How to Introduce New Technologies

- Through Standardization Activities -

by Dr. Yuji INOUE

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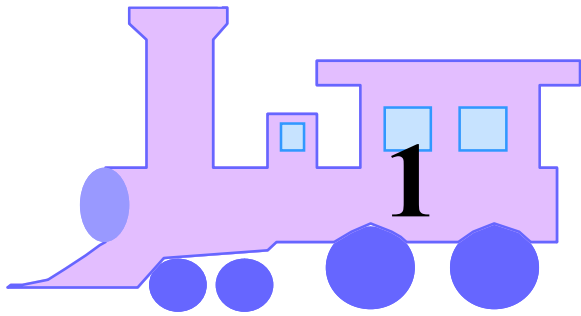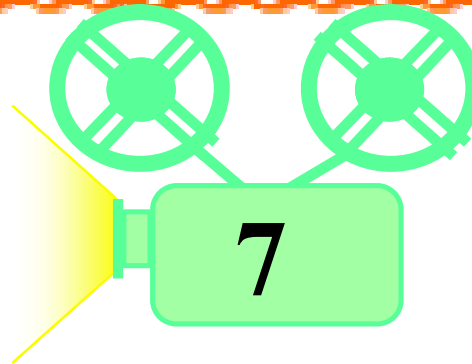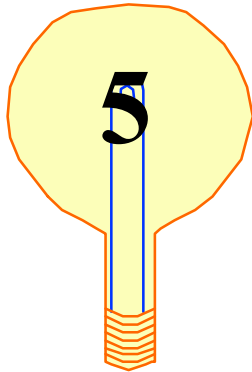
Telecommunication Technology Committee

http://www.ttc.or.jp

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Quiz

7

1895

1

1825

4

?

5

6

1885

2

3

?

?

1879

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More Than 140 Years

1835

17 May, 1865

ITU

1868

1876

ITU/MIC Training in Japan, Tokyo

TIC Telecommunication Technology Committee
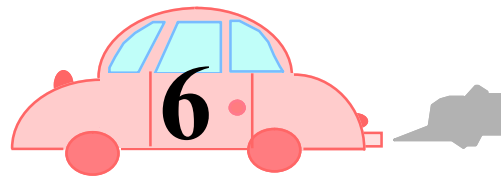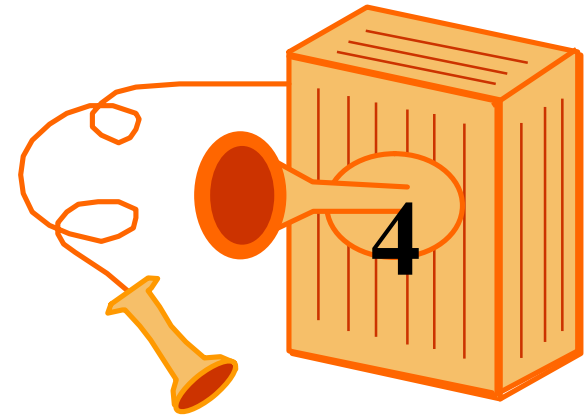
What are happening after 100 years?

"DIY" Optical Fiber Cord

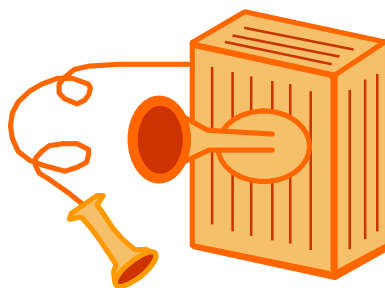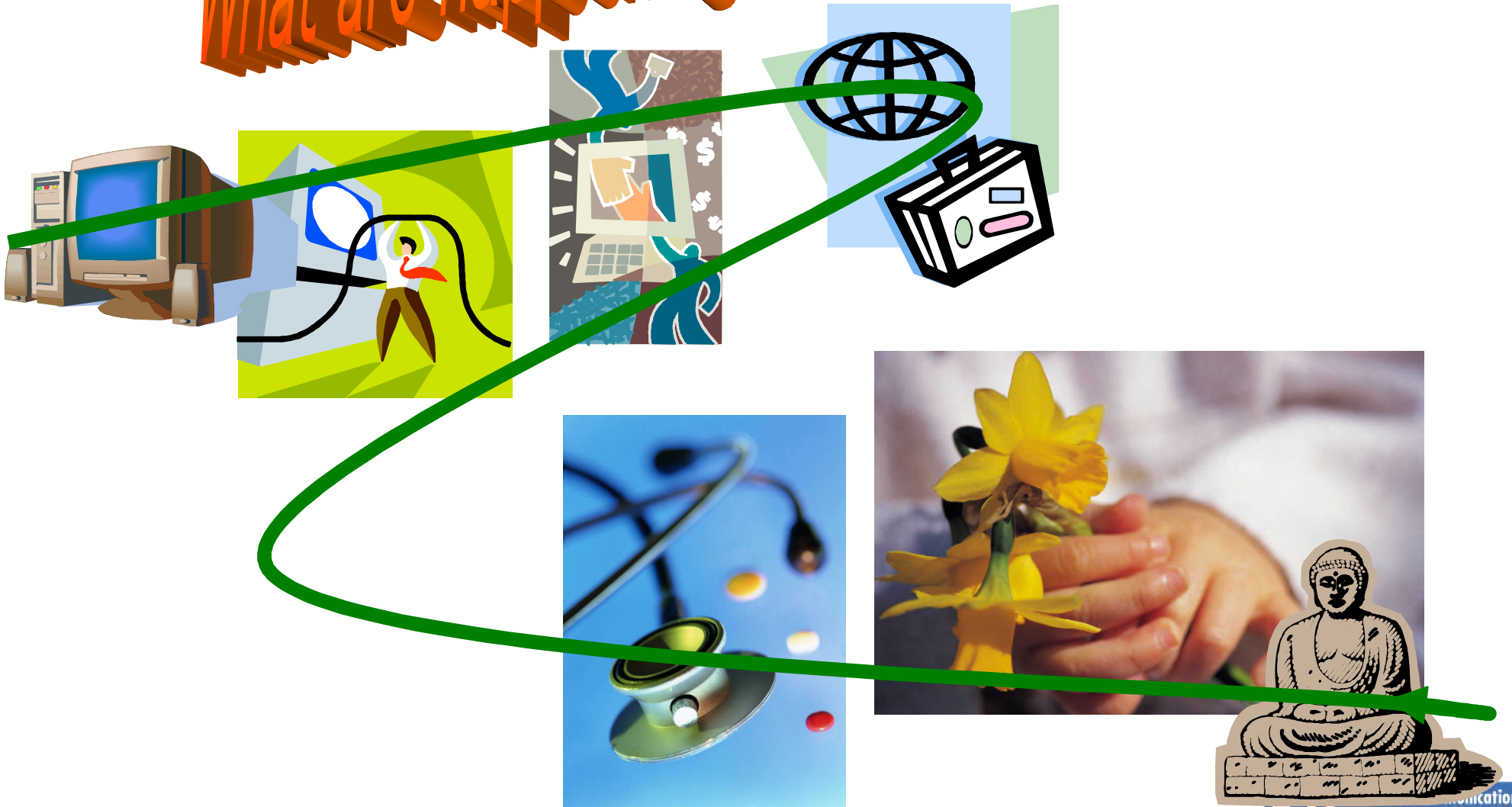*"DIY (Do It Yourself) optical fiber cord enables customers to conduct an optical fiber installation by themselves.*

