

# Testbeds and Experimentally Driven Research for NWGN and Future Internet

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"New Generation Network" and the "Future of the Internet"

# Japan Gigabit Network from 1999

Based on Japanese National IT policy, the JGN and JGN2 project has been conducted.

Foresight of "R&D in Future IT Field" and "Future IT Society"

## Basic IT law

(Basic law for Formation of an Advanced Information Communications Network Society)

## e-Japan Strategy (2001)

## e-Japan Strategy2 (2003)

The R&D continuation of the advanced basic technology leading the next generation high-speed network, and the testbed network maintenance

## u-Japan Policy (2004)

The evolution of the synthetic R&D to realize the ubiquitous society

## UNS Strategic Program(2005)

How to develop the R&D to realize the ubiquitous society

Contribution to IT society in the future

Extensive R&D of ICT

Collaborations between industry, academia, government, and regional organizations

Stimulation of regional activities

Human resource development

Promoting international collaborations and cooperation

1999-2004



Concretizing National strategy

Diffusion and Deepening of JGN results

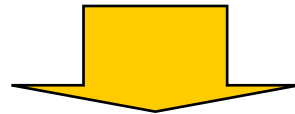
**NICT**  
operation



2004-2008

# Changing Environment

- *In 1999 when JGN started, the broadband networks were not available to almost all researchers, and only approximately 20% of the population used the Internet in Japan.*
- *Currently almost everyone can use the Internet, and broadband access networks are very common.*



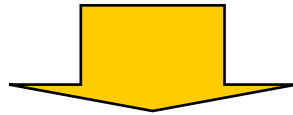
The objective of testbeds changes as well.

# What is Engineering?

- A most elegant description is that engineering is about design under constraint. Technology is the outcome of engineering.  
*in “The Engineer of 2020” by National Academy of Engineering, U.S.A. (2004)*
- Design is originated from social requirement.

# Redesigning the Internet

Social requirement and constraints drastically changed.



It is time to rethink and redesign the Internet architecture and technologies to meet the requirements under new constraints (environment).

# Features of Testbeds

- Testbeds play an important role
  - to verify new concept and technological feasibility etc., and
  - to facilitate research collaboration.

The best way to predict the future is to invent it !

By Alan Kay

- Testbeds should be driven by requirement by research community.

Diverse testbeds can be developed, which will be shared among related research community.

# Today's talks from Japan

- Shinji SHIMOJO,  
Executive Director of Service Platform Architecture Research Center,  
NICT:
  - **Towards a new testbed for a new generation network research and development**
- Yoichi SHINODA,  
Project leader, NICT Hokuriku Research Center  
Professor, Center for Information Science,  
Japan Advanced Institute of Science and Technology
  - **The StarBED Project and Implications toward "Testbed Synergy"**