SAIL (Scalable & Adaptive Internet Solutions)
Regulatory workshop on Information-Centric Networking (ICN)

Stockholm September 2nd 2011

Börje Ohlman

Ericsson Research

Scope and Goal of workshop

Scope:

- Information-Centric Networking (ICN) as a future networking technology will change, and require changes to, the business, legal and regulatory landscape, e.g.
  - legal implications of caching in transit (e.g. copyright issues)
  - how peering agreements are made
  - compensation schemes (caches, bandwidth, battery, monetary)
- Privacy issues related to ICN
  - anonymity vs. legal intercept

Goal:

- To initiate a dialogue between policy makers, business stakeholders, and the research community to create a mutual understanding of these issues.

Participation

- Swedish Ministry of Enterprise, Energy and Communications
- TeliaSonera
- SVT (Swedish Television)
- Swedish Post and Telecom Agency (PTS)
- ISOC-SE
- Netnod
- Stiftelsen för Internetinfrastruktur (.SE)
- Norwegian Post and Telecommunications Authority
- Ericsson
- Swedish Institute for Computer Science (SICS)

Caching in ICN

- Comparing ICN caching with today's buffering in routers and caching in CDNs.
  - The current regulation say's something like: creation and storage of copies that are, for technical reasons, necessary for distribution is not subject to the rights holders exclusive right to make copies
  - CDN-operators normally have direct agreements with content owners
  - ICN more complicated, e.g. opportunistic p2p caching, rights of user contributions
- A critical issue if ICN should fly is to demonstrate to rights holders how agreements can be written in relation to ICN technology in a way that makes them feel comfortable
- Already today's regulation is struggling with inconsistencies, e.g.
  - You are allowed to make copies for your personal use, but you are not allowed to break a copy protection mechanism

Controlling ICN

- Who is in control of the information in ICN?
- Who decides who can publish what?
- How can information be removed, etc.?

ICN and privacy

- ICN can support fully anonymous communication
  - IOs need not be tied to any publisher or node, new private keys for signing can be generated on the fly
- ICN can offer a full-blown Orwellian communication system
  - ICN *could* require that only IOs signed by approved and registered keys are allowed in the network
- Regulation is needed to:
  - ensure a reasonable level of privacy
  - to provide possibilities for legal intercept
- Possible approaches/techniques
  - Control of resolution services
  - Need to register before publishing
- There was arguments for **not** having any relation or coupling between the identifiers and the content, because otherwise we will create a too powerful tool for controlling dissemination of information.

Peering issues

- How will peering agreements need to change for ICN to work?
- There is a tussle between the content providers (who thinks the content is what is of value) and the operators (who thinks the distribution is what is of value).
- There is no 'fair' model, it is a struggle of power. It all depends on the specific market who gets the upper hand.

Other workshops

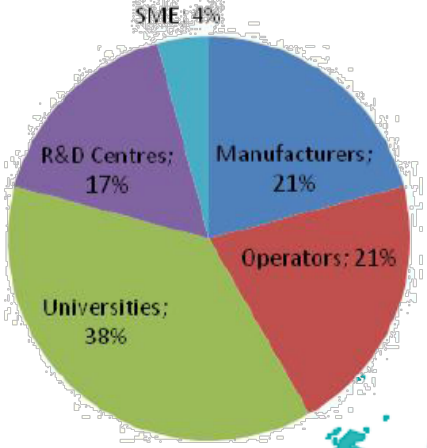
- Finnish regulatory workshop last year
- European regulatory workshop next year
  - Most likely in Brussels in Feb-Mar 2011 timeframe

More stuff

- The project's website is at
  http://www.sail-project.eu
- Deliverables from the project are available at:
  http://www.sail-project.eu/deliverables

The SAIL Project

(Scalable & Adaptive Internet Solutions)



- **EU Call FP7-ICT-2009-5**
  - 25 partners
  - 30 months duration
  - 12.4 M€ EU funding in 2.5 years (total ~20M€)

- **SAIL's main objective**
  - Design concepts and technologies for the networks of the future
  - Develop techniques to move from today's to future networks