

Is the Future now? The Governance Angle

Tivit Future Internet pre-conference



**Innovative solutions
for tomorrow's challenges**

Renesas Mobile Corporation

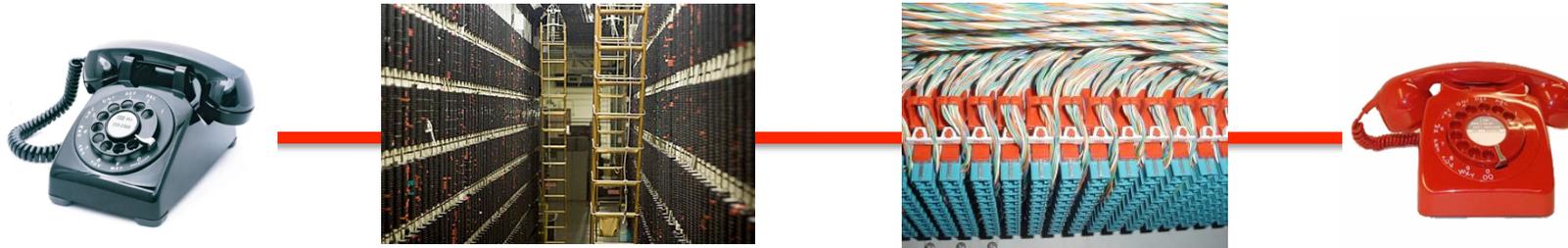
Dipoli, 30.5.2012

Jonne Soininen

Today's topic...



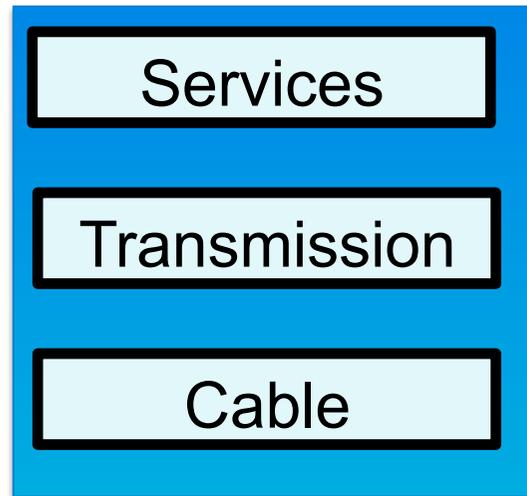
Yesterday - POTS



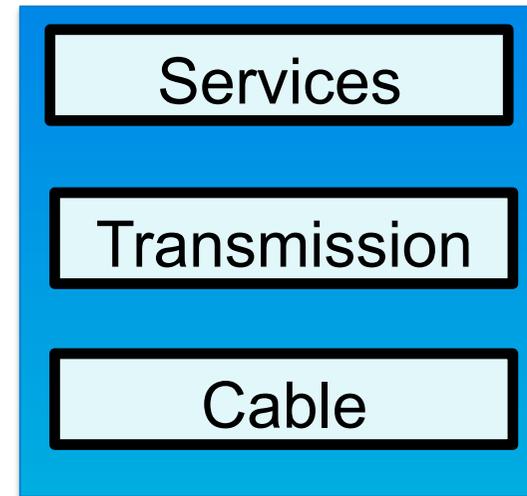
The Telephone Companies provided all services available. They also negotiated with each other regarding exchange of traffic, and developed all hardware. They were often government agencies/owned