Bending area of wiring

"DIY" optical fiber cord

Through-hole on the wall

Extra wire housing

ONU

Bent at a right angle

Clinched

Knotted

with connectors

Beyond Shannon Theory

Pulse
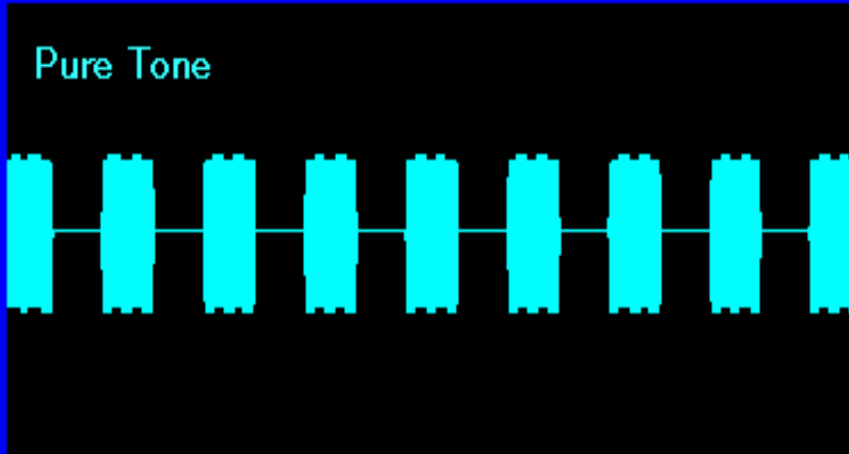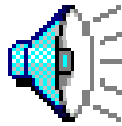
Noise
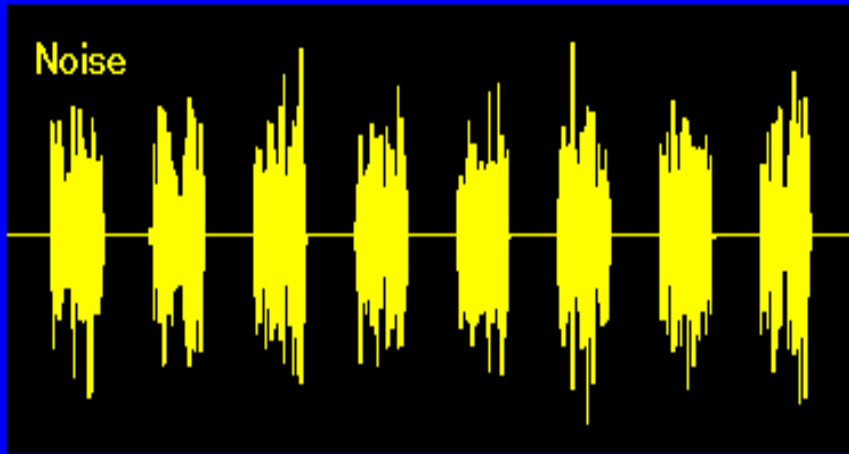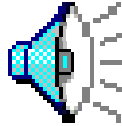
Voice
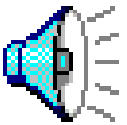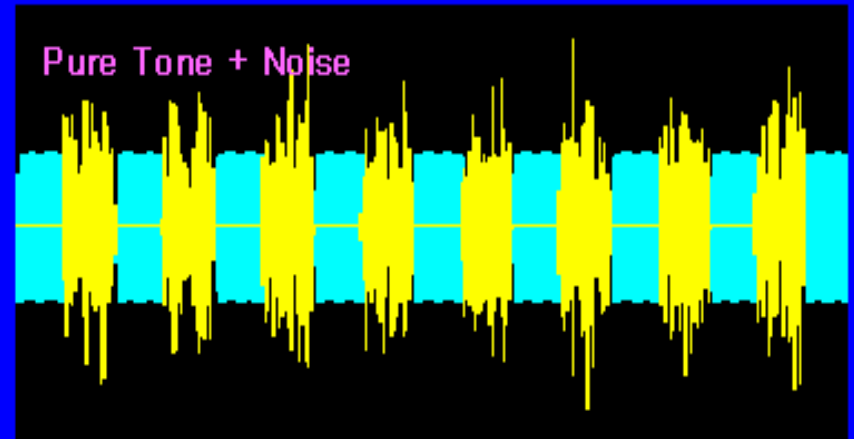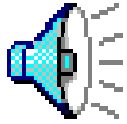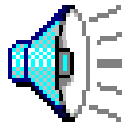
What and How Human Brain Seeing?

Color-factor is weaker than Brightness-factor in human brain motion detection
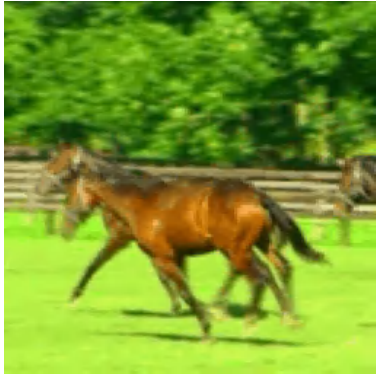
Original

Color-f *(reversed in motion)* + **Brightness-f** = **Synthesized**

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Color-factor, though, compensates motion recognition when Brightness-factor is partially lost.

Low frequency factor is eliminated

Color-f   **Brightness**   **Synthesized**

 + **=**
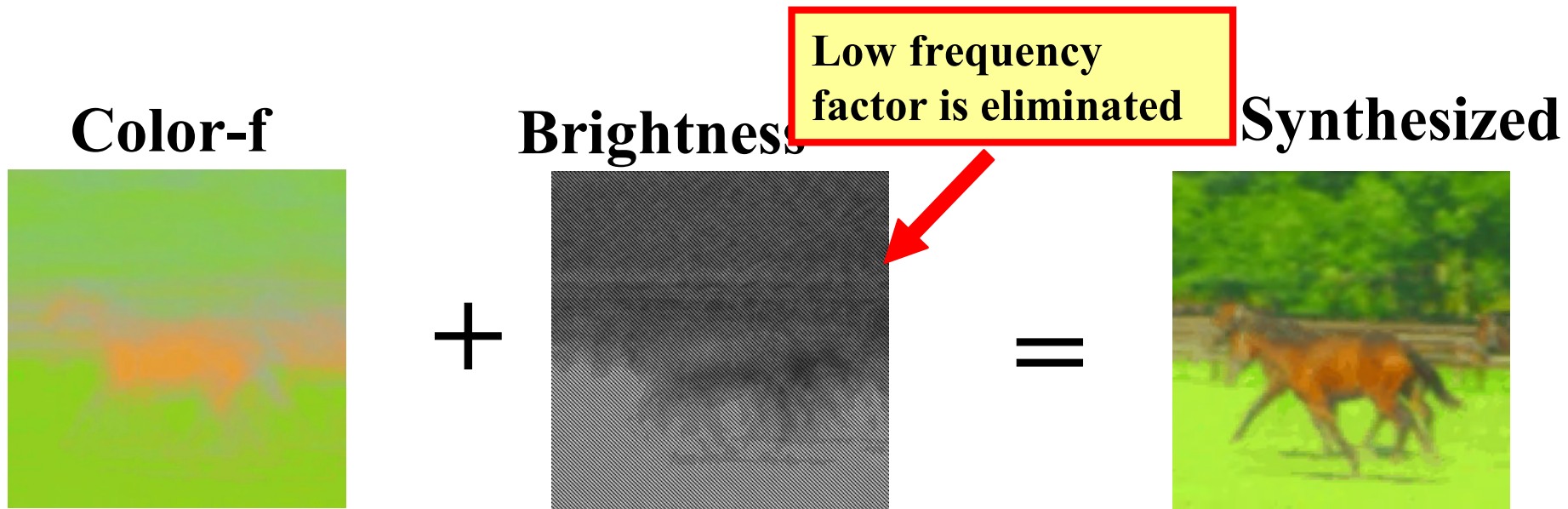
Hint to a Revolutionary new Coding method = Subtract Lower – frequency factor which needs massive volume of coding information

Software !
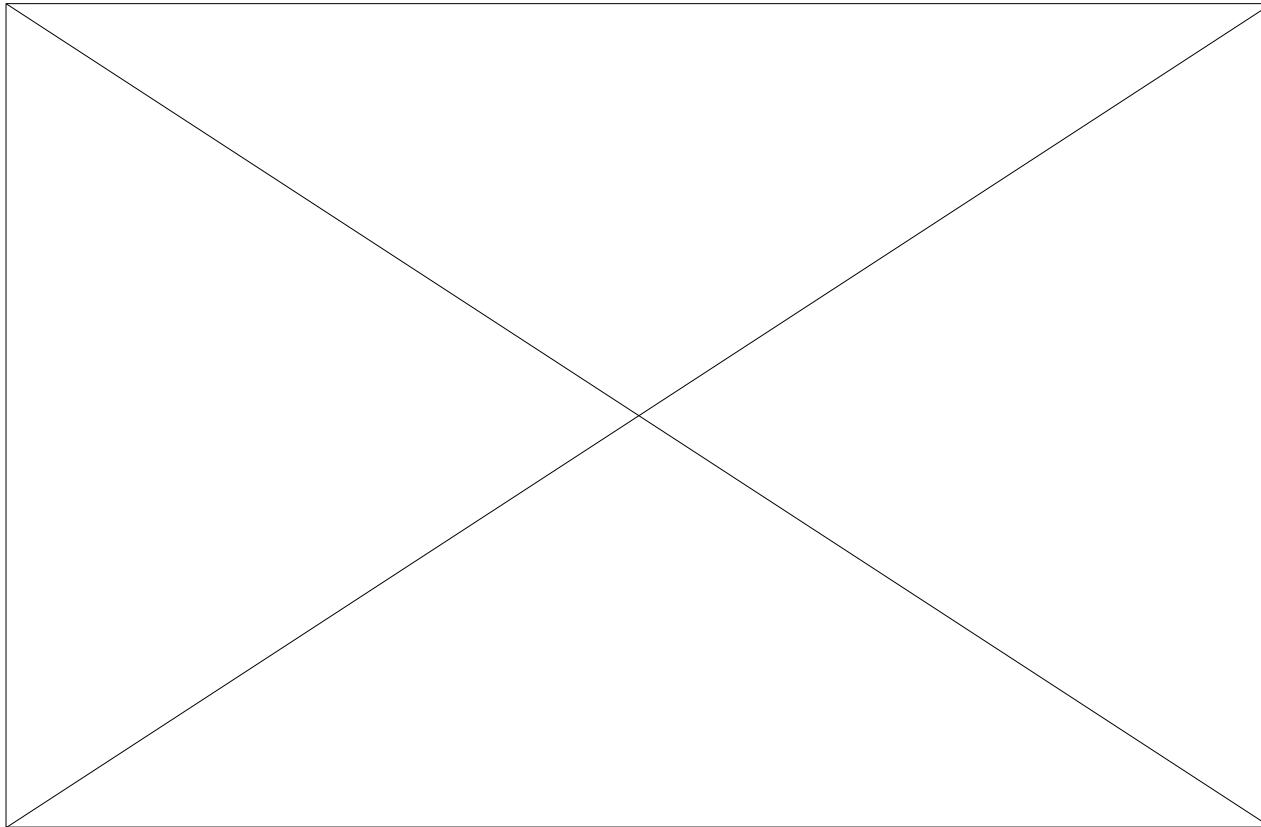
March 2007

FTTH	**275 k**	**6.1 M**
ADSL	**-65 k**	**5.3 M**
3G	**1.3 M**	**35.5 M**
2G	**-1.2 M**	**17.1 M**

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Rapid Shift to VoIP
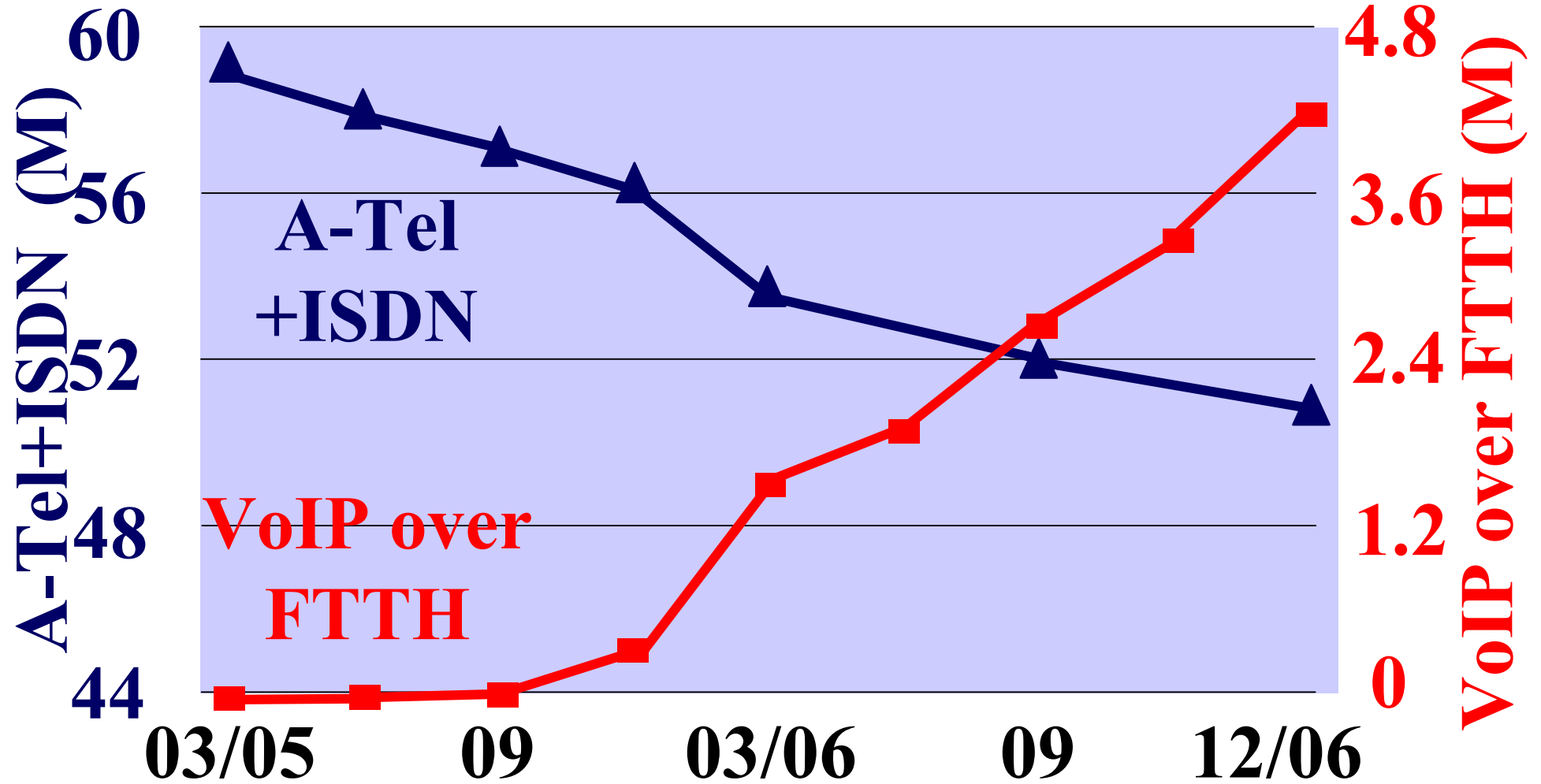
Why FTTH & VoIP – Price -

	Max. Speed Down/Up (Mbps)	Monthly Charge (US$)
ADSL	**47 / 5**	22.3
FTTH	100 / 100	22.1

0.5 $/Mbps

1 / 2.5

ADSL

0.2 $/Mbps

FTTH
(GE-PON)

Why FTTH & VoIP – ARPU -

x 1.8

50$ /mo.
(approx.)

23 $ /mo.

Metallic

FTTH

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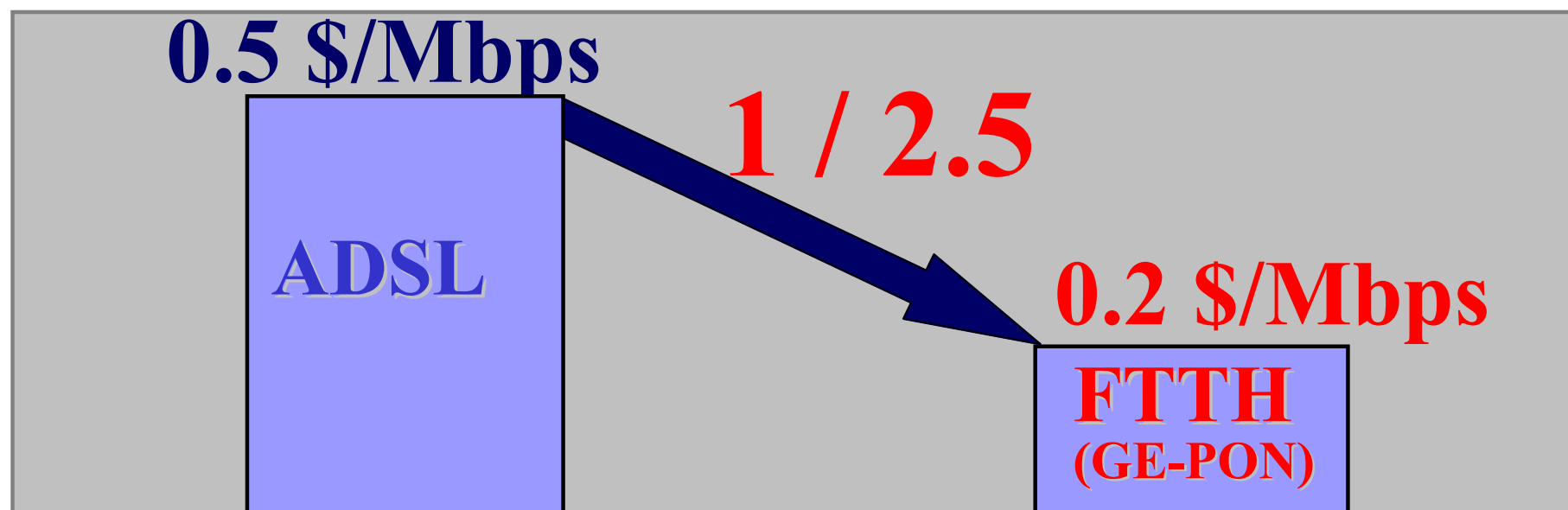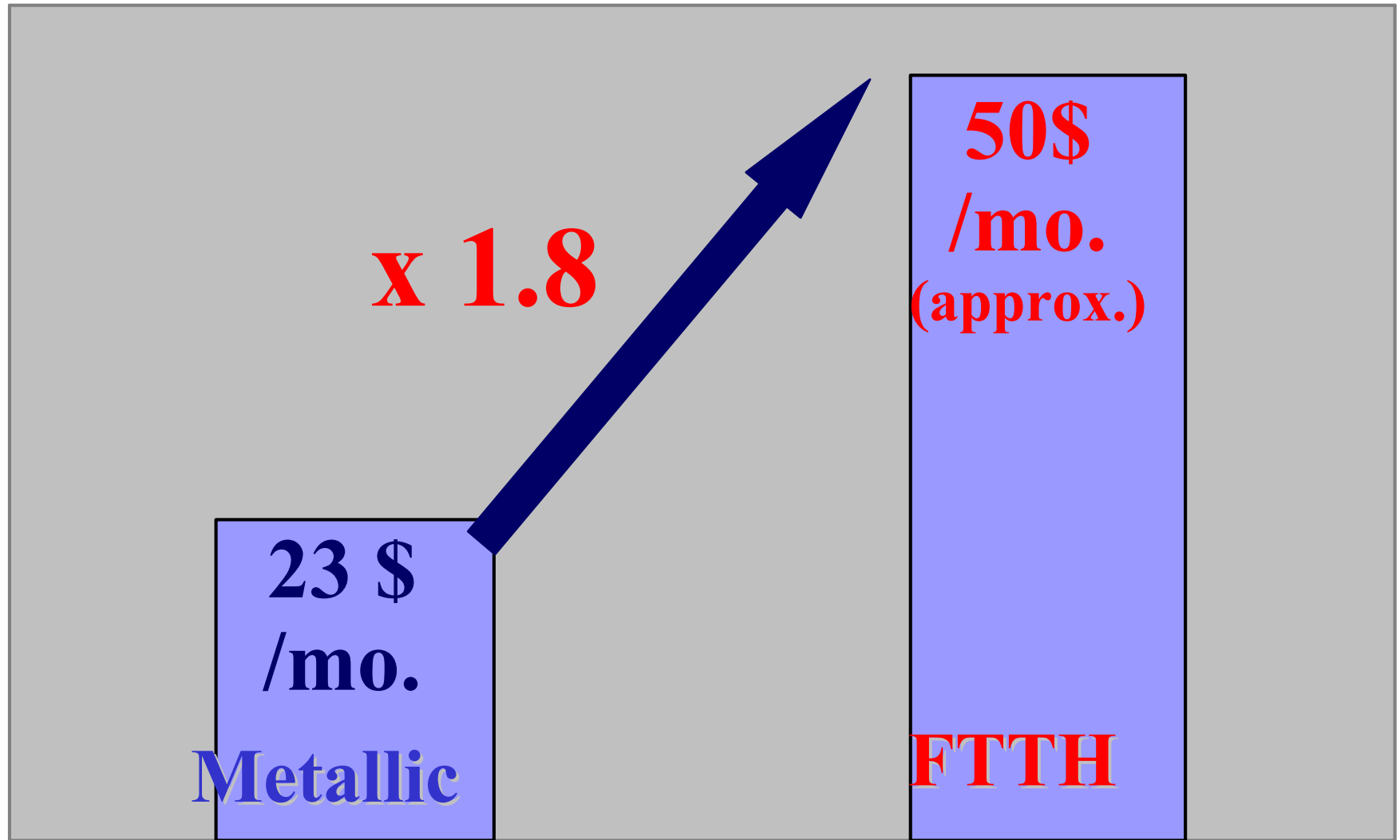
Implementation

1. Build a next-generation network that is *open*, *flexible*, *easy-to-use*, *inter-operable*, and *safe&secure*

=> 30 million FTTH users by 2010

2. Strengthen our competitiveness and financial base (Targets up to 2010)

- *Annual additional sales: 5 billion US$*
- *Total capital expenditure: 50 billion US$*
- *Annual cost reduction: 8 billion US$*

Telecommunication Technology Committee

Plenipotentiary Meeting

As CTO of NTT

Council

WTSA

WRC RA

WTDC

Sec. Gen. Dep. S.G.

Secretary

Director Standard

Director Radio

Director Development

TTC Telecommunication Technology Committee
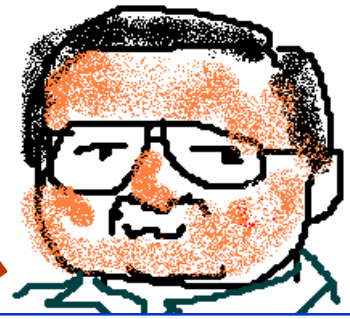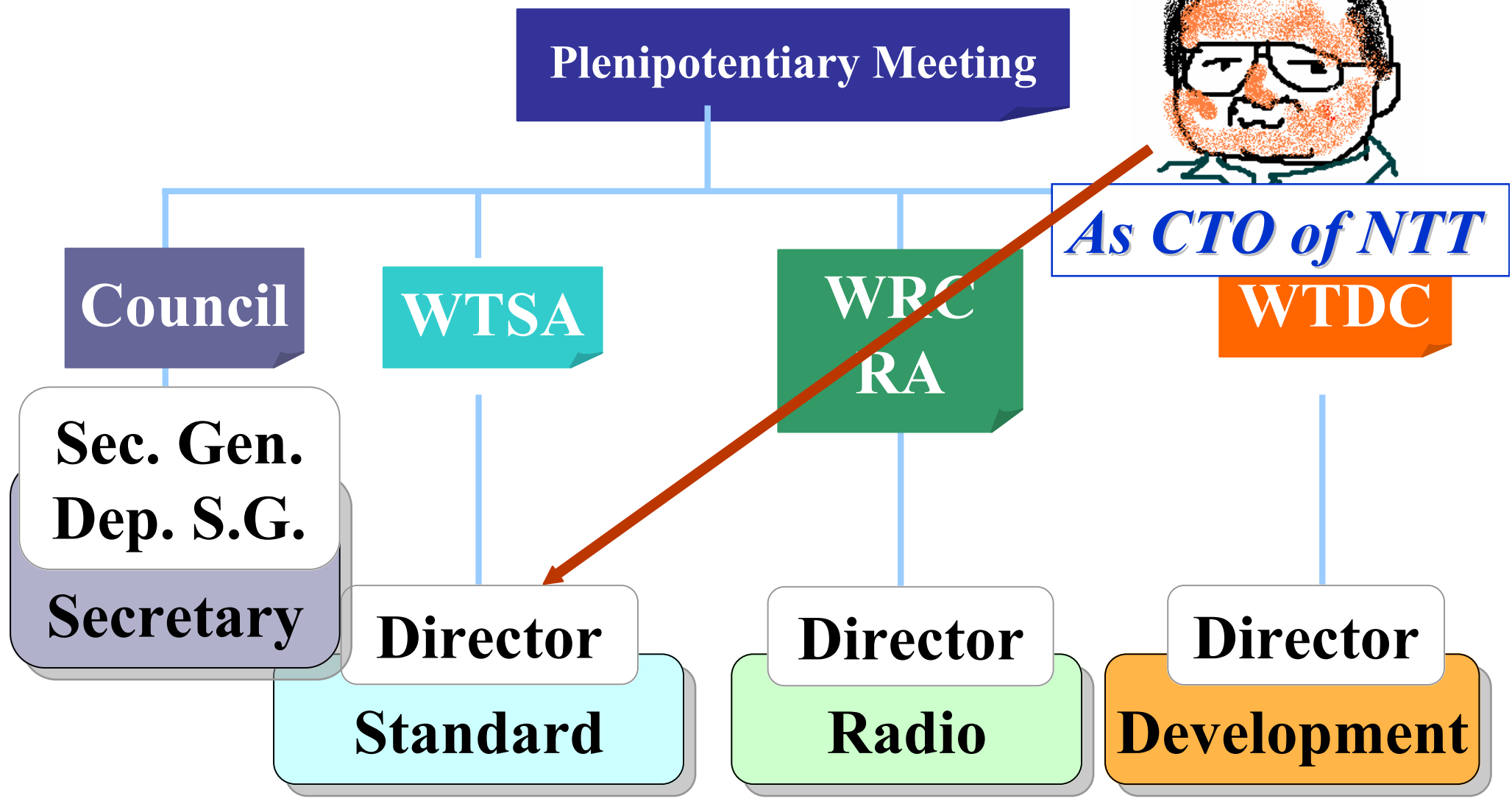
Voting Result

JOHNSON (U.K.)	46	60	83
INOUE (Japan)	59	64	79
PARK (R. Korea)	39	35	—
BIGI (Italy)	15	—	

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Election Campaign for ITU-T

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Yuji's Promise for ITU-T

Digital Divide **Interconnectivity** **Security**

Internet

Broadband

Telephony

Mobile

Wireless

NGNs

Global Center

Diversified

ITU

Cooperated
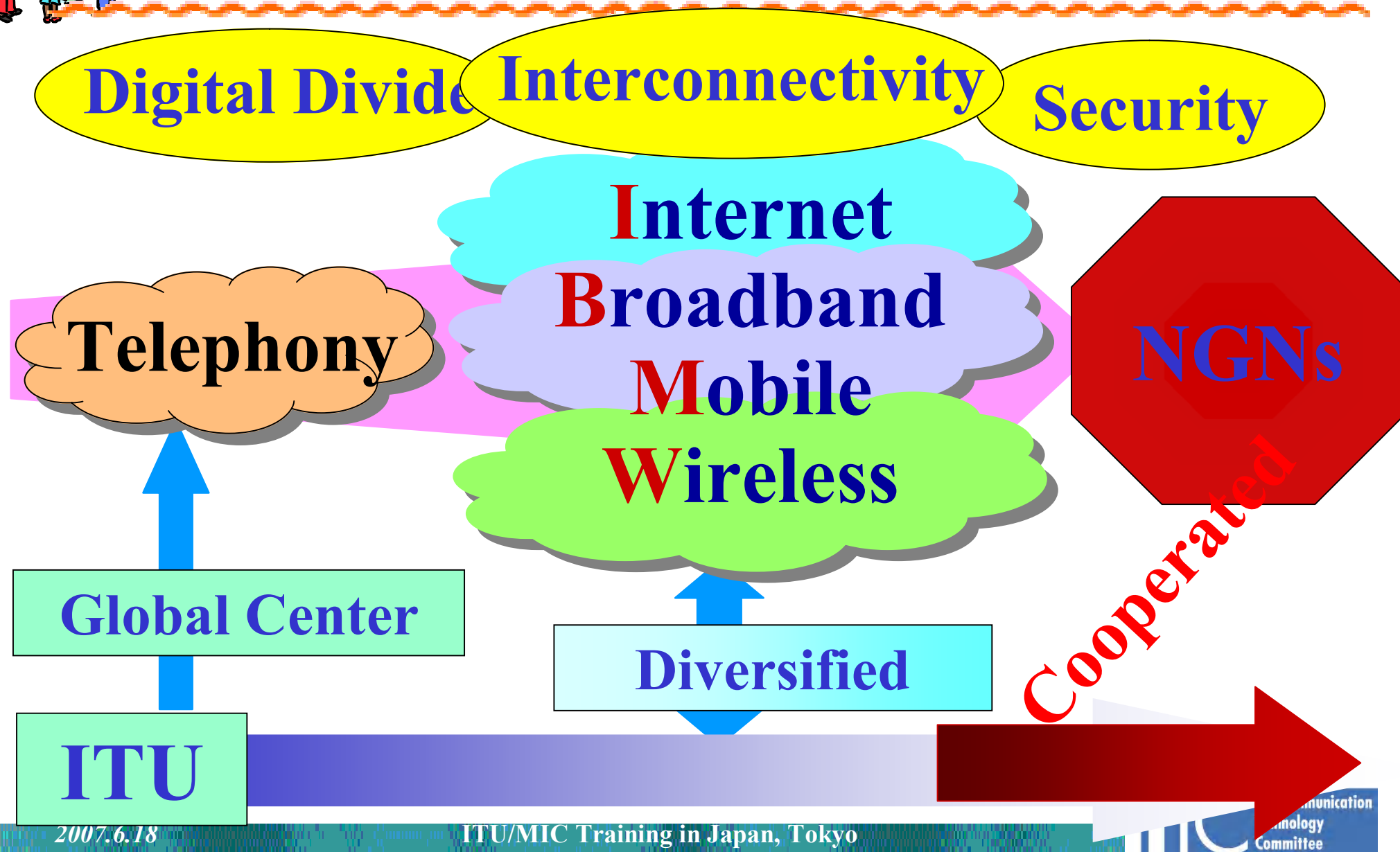
How to collaborate in General?

ITU: *much more Customer-Oriented*

- *set essential Service target as a Project*
  such as - Digital Divide solution
  - VoIP interoperability
  - e-Content archiving & delivery
- *ask SGs and De-facts for tech. stds*
- *collect and verify tech. stnds to the Service Recs.*

De-facto: *basically Market-Oriented*

- *Component tech. stds for the Service*
- *Competition among vendors*
- *May be requested how to migrate different techs*

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Campaign Summary on NGN

- **Many UDC, Under Developing Countries, plan to invest NGN mainly because**
  - **1) Digital SW will not be available soon, and**
  - **2) Internet capability, or Digital Divide Solution, be the next target after and/or together with mobile-phone NW for solving social issues.**

- **DC started to NGN for**
  - **1) same as above, and**
  - **2) more BroadBand and FMC for 3 or 4 Plays**
    Telephone, Internet, TV, Mobile

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Current Situation in Africa

Fixed Tel.（'05）

Internet（'05）

Population In Cities

Mobile ('04→'05)

Population In Rural

Gabon
Mauritania
Morocco
Congo
Botswana
Egypt
Kenya
Namibia
Swaziland

0 10 20 30 40 50
(%)

0 20 40 60 80 100
(%)

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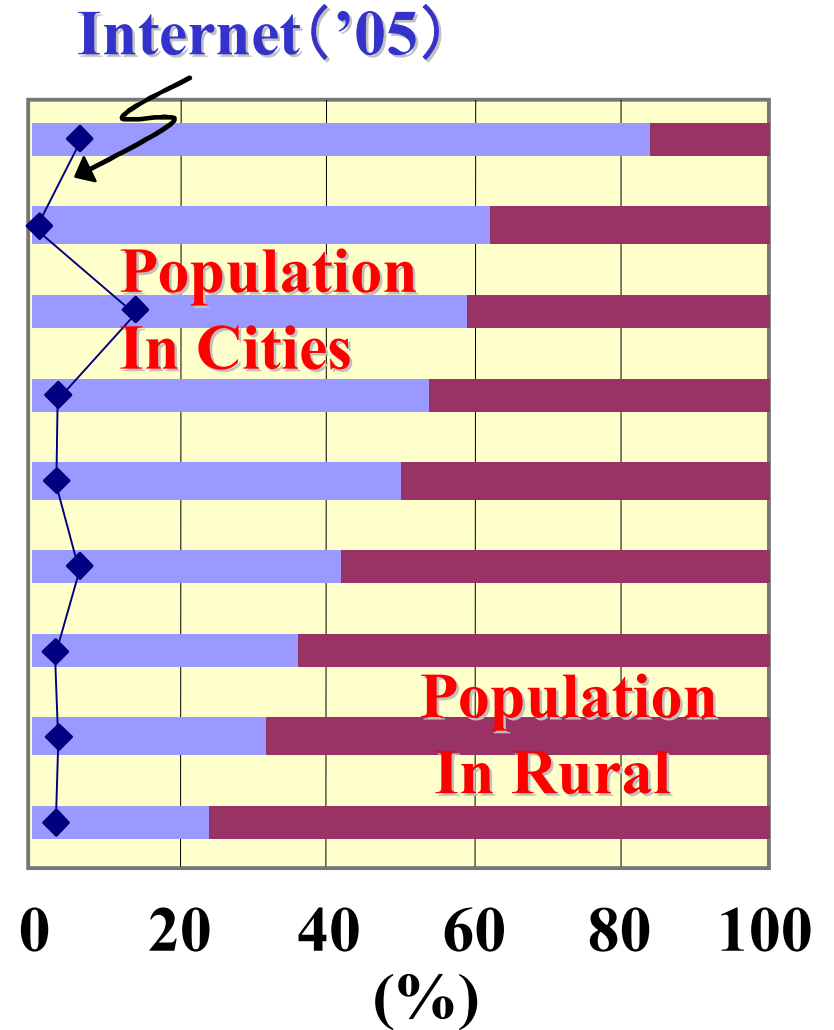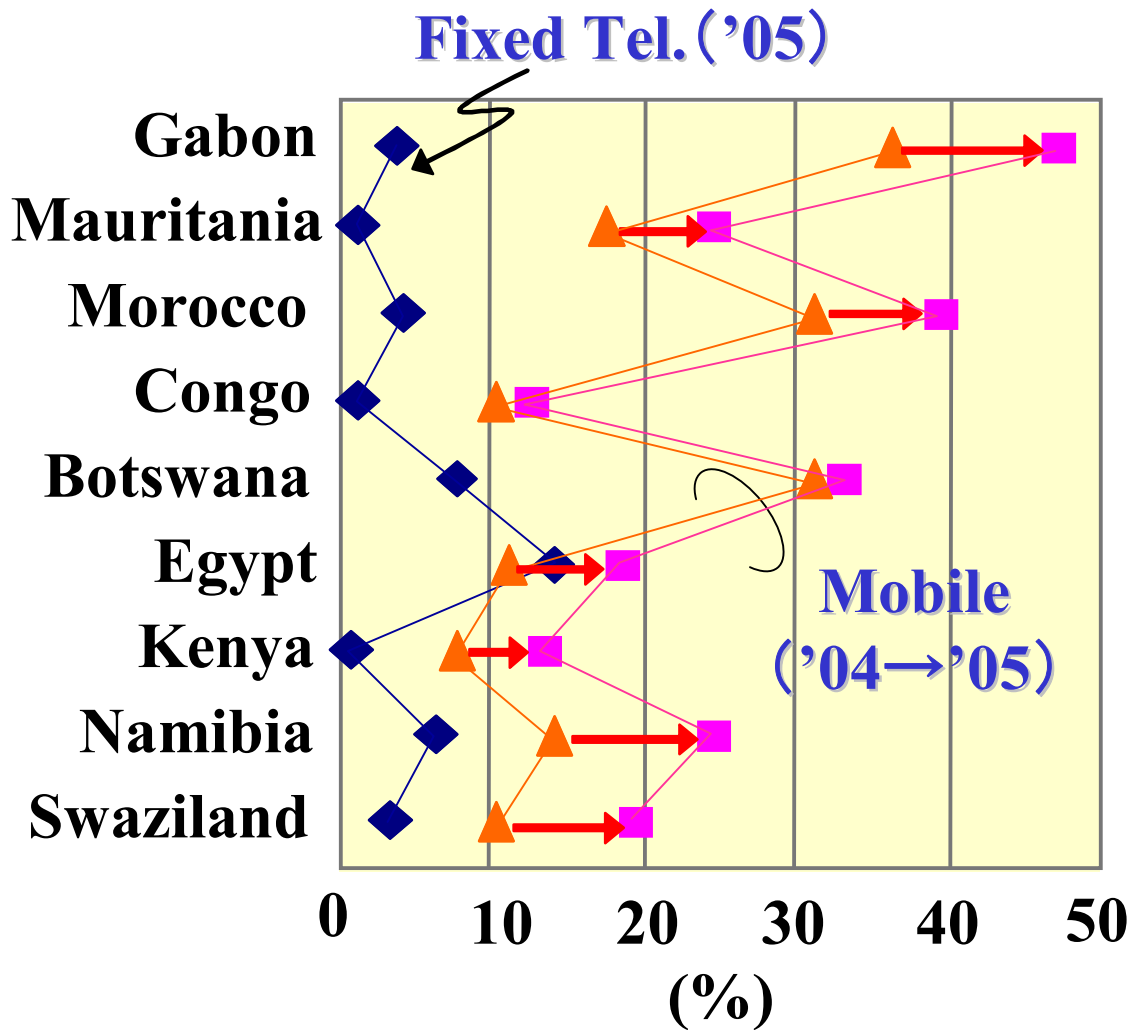
Status of Telecom in Asia/Pacific

