for ~~Europe~~ **the UK**

- Borderless Services
- Interoperability
- Supporting Innovation

remove barriers to  
the free movement  
of knowledge

“The UK should also build its innovative advantage in key areas through reinforced e-Infrastructures (i.e. JANET & NGS)”

End-User Applications

Networking

Resources

Desktops

HTC Grids

HPC Grids

Petascale  
HPC

EGEE

PRACE

- EGI is a federation of NGIs
  - NGS is a federation of sites
  - University a federation of clusters
- Focus on collaboration & access
  - It is not about a single technology or resource
    - gLite vs. Globus, HTC vs HPC, Clouds vs. \*
- Leverage our buying power and influence
  - Collect requirements from & for the community

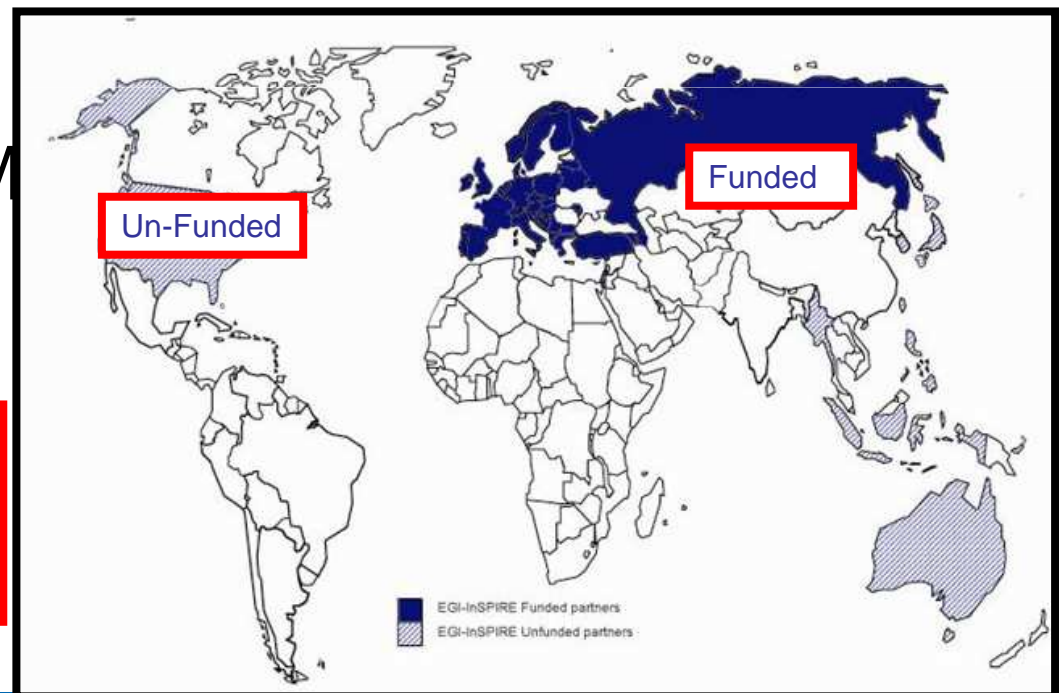


## Integrated Sustainable Pan-European Infrastructure for Researchers in Europe

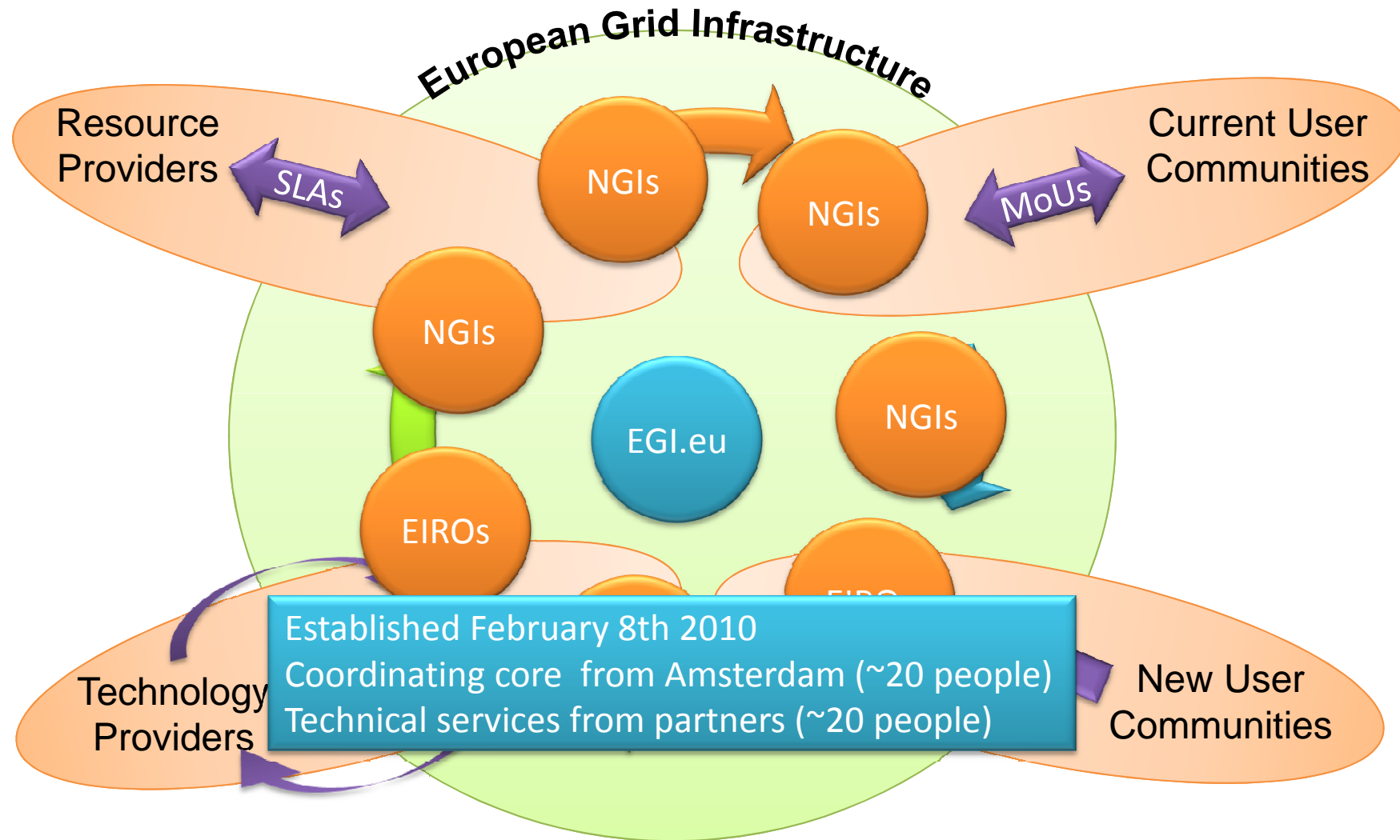
- A 4 year project with €25M EC contribution
  - Project cost €72M
  - Total Effort ~€330M
  - Effort: 9261PMs

### Project Partners (51)

- EGI.eu, 40 NGIs, 2 EIROs
- Asia Pacific (8 partners)