Yesterday - POTS

Vertical Integration

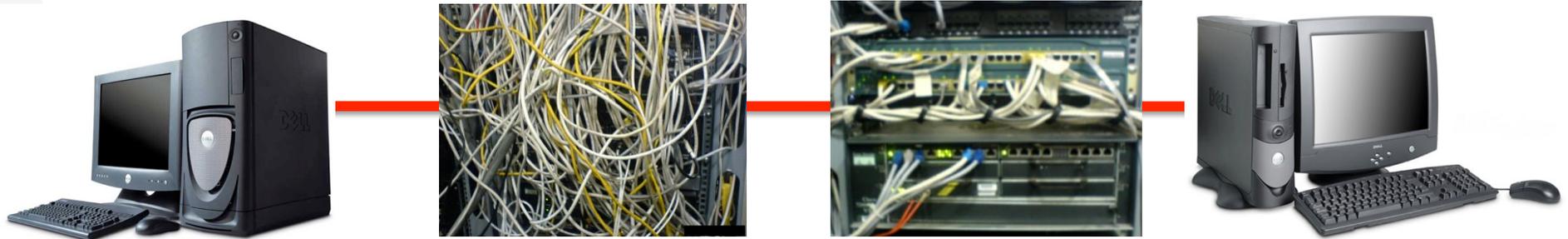


Provider A



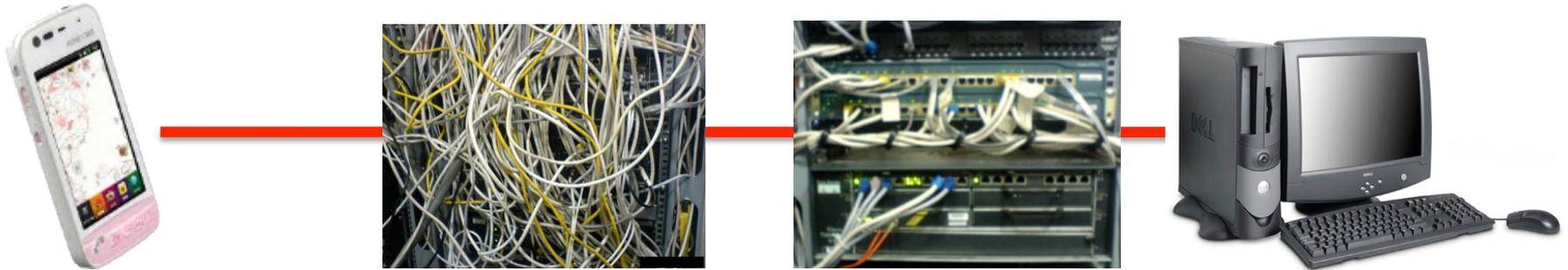
Provider B

Today – the Internet



It looks like we today have something very similar.
However, the similarity is only on the surface!

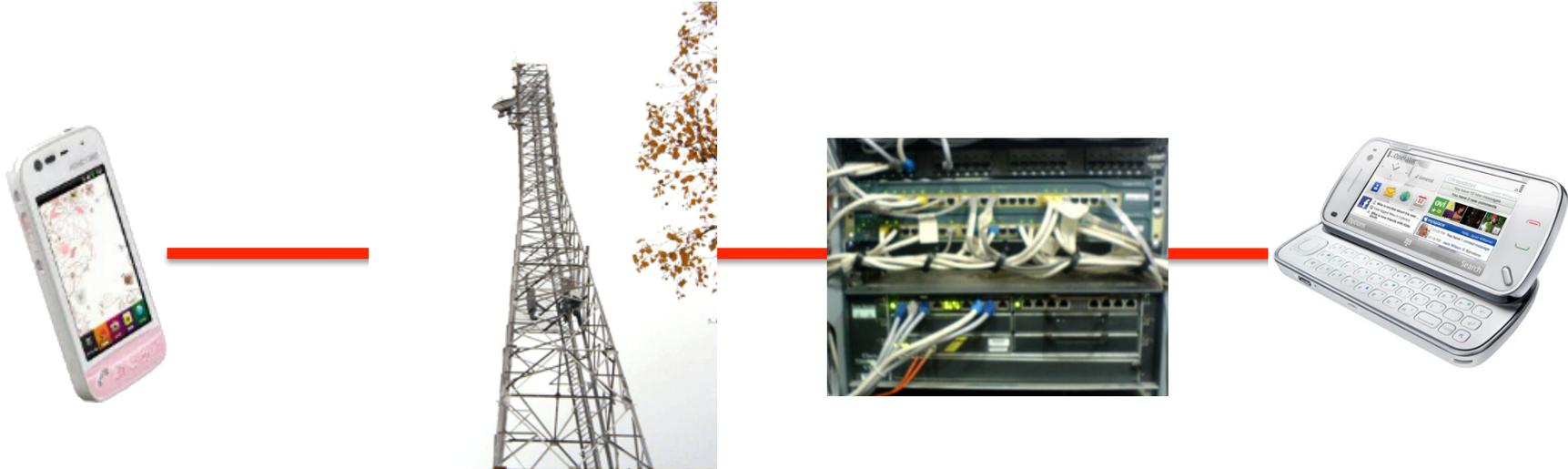
We can connect many things...



