E-Infra for research: owned, leased or hybrid?

CSC (and me) at a Glance

- Founded in 1971 as a technical support unit for Univac 1108

- Connected Finland to the Internet in 1988

- Reorganized as a company, CSC – Scientific Computing Ltd. in 1993

- All shares to the Ministry of Education and Culture of Finland in 1997

- Operates on a non-profit principle

- Facilities in Espoo, close to Otaniemi campus (of 15,000 students and 16,000 technology professionals) and Kajaani

- Staff >230

- Turnover 2011 27,3 million euros

Per Öster
Director
Research Environments

EGI Council chair
EGI.eu board chair

Lesson 1: What goes up…
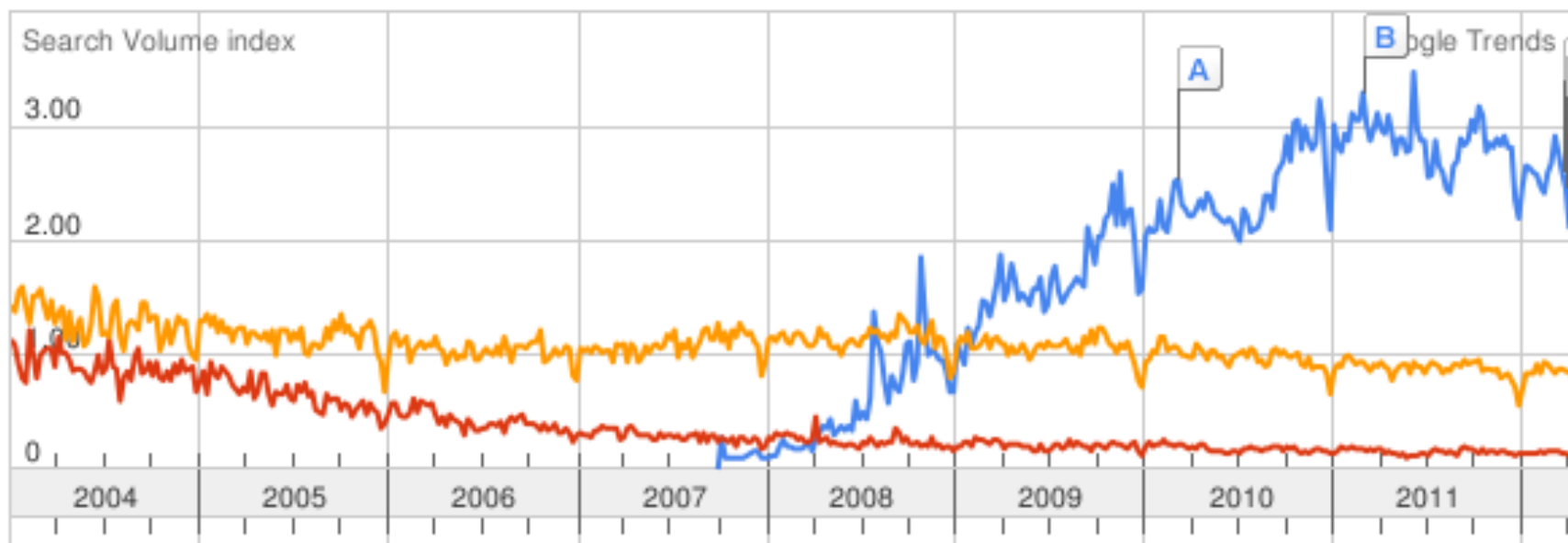

Caveat: No validation of presented curves

Lesson 2: There are no free lunches

$4,829-per-hour supercomputer built on Amazon cloud to fuel cancer research
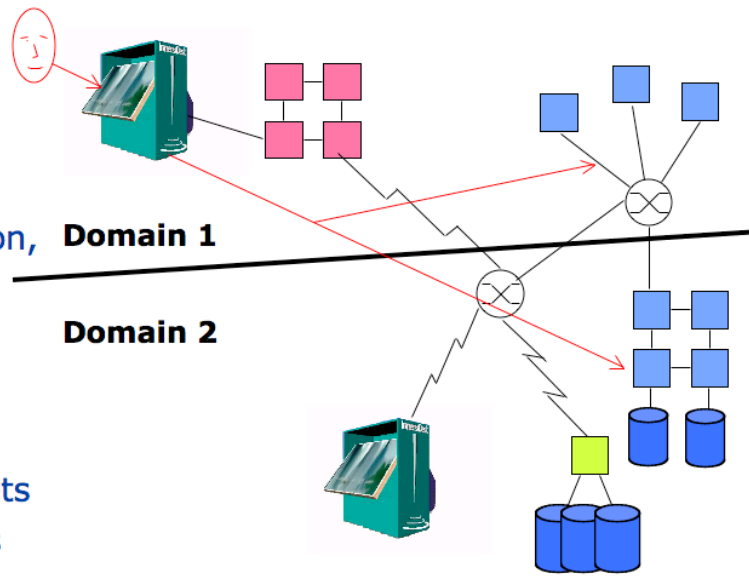
By Jon Brodkin | Published 3 days ago

- 51 132 cores
- 9.4¢ per core hour

- Rough comparison: 800USD/h (capex) + 100% (opex) = 1600 USD/h to buy and operate a similar cluster

Lesson 3: Collaboration requires horizontal infrastructure
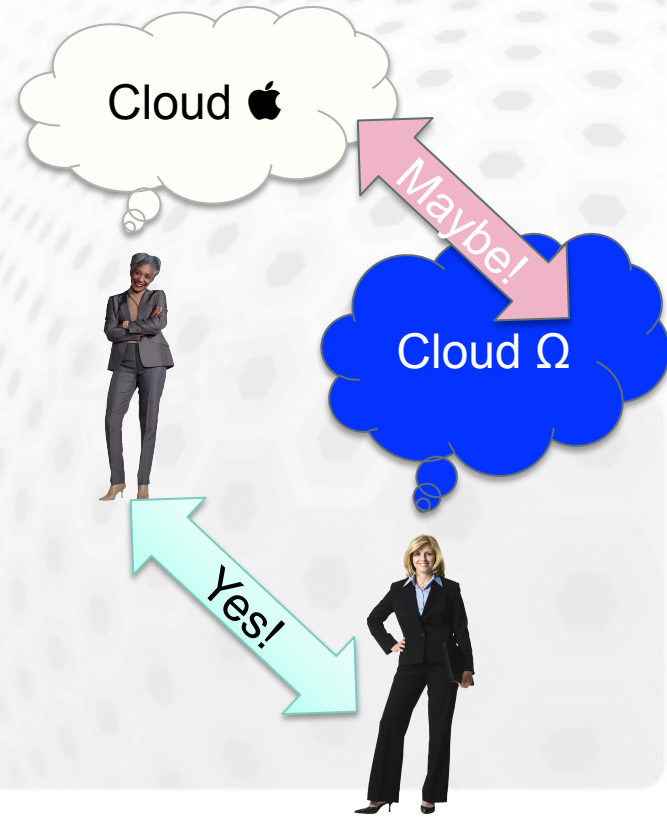
E-INFRASTRUCTURE : OWNED, LEASED OR HYBRID APPROACHES?
OR
COST EFFICIENT ICT FOR RESEARCH – HOW?

The Answers:

- Owned, leased or hybrid?
  - Yes!

- Cost efficient ICT for research – how?
  - Focus on researchers' productivity!
  - Innovate & develop for new and improved <u>services</u> and operations

Researcher's Productivity

- Researcher buy sequencing of 200 individuals resulting in 100TB of data
  - Cost: €600 000
- What is an efficient ICT cost to analyse, store and preserve this data?
  - 100%, 50%, 10%, 5%, or 1%
  - Answer:
    - >0% (but you will get very different answers from researcher and ICT provider)