

Future Internet Research - Global Update -

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1. HISTORY

1960s Computer network research

-> Arpanet,...

1970s Research and education networks

1980s Globalization of the Internet

1990s Commercialization

2. FUTURE

Can we use the current Internet 20~40 years later?

3. ISSUES

- Security
- Management
- Scalability
- Mobility
- Semantic Overload(IP)

4. CLEAN SLATE APPROACH

“Clean Slate Approach” was proposed at NSF with ~15 years research.

5. CURRENT STATUS - RESEARCH

- (1) USA
- (2) Europe
- (3) Asia
- (4) Others

5.1 USA

NetSE with the following projects:

- FIND
- GENI
- Network Science

5.2 Europe

FP7 including the following projects:

- The Network of The Future
- New Paradigm of Experimental Facility
- Future Internet Assembly(FIA)

5.3 Asia

- (1) China
- (2) Japan
- (3) Korea
- (4) Others

5.3.1 China

2004~ CNGI(clean slate approach with IPv6)
with additional projects

5.3.2 Japan

NWGN (NeW Generation Network) Forum

With Akari Project

WIDE Project

5.3.3 Korea

Future Internet Forum(FIF)

with various projects

5.3.4 Others

(a) AsiaFI

AsiaFI School – Focusing on Ph.D students

Workshops

WGs - Architecture, Mobile/Wireless

Committee – Testbed

(b) APAN

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Focusing on testbed coordination

5.4 Others(Global)

IRTF/IETF

ISO

ITU

6. CURRENT STATUS - TESTBED

(1) Planet Lab

PLC, OneLab, CoreLab, 6Lab

(2) Emulab

(3) GENI

(4) Clean Slate(Stanford: Open Flow,...)

(5) FIRE

(6) Others

11/17/09 ORBIT,...

7. REMARK

- (1) Why Asia?
- (2) Revolutionary(Clean Slate) Approach
- (3) Paradigm Shift
- (4) The 15-Year Research
- (5) Green Internet

7.1 Why Asia

- Good opportunity to participate the global Future Internet research this time.
- Over 50% of the Internet users are in Asia.
- May address issues of the developing countries, too.

7.2 Revolutionary Approach

NSF proposed the revolutionary(clean slate) approach.

Others(Europe, Asia,...) are considering evolutionary approach as well as revolutionary approach.

7.3 Paradigm Shift

We need to consider possible paradigm shift(s) in 15~40 years.

We may look back 15 years ago(~1995), and may look forward 15 years or more into the future.

7.4 15-Year Research

What if we don't get good research result in 15 years?

Do we do anything before "15 years later"?

7.5 Green Internet

How do we reduce CO₂ while the (Future) Internet grows substantially?

How the (Future) Internet help to reduce CO₂?

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