PSTN:

Almost matured

→ *shows the limit of wired access*

Mobile Phone:

Still growing

→ *easily exceed the limit of wired access*

as of 2005

PSTN

Mobile phone

Singapore
New Zealand
Japan
Malaysia
Indonesia
China
Pakistan
India
Bangladesh
Viet Nam
Lao PDR
Thailand
Nepal

0   20   40   60   80   100   120

Penetration Ratio (%)

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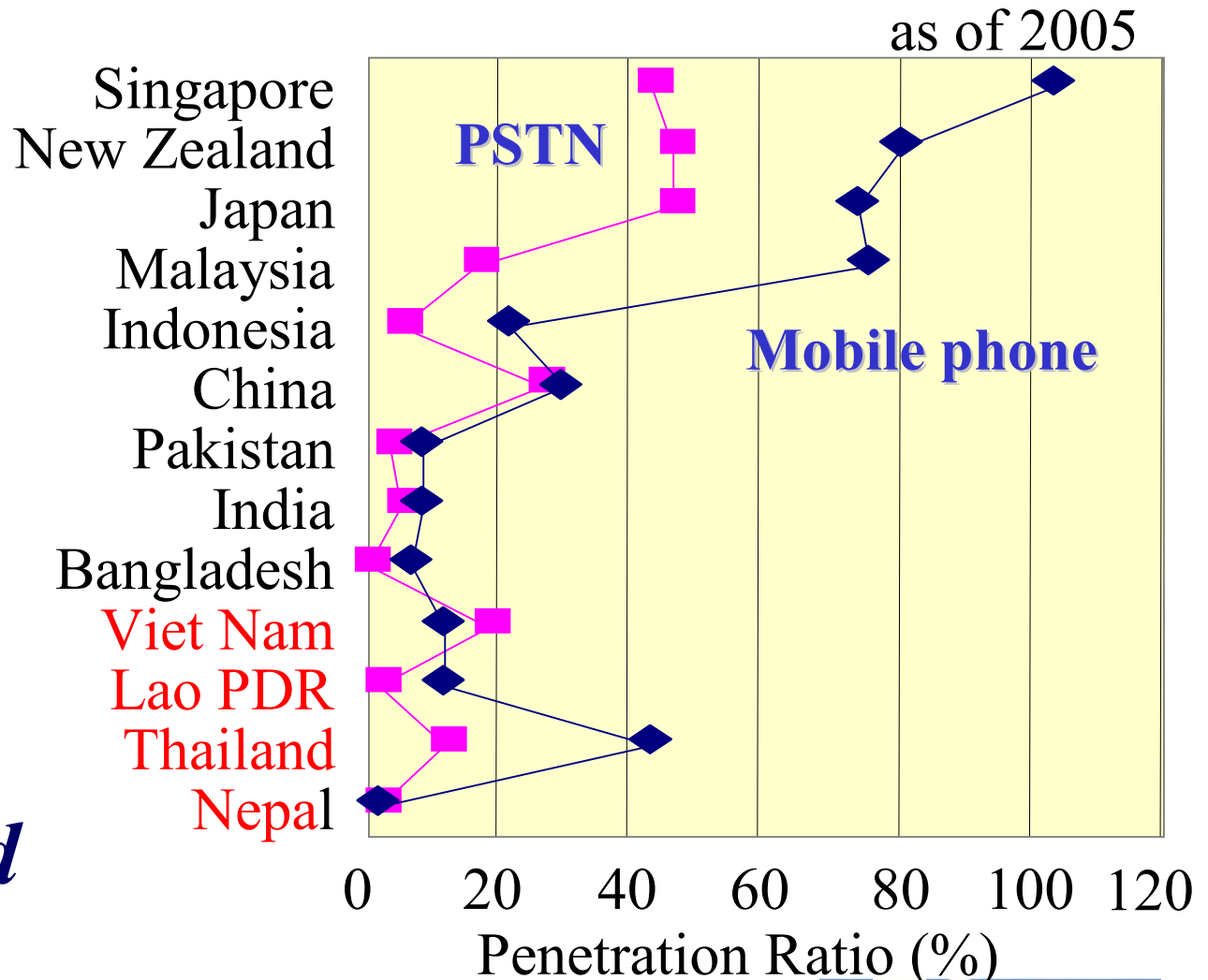
Internet Access in Asia/Pacific

1. **Potential increase in the number of Internet users**

2. **High rural population in many countries**

⬇

Development of cheap broadband access is essential

Internet Penetration Ratio (as of 2005)

Chart showing Urban Population and Rural Population percentages:
Singapore, New Zealand, Japan, Malaysia, Indonesia, China, Pakistan, India, Bangladesh, Viet Nam, Lao PDR, Thailand, Nepal

0 20 40 60 80 100 %

☐ Urban Population   ☐ Rural Population
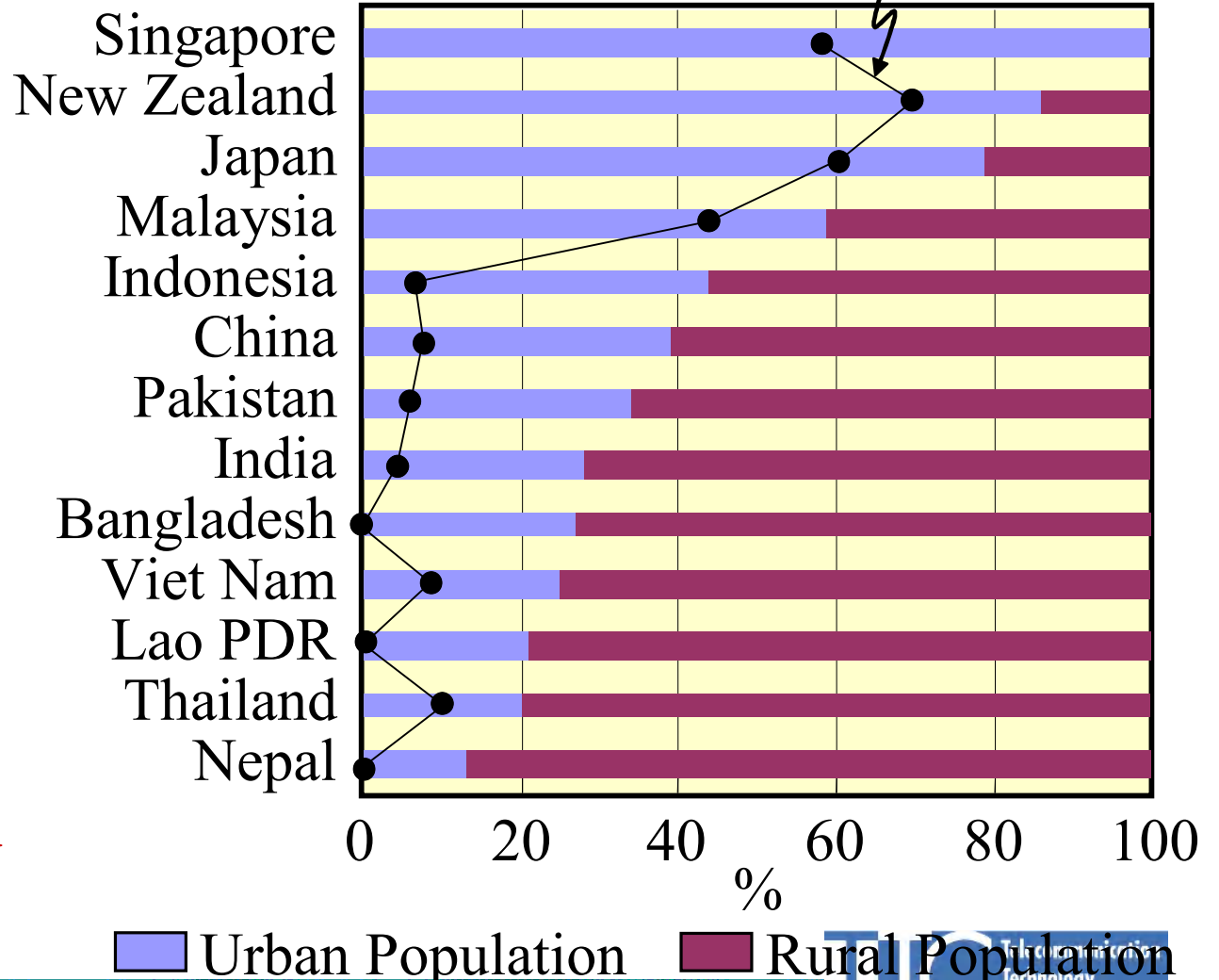
Who is TTC?

