

e-Infrastructure Governance

Management and International Aspects

- ❖ User Driven eInfrastructures
- ❖ Continuity vs. innovation potential
- ❖ PPP's full access to the e-RIs
- ❖ User interests vs. commercial interests
- ❖ Revoke the digital divide in Europe

Rene Belsø
belso@dcsc.dk

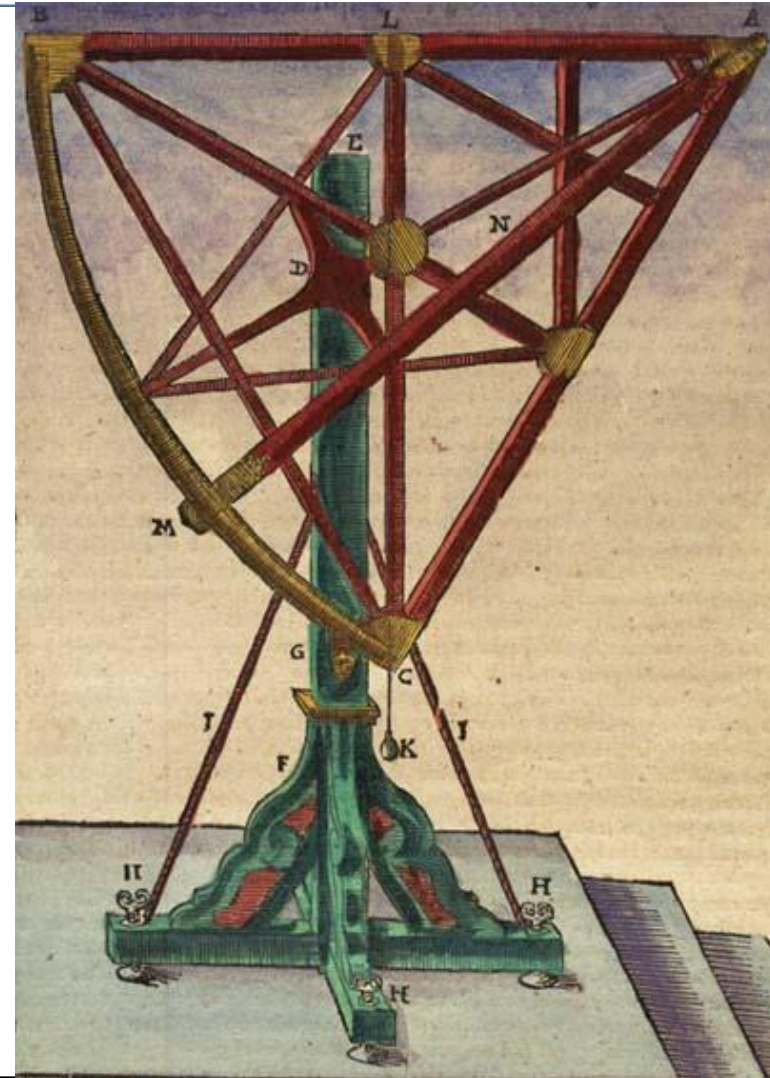
DCSC
www.dcsc.dk

User Driven eInfrastructures

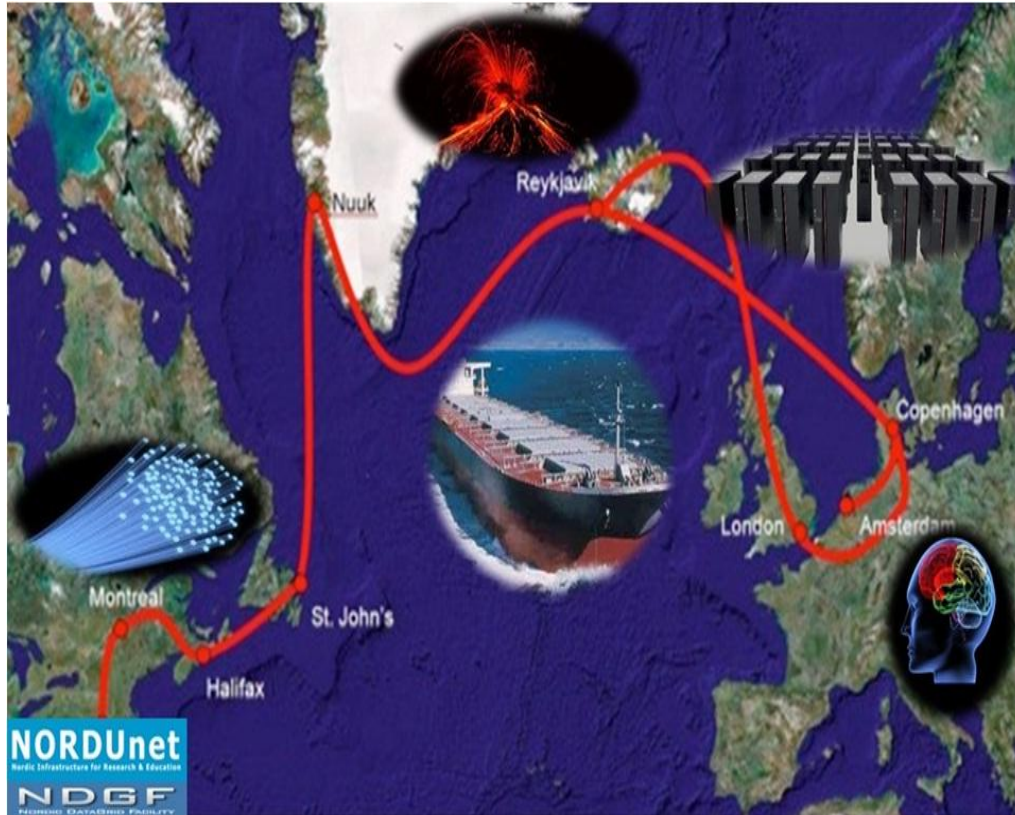
General purpose e-RIs vs. Specialized e-RIs

Important infrastructures attributes:

- eInfrastructures are or are not *general purpose*.
 - If eInfrastructures are specialized instrumentation for big VRCs ==> A need for researcher control of design and utilisation.
1. General purpose e-RIs ==> Computer Centre governed (but in an open market).
 - Fund computer centers to build trivial e-RI
 2. Specialized e-RIs ==> User Control ==> User governed ==> Funding to user.
 - Fund computer centers only via users, to build complex e-RI.
 - Or, Fund user VRC to build complex e-RI, as they see fit, with or without the local computer centre.
- ==> Changed role for computer centres



Important e-RI structural trends:



1. The Networks:

GÉANT has been a success.

- ==> Networks are excellent.
- ==> Time to harness the benefits.

2. The Energy:

Power consumption is exploding.

- ==> Computing should go to the power, not vice-versa.

However:

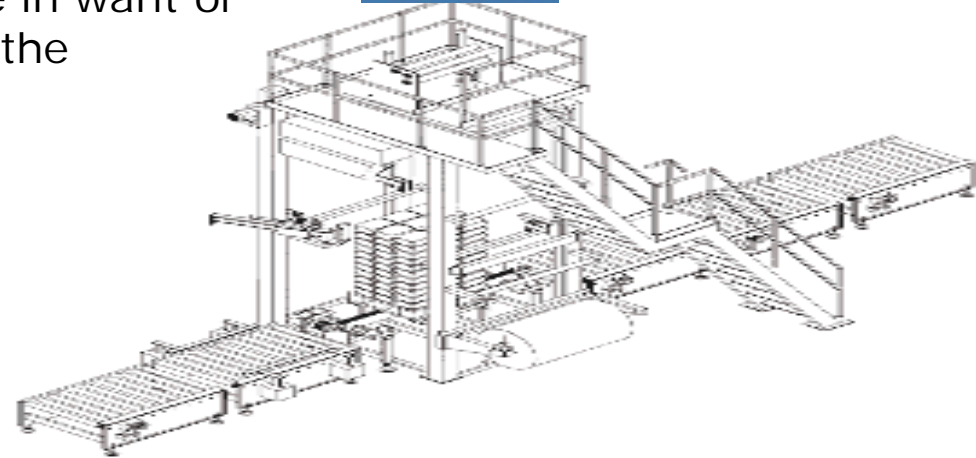
- a) ICT infrastructure provider monopolies have the same weaknesses as any other monopolies.
- b) Monopolies cannot efficiently tackle *Disruptive Technology*.

- ==> Governments must break computer centre **monopolies** (Possibly via user funding only).

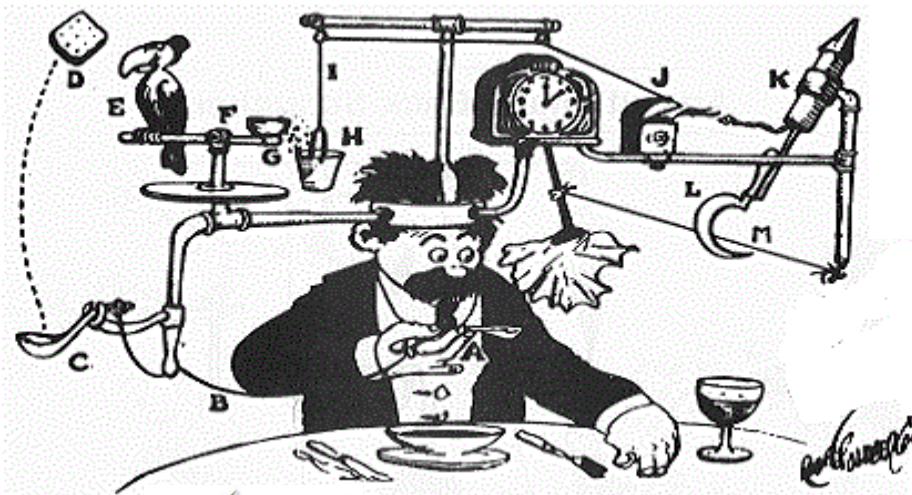
Continuity in the use of e-Infrastructures as opposed to exploiting the innovation potential

1. Production systems (in e-RIs) are in want of reliability, stability and low TCO of the production infrastructure.

NDGF NORDIC DATA GRID FACILITY Potato Packing Machine



2. Innovation systems (for e-RIs), on the other hand, are in want of risk capital, experimentation, diversity, and Darwinism.



Self Operating Napkin

==> Production systems cannot (easily) coexist locked-in with innovation systems. Productive and innovative e-RIs need separate governance cultures and funding structures.

- e-RIs have costs (TCO), that should be:
 - Known to all.
 - Transparent to the users and funding management.
- It might or might not be a good idea to ask users to pay the (possibly subsidies) costs.
- Researchers apply and get e-RI, only when they are good. If they then share it with private sector, it is justified (or paid for).

Securing user interests (e.g. open standards) when using commercial products or services

Build strong user communities (VRCs) that can

- Pursue open standards or press prices
- Seek or create alternatives

Be aware of (any type of) infrastructure monopolies. And, break them up, if they do not play the game as dictated.

Revoke the digital divide in Europe

- Subsidise e-RIs namely in digital divide prone regions.
- E.g. change GEANT to a development aid programme for the digital divide prone regions
- Let the Darwinism rule; make use of innovative but much cheaper project possibilities in digital divide prone regions – with a keen eye on “innovative output”, of course.

Concluding main points

Distinguish e-RI s between:

- High-end e-RI s
- Consumption e-IRs.

Empower high-end users of e-RI s by:

- A. Fostering and subsidizing virtual research communities (VRC), in their aim to use, build or improve e-RI s.
- B. Letting users control e-RI s. Or, even better: Let users get the funding (albeit possibly with some restrictions).
- C. Breaking up computer centre monopolies (make a European HPC market). Liberalize the HPC market.
- D. Hanes the *Disruptive Technology* in bandwidth and energy prices: Move to the energy, not visa-versa.