

ICN Motivation and Challenges

Dirk Kutscher, Dave Oran
with support from many contributors

Document Purpose

- **WHY**
 - Problems and pain points in today's networks
- **HOW** can ICN help
 - Fundamental ICN concepts
- **WHAT** to do in ICNRRG
 - Research challenges, important topics
- Possible **RESULTS**
 - Impact on IETF work

Input so far

- <http://trac.tools.ietf.org/group/irtf/trac/wiki/IcnProblemStatement>
- <http://tools.ietf.org/html/draft-paik-icn-challenges-00>
- Recent mailing list discussion

Note:

- Originally titled "Problem Statement"
- Discussion whether this is useful
- General consensus: rather describe expected challenges, i.e., topics to be worked on
- Want to add
 - some motivation (what are issues, why do we do this)
 - explanation: what is the general idea (concepts)
- Hence the following proposed structure...

Proposed Structure

1. Introduction
 - example pain point, example ICN solution, brief concept overview
2. Problems with information distribution today
 - Inefficiencies, security issues
3. Concepts
 - Requesting named-data as a first-order network service
4. Research Challenges
 - naming, security, routing, name resolution, transport, caching, interconnection
5. Impact on IETF work
 - anticipated changes to Internet architecture and protocols, relation to existing work (e.g., CDNI)

Current Status

- Found initial set of people to work on this
 - Dirk coordinating
- Have more detailed outline, text pieces
 - want to send around a first version after IETF-85
- Interested to help?
 - <mailto:icnrg@irtf.org> (or contact Dirk)