The Telecommunication Technology Committee

【**The Purpose of Business**】

- **Determine Japanese Standards, Specifications & Technical References for Telecommunication & Information, networks**
- **Promote Standards,**
- **Contribute the development of the telecommunication technology, and**
- **Encourage relevant industries.**

【**Establishment**】

In October 1985, corresponding to the privatization of NTT, and this is 22nd anniversary.

Telecommunication Technology Committee

ITU

New Technology
New Service

Downstream

Upstream

TTC Telecommunication Technology Committee

Request for Improvement, etc

TTC members

TTC Standard, Specifications TR

Request for Improvement, etc

HATS

Production

Connectivity Test

TTC Telecommunication Technology Committee
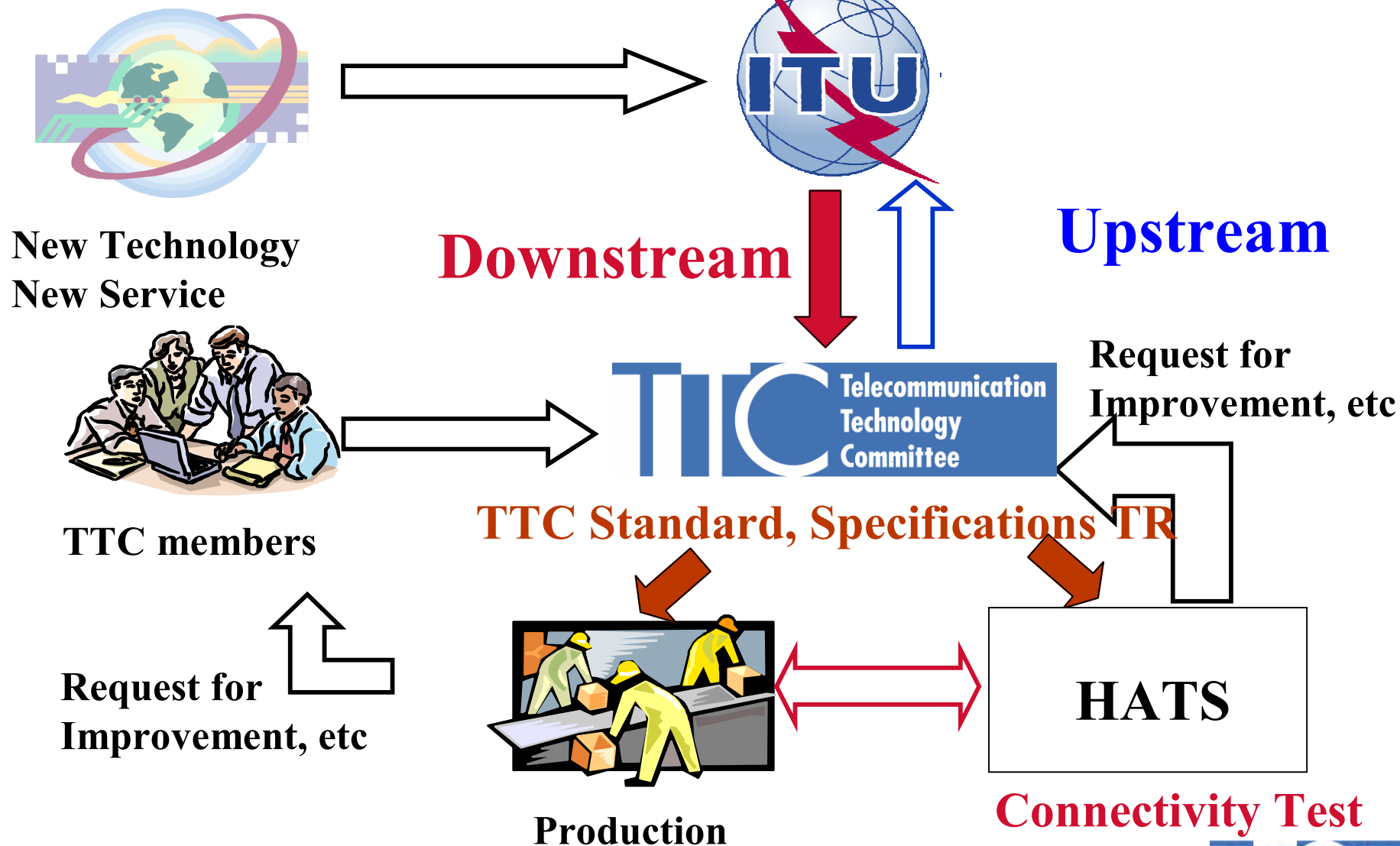
Regional solution rather than the global standards are becoming more important for society & people. TTC will cooperate with the countries which wish to utilize ICT, NGN, for happiness of the people.

ETSI (Europe)

CCSA (China)

TTA (Korea)

TTC (Japan)

ARIB (Japan)

ISACC (Canad)

ATIS (USA)

TIA (USA)

APT (Asia Pacific Telecommunication Community)

Communications Alliance (Australia)
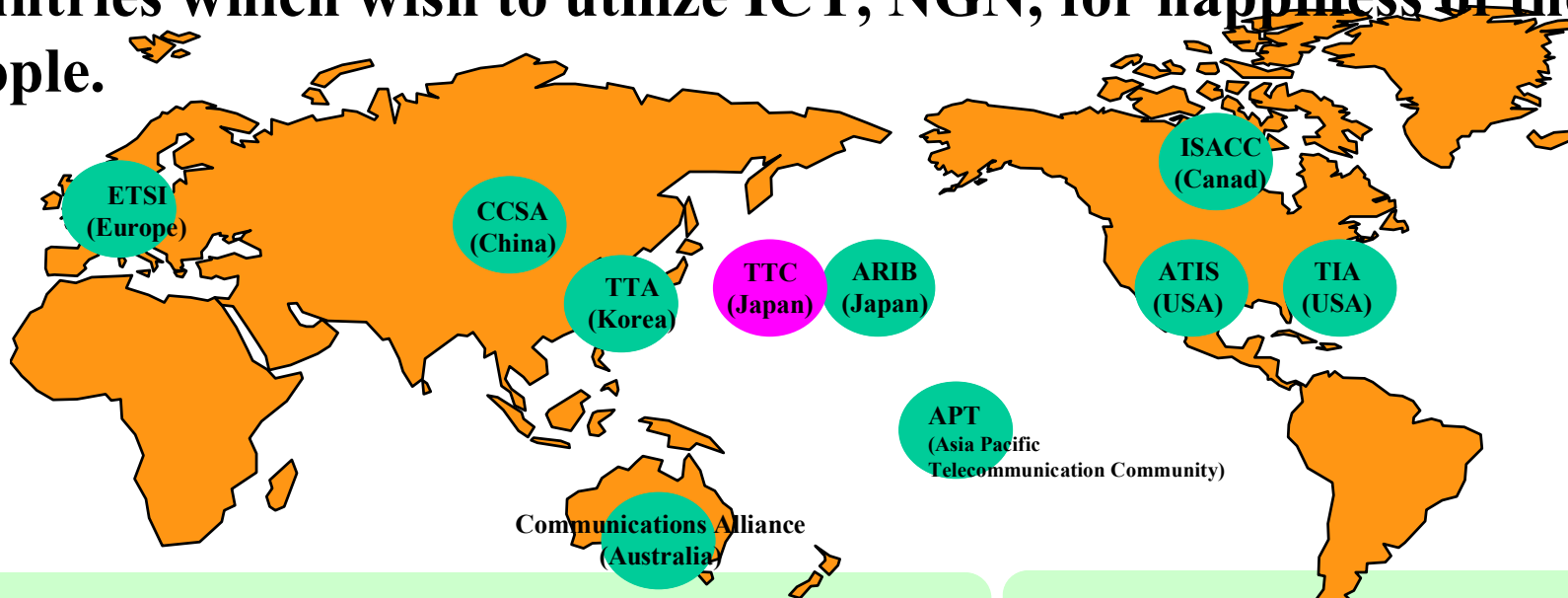
GSC (Global Standards Collaboration)

ITU-T

CJK Standards Meeting

3GPP / 3GPP2 (3rd Generation Mobile)

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TTC New Role = with Neighbors =

Hereafter： Make efforts to develop and share common standards with Neighbors & Friends

➢ **To form local consensus in consideration of each different conditions depending on the countries**

➢ **To propose the consensus to ITU-T or De Fact Groups as the conditions locally required**

TTC Telecommunication Technology Committee

TTC New Organization

- Double Drives of Standardization & Promotion -

- Since April 2007 -

General Assembly

Councilor's Meeting — Board of Directors — Secretariat

Promotion Committee
- Planning of System & Solution
- Verification of System & Solution
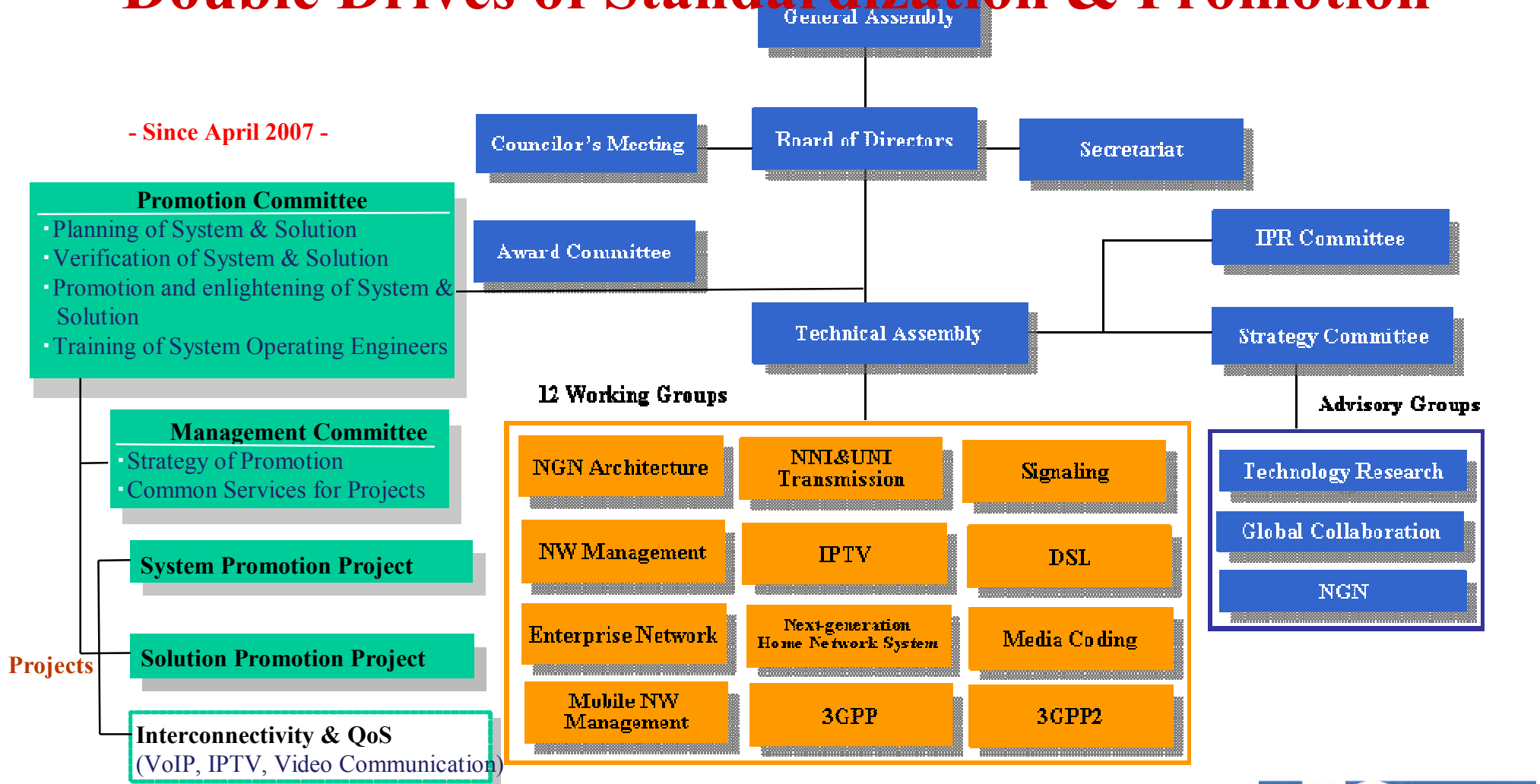- Promotion and enlightening of System & Solution
- Training of System Operating Engineers

Award Committee

IPR Committee

Technical Assembly

Strategy Committee

Management Committee
- Strategy of Promotion
- Common Services for Projects

System Promotion Project

Projects

Solution Promotion Project

Interconnectivity & QoS
(VoIP, IPTV, Video Communication)

12 Working Groups

NGN Architecture	NNI&UNI Transmission	Signaling
NW Management	IPTV	DSL
Enterprise Network	Next-generation Home Network System	Media Coding
Mobile NW Management	3GPP	3GPP2

Advisory Groups

Technology Research

Global Collaboration

NGN

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System Promotion & Solution Promotion Projects

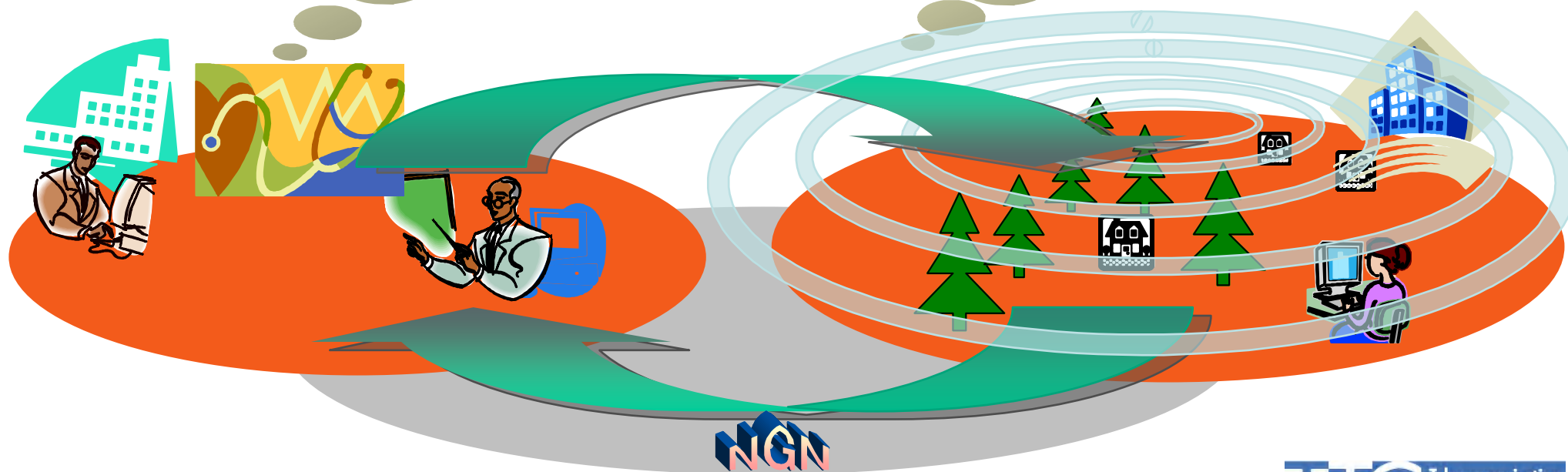## Promotion of Solutions

·Service Applications

(e-education, e-healthcare)

·Tsunami/Earthquake Alarm

(Emergency Information)

Promotion of Systems

·Dissolution of Digital Divide

·Spread of Economical Internet

·Networks in case of Emergency

NGN

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Paradigm Change under "NGN"

Analogue to TDM Digital   to IP Packet   to "? "

Electric   to Opto-Electric   to Full Photonic
+ Wireless   +Wireless

Telephony NW   to IP NW   to Multi-P NW

Next Generation Network

Telecommunication
Technology
Committee

Message from Yuji

Thank you for your listening

&

Let's start group discussions

for **contributing your society**

and people

by new technologies

TTC Telecommunication Technology Committee