By using open standards, there are many competing products from competing companies that one can use to when communicating.

Open standards leads to innovation!

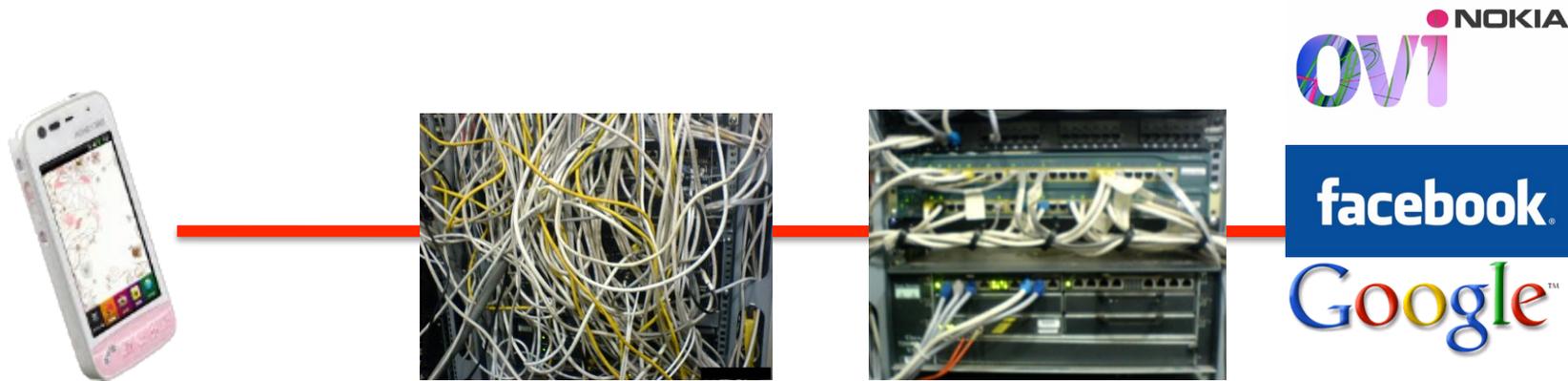
In many ways...



Different technologies can be used to access
the Internet

Mobile Broadband is growing enormously!

... and to many Services

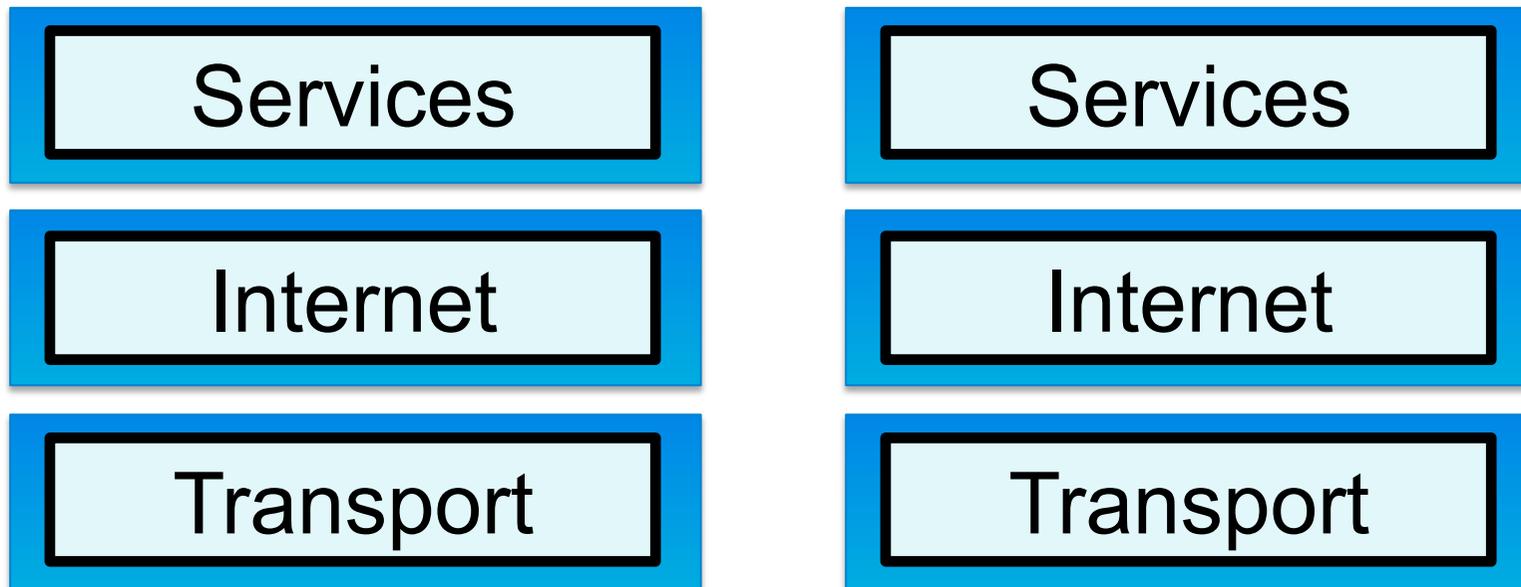


Not only are services provided by the operators, but also by special service providers that in turn are customers to operators.

Each one of us are responsible for our piece of the Internet!

Today

Layered Approach



We do no longer have vertical integration. Anyone providing a service can use anyone else's Internet.

Enabling technology principles

Design

- Packet switching
- End-to-End principle
- Layered Architecture
- Postel Robustness Principle
- Creative Anarchy

Operational

- Names
 - “there only can be one”
- Routing and Addressing
 - Routing based on addresses
 - Locator and Identity
 - Unique addresses

Enabling technology principles

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The hourglass...

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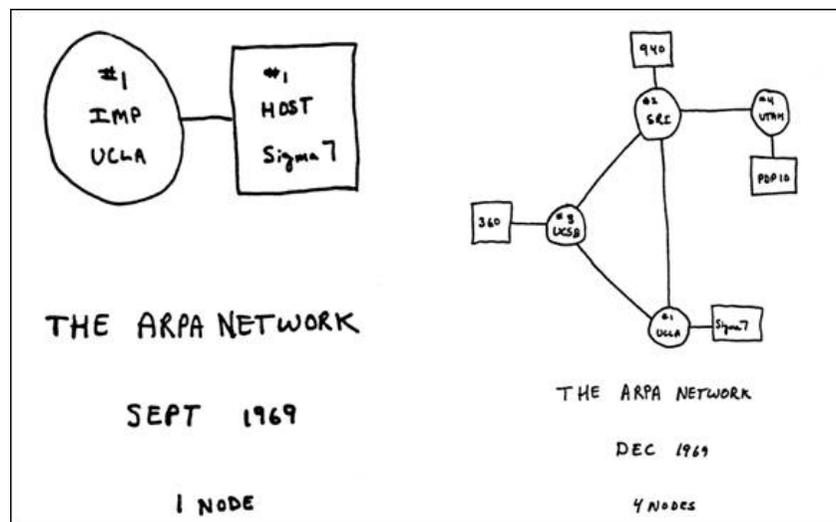
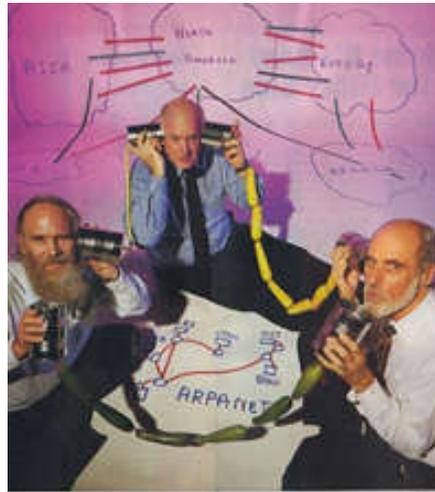
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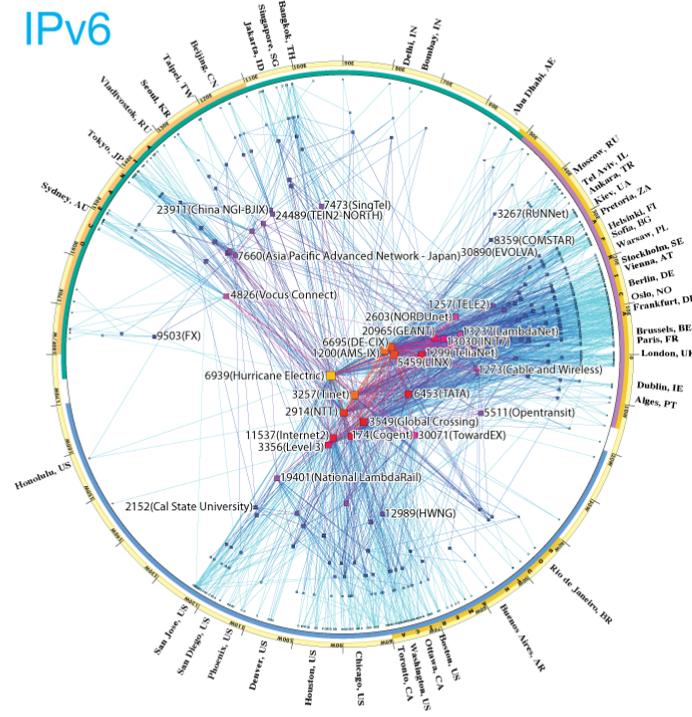
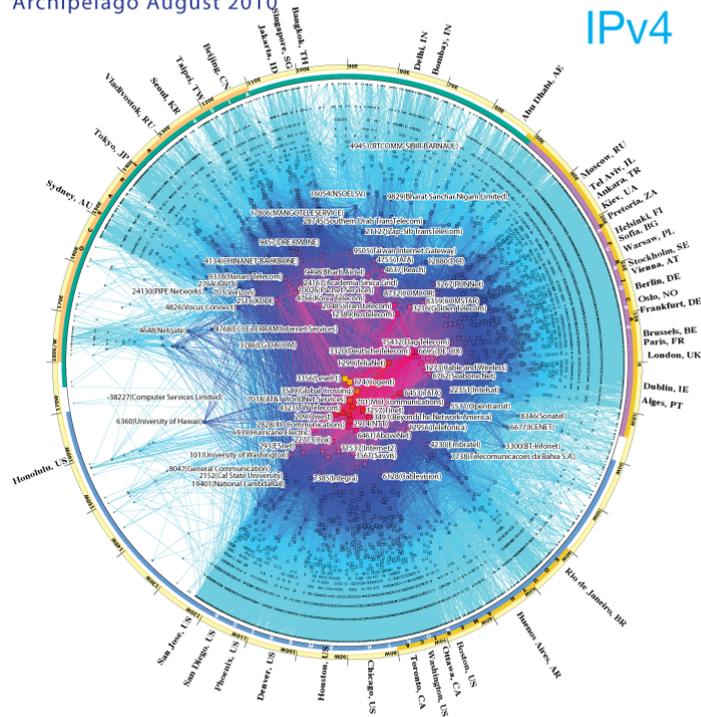
The Internet – it started small



But then it grew...

CAIDA's IPv4 & IPv6 AS Core AS-level INTERNET GRAPH

Archipelago August 2010



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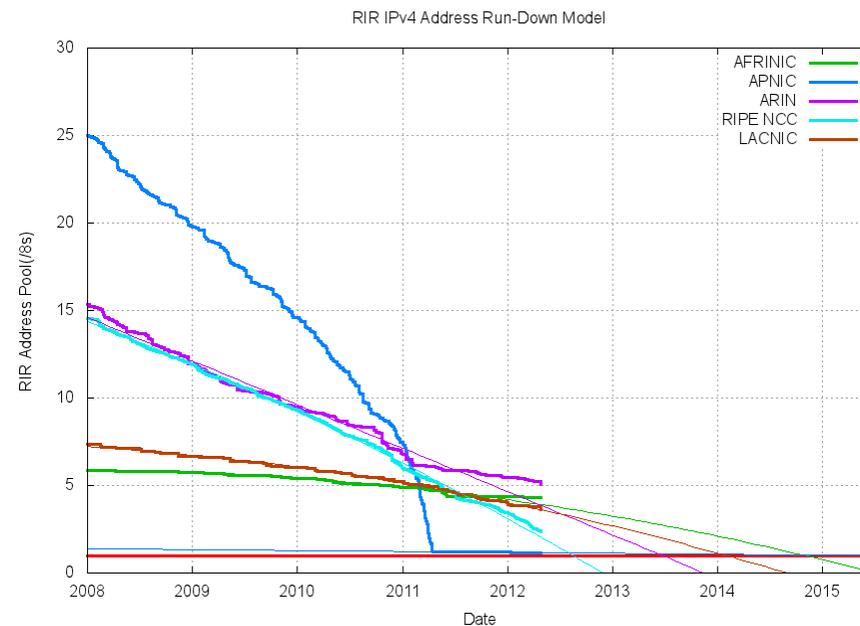
Some people are still not on the Net...



Exhaustion of Addresses

IANA Unallocated Address Pool Exhaustion: **03-Feb-2011**

RIR	Projected Exhaustion Date	Remaining Addresses (/8s)
APNIC	19-Apr-2011	1.1633
RIPENCC	13-Aug-2012	2.3619
ARIN	20-Jun-2013	5.0792
LACNIC	29-Jan-2014	3.6460
AFRINIC	31-Oct-2014	4.3280



Expansion of name space



ناتسکاپ
België Россия
新加坡 日本
Србија رصم
Česká România

.Which .sport
.Community .Canon
.what
.gay .Brand

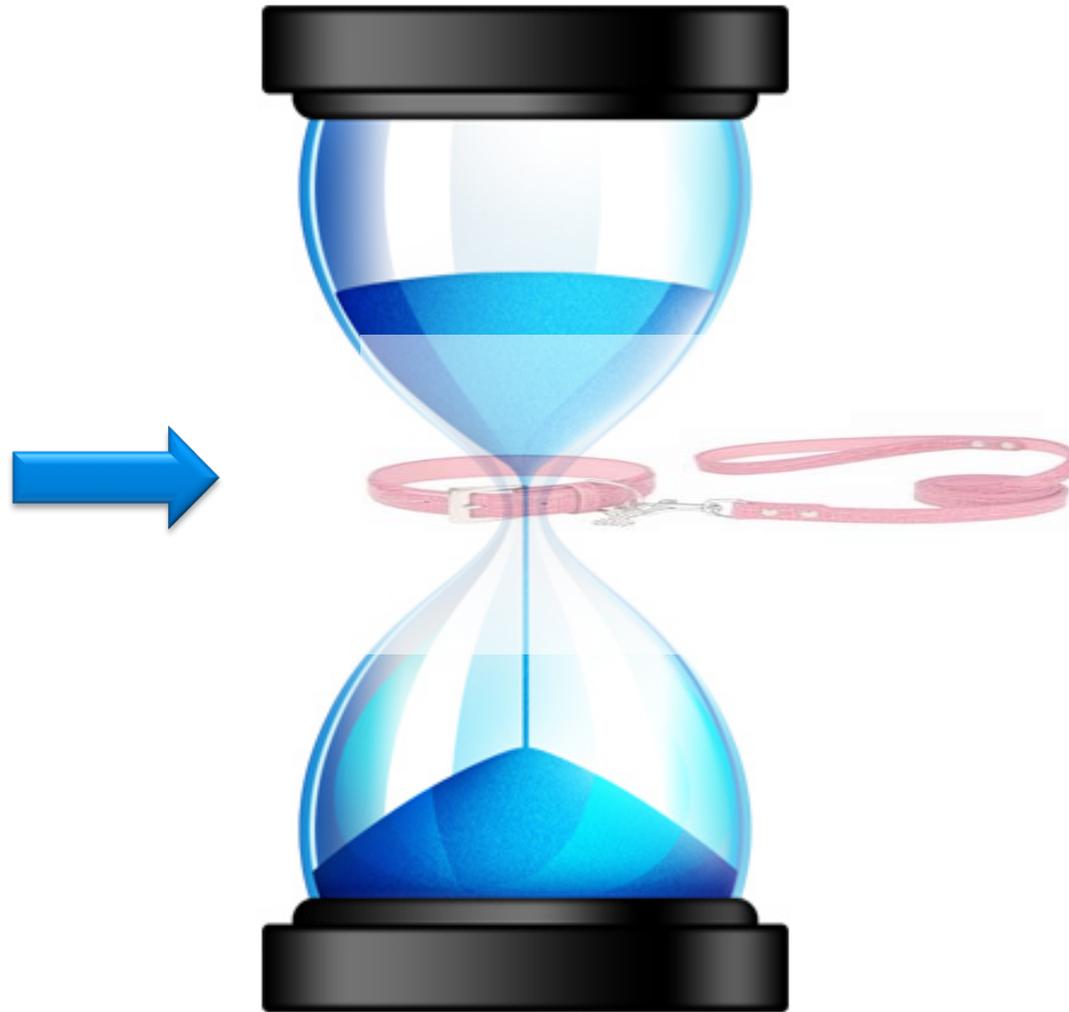
The interests have grown

The collage features several overlapping web pages:

- The Register:** A red header with the logo. Navigation links include Hardware, Software, Music & Media, Networks, Security, Cloud, Public Sector, Operating Systems, Applications, Developer, and Microbite. A headline reads: "UN, IMF join opposition to ICANN top-level domain plans. Sod the economy, cybersquatting is the true threat".
- European Commission:** A blue header with the EU flag. A headline reads: "Internet Governance: In praise of chaos. Governments' attempts to control the internet should be resisted".
- The Economist:** A red header with the logo. Navigation links include World politics, Business & finance, Economics, Science & technology, Culture, Current issue, Previous issues, Special reports, Politics this week, and Business this week.
- The Hindu:** A blue header with the logo. A headline reads: "India's proposal will help take the web out of U.S. control".
- NEWS TECHNOLOGY:** A red header with the logo. A headline reads: "India to oppose .xxx domain".
- Another NEWS TECHNOLOGY page:** A red header with the logo. A headline reads: "Icann's internet suffix approval looms".
- Another NEWS TECHNOLOGY page:** A red header with the logo. A headline reads: "Organisations wishing to buy web addresses ending in their brand names have until the...".
- Another NEWS TECHNOLOGY page:** A red header with the logo. A headline reads: "The Case Against Letting the U.N. Govern the Internet".

Control the waist!

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Some don't like the hour glass..

Pirate Bay must be blocked, High Court tells ISPs
Broadband providers Sky, Everything Everywhere, TalkTalk, O2 and Virgin M block users from accessing filesharing website The Pirate Bay, the High Court



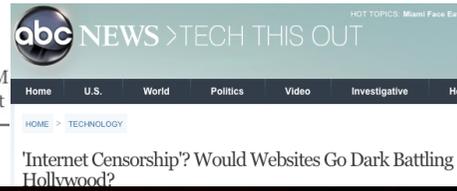
Elisa estää pääsyn Pirate Bay

Teleoperaattori Elisa kertoi maanantaina estävänsä tästä p Bay -sivustolle Elisan ja Saunalahden liittymistä. Kyseessä Suomen internet-historiassa, kun operaattori velvoitetaan e tiettyihin palveluihin.



Rosa Golijan

Internet censoring: Almost everybody's doing it



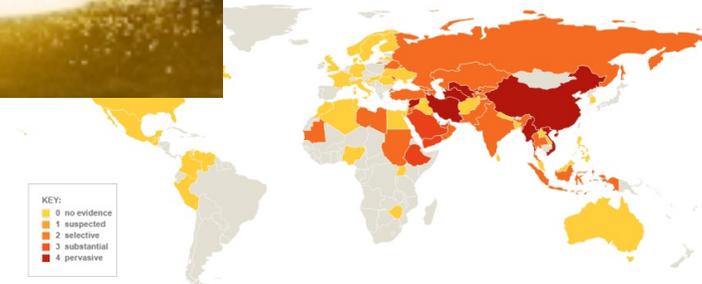
India May Try to Block .xxx

Thursday, March 24th, 2011

Government may block access to .xxx.

India's government will block access to the .xxx top le to an [article](#) in The Economic Times.

A senior official at the ministry of IT said that the dom



Political Social Tools Conflict/Security Transparency Consistency

Conclusion

Internet is special

- Special circumstances made the Internet
- Those cannot be replicated
- Internet could not be specified today

Hourglass is the Innovation

- End-to-End Principle
- Layered Architecture
- Freedom of innovation below and above the waist

The waist is solid

- Economical → Change is too expensive
- Political → Interests too big

Don't think about Future Internet - concentrate on the Future of the Internet!



Renesas Mobile

www.renesasmobile.com