Korea on
Future Internet

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- *Society*
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❖ ***Visions***

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- *Open R&D*

❖ *Internet in 2030*

- *Realtime Internet*
- *Quality Internet*
- *Knowledge Internet*

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❖ **Aging Society**
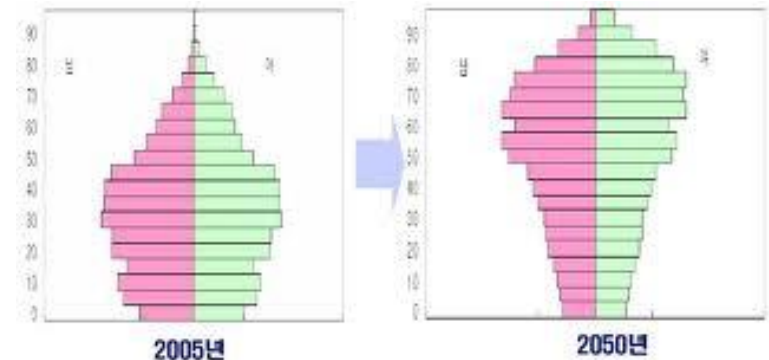- Birth rate < 1.1
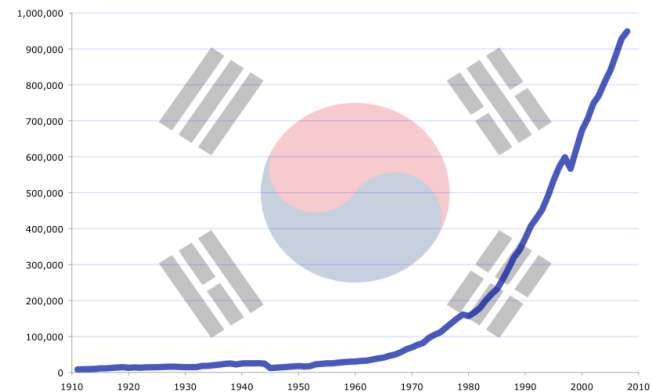
❖ **Dynamic Society**
- Generation X

❖ **Expanding Society**
- 1 Trillion$ club

❖ **Angry Society**
- 20-40 vs. 50-60
- Civic movements

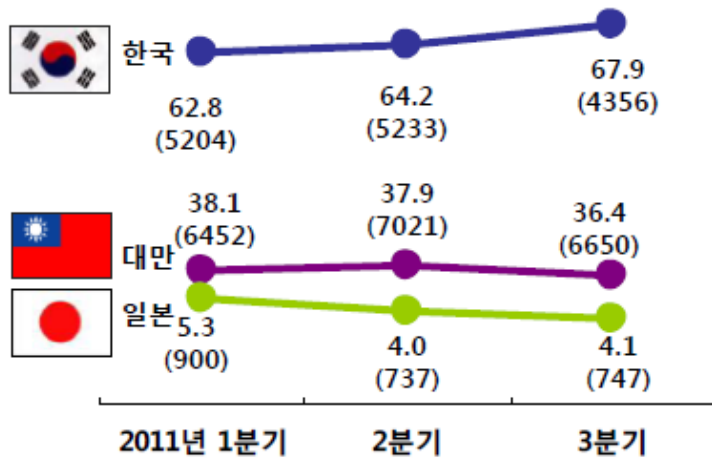Age distribution
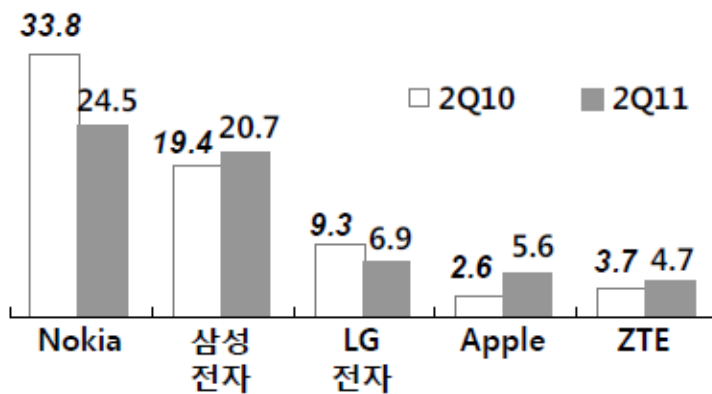

National GDP (M$)

DRAM Market Share

Smartphone Market Share

❖ Internet Technologies

- Software – weak
- Devices – strong
- Application – strong
- Content – medium
- ISP – strong
- Wireless – strong
- Security - weak

❖ **Basic Research**
- MEST

❖ **Applied R&D**
- KCC
  - Networks and Services
- MKE
  - Product-oriented

❖ **e-Government**
- >5,000 information services and apps
- >351 databases will go public by Korea Knowledge Portal

❖ **Public R&D funding**
- >10% annual increase
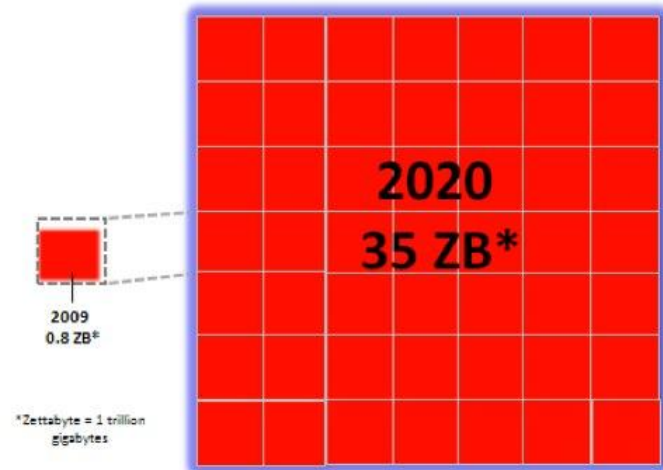
❖ Smart