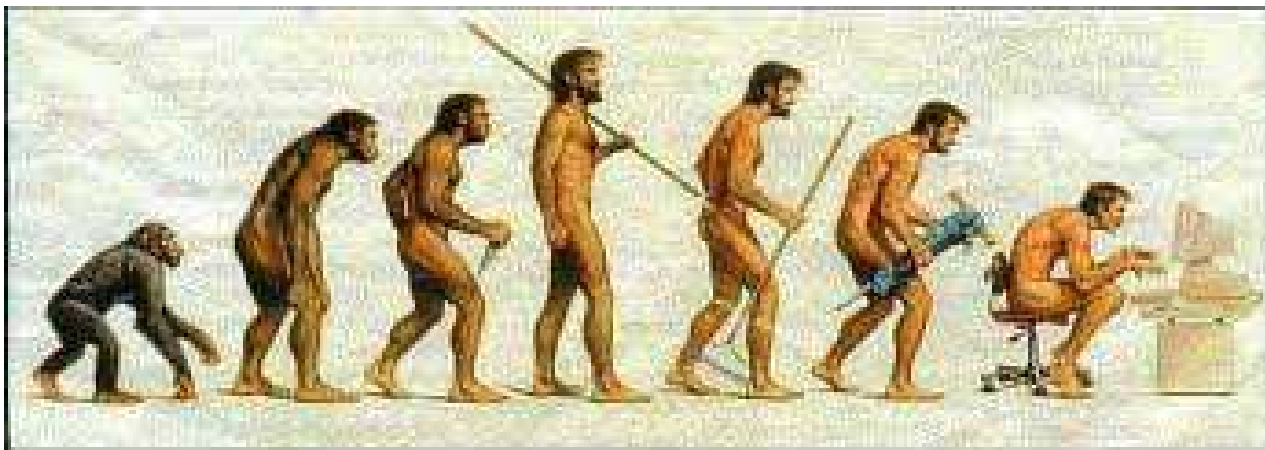
# A Virtuous Service Cycle



- Deploy Technology Innovation
  - Distributed Computing continues to evolve
    - To include: Grids, Desktops, Virtualisation, Clouds, ...
- Enable Software Innovation
  - Provide reliable persistent technology platform
    - Tools built on gLite/UNICORE/ARC/Globus
- Support Research Innovation
  - Infrastructure for data driven research
    - Support for international research (e.g. ESFRI)

- Sustainability of e-Infrastructures has not been clear  
**For multi-year projects this is a risk – addressed partially by EGI**
- Advances in ICT have matched data analysis needs  
**ESFRI and related projects will push these boundaries**
- Computation beyond the desktop is still very hard  
**Virtualisation and new computing models will simplify this task**
- Service offerings do not match needs of new users  
**Flexible federated production infrastructure that meets needs**
- Value, benefits and costs need to be exposed  
**Compare costs & features of public & commercial offerings**

- Will always be evolving
- Adopt best practice where it makes sense



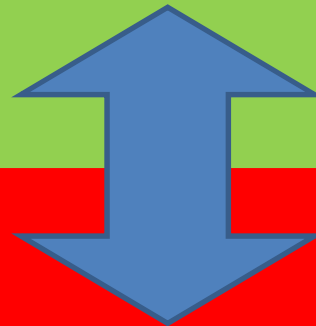
**Somewhere, something went terribly wrong**



- Compute resources near storage resources
  - Co-locate the processing near the data
- ‘Free’ High Speed Networks
  - Massive bandwidth allows data to be moved
- Ability & processes to share resources
  - Over a decades experience of building trust
- Close links to data-oriented users
  - Data use and patterns unique to researchers

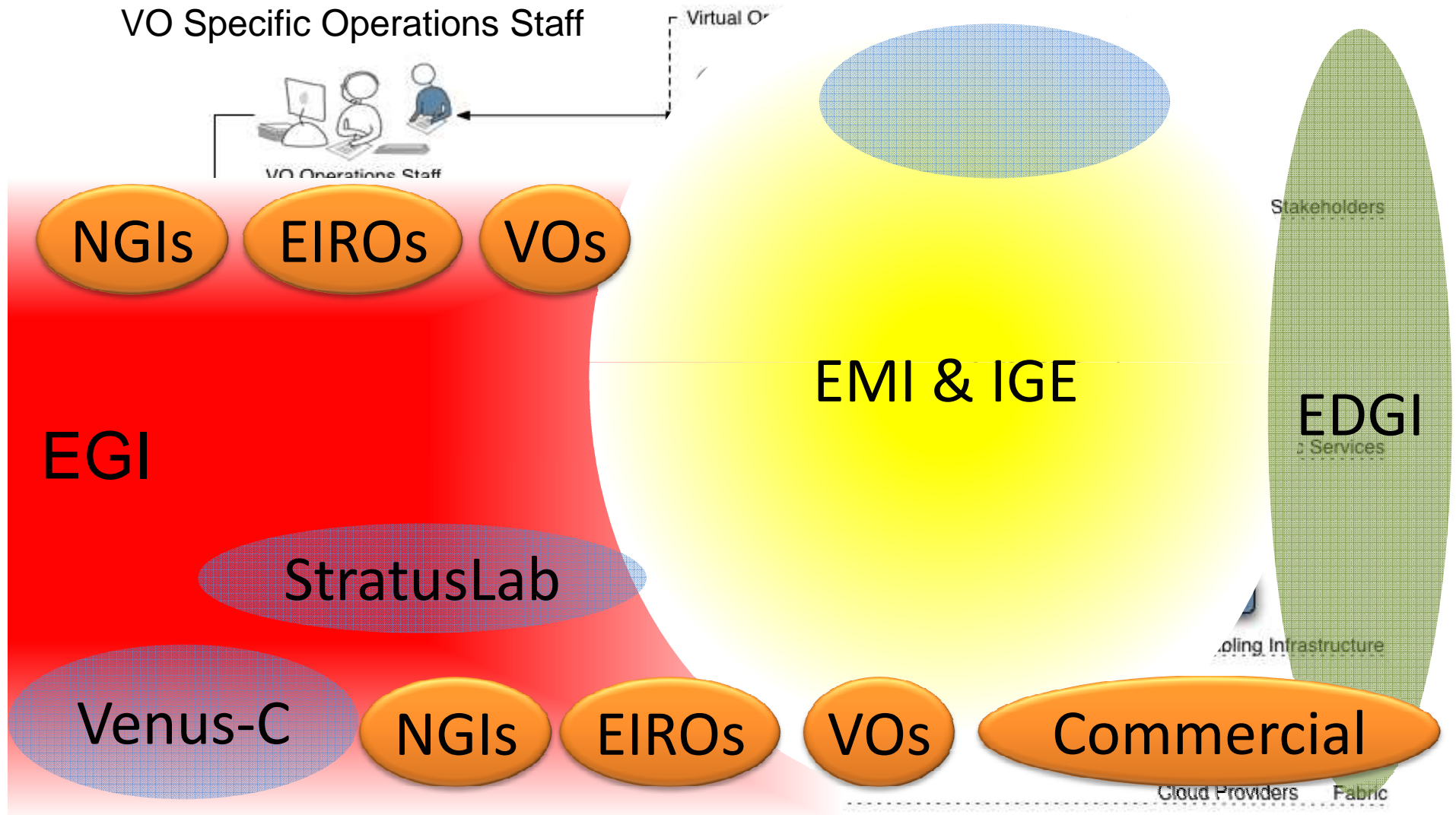
# A Virtualised Future?

End-User Technology Experts  
(National, European & Global Collaborations)



Infrastructure Providers  
(Research & Commercial – National, European & Global)

# A Virtualised Ecosystem



- Scale out to new communities with diverse needs
- Software environment defined & selected by the end-user
- Gradual migration from real to virtualised services
- Deployment of innovative ICT developed within Europe

- EGEE:
  - Demonstrated a production e-infrastructure
- EGI:
  - Provide a sustainable production e-infrastructure
- EGI.eu established in Amsterdam
  - Supported transition through EGI-InSPIRE
  - Moving towards sustainable coordination

# Questions?

The poster for the EGI User Forum 2011 features a blue background with a network of white lines and nodes, a central globe, and a building. The text is in white and blue. At the bottom left, there is a logo for the European Middleware Initiative (EMI) with three icons: a circuit board, a graduation cap, and a grid. Text on the right side of the poster provides details about the hosts and organizers.

**EGI User  
Forum 2011**  
**11-15 April**  
**Vilnius, Lithuania**

Hosts: NGI LitGrid, presented by  
Vilnius University and Baltic Amadeus  
infrastruktūros paslaugos (BAIP)

Organisers: AIM Group Baltic UAB

European Middleware Initiative

- Call for papers is now open
- See [uf2011.egi.eu](http://uf2011.egi.eu)
- Contact:
  - Steven Newhouse
    - [director@egi.eu](mailto:director@egi.eu)