- ■ Device
- ■ Network
- ■ Application
- ■ Society

❖ Explosion

- ■ Internet Traffic
- ■ Information Creation
  - ■ Information Universe

Growing by a Factor of 44

2020
35 ZB*

2009
0.8 ZB*

*Zettabyte = 1 trillion gigabytes

Source: IDC Digital Universe Study, sponsored by EMC, May 2010

연평균 증가률 : 103%

Mobile Data Traffic in Korea
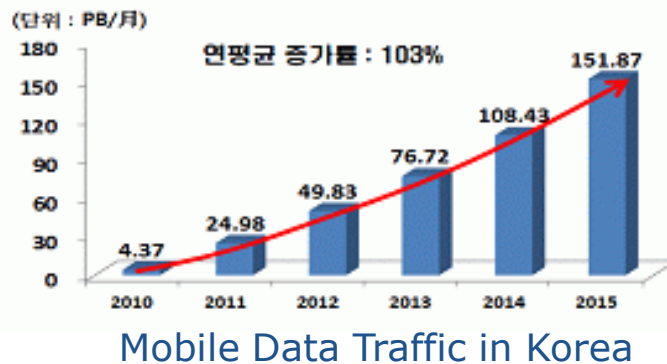
- KT Chairman "In 5 years, data traffic will increase by 1000 folds"
(Digital Times, 15 Nov. 2010)

- **In 2010, 1000% traffic increase (Electronic Times, 30 Dec. 2010)**

Traffic/Data Explosion!!

❖ **PyeongChang** in 2018 ; *NEW IT SOLUTIONS*

- Personal Broadcasting
- 4D broadcasting
- >100,000 mobile video cameras

HOW TO SOLVE THE CURRENT PROBLEMS AND YET BE READY FOR THE FUTURE ?

THE ANSWER IS "GO OPEN"

❖ **Open Device Architecture**

- Mobile devices
- HW, SW, UI

❖ **Open Network Architecture**

- Future Internet Architecture

❖ **Open App Architecture**

- Smart Education
- Smart Work
- Smart Healthcare

❖ **Open Platform for Public IT services**

❖ **Open Platform for Participatory Society**

❖ Information Universe(IU, 아이유)

- Data Analytics
- Visualization
- Sensors
- Social Network Data

❖ Open Government Data

❖ Open Data in Private Domains

❖ **open data**
+ mobile
+ social
+ cloud
= future IT

- ❖ Open Innovation
- ❖ Virtual Open Lab
- ❖ Mobility of
  - Research projects
  - Research funding
  - Researchers
- ❖ ConTech

- ❖ Industry-University-Government R&D
- ❖ National – Regional - Global

❖ Realtime Internet

❖ Quality Internet

❖ Knowledge Internet

Image from Impactlab

❖ **Internet as tools for**
- Time shift
- Place shift
- Content shift

❖ **Place shift**
- Very small delay is required for interactivity

❖ **Realtime in Internet**
- Changes in network
- Changes in device
- Paradigm shift

- ❖ New way of working
  - Low birth rate – the aging society
  - Productivity
  - Saving energy consumption
  - Work while moving
- ❖ You do not enter a company, but you become a professional
- ❖ Multiplayer : freelancer

- ❖ New network infra
  - Realtime
  - High speed
  - Conferencing
  - Cloud
  - Smart work center
- ❖ New mobile and fixed devices
  - Telepresence
  - Video conferencing
  - Virtual office
- ❖ New applications
- ❖ Collective intelligence

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❖ Quality : best case
  ▪ Ubiquitous
  ▪ Always there
  ▪ Safe and dependable
  ▪ No divide
  ▪ Are the users satisfied ?

❖ Adaptive Quality

❖ Measuring quality in Internet
  ▪ Contract ?
  ▪ Quality Parameters
    ▪ Depending on usage
    ▪ People vs. machine
    ▪ Individual vs. group

❖ Architectural changes are required
  ▪ Service description
  ▪ Interaction model

Knowledge Internet

- ❖ **Internet as a tap for knowledge**
  - Information Universe
  - More than Search engine
  - Are the users satisfied ?

- ❖ **Useless and stale information : we need a decaying model**

- ❖ FI vs. IU
  - Separate layer or integrated architecture ?
  - IU : more than cloud

- ❖ **Text-based search**
  - Ranking
  - Preference
  - Measurement-based
- ❖ **Multimedia search**
  - Technology for indexing
  - Massive data
  - Privacy and security issues
  - Personalization

❖ **Integrated Architecture for Device-Network-Application/service**

- Battle of Architectures
- Reduced role of networks
- Closely related to business models
- Powershift ?

❖ Faster network infrastructure

- **Faster wireless**
  - LTE everywhere by 2014
  - New WiMAX operator in 2012
- **1Gbps Internet by 2012**
  - 10Gbps Internet access by 2020
- **Video and mass data friendly network**

❖ New industries and venture companies

- ❖ Support New industries
  - ❖ Cloud
  - ❖ Mobile apps
  - ❖ M-to-M
  - ❖ Location-based
- ❖ Support Advertisements
- ❖ Venture capital funds

❖ **Safe and decent Internet**
- Security
- Cyber-terror
- Privacy
- DDoS
- Ethics

❖ **Global R&D collaborations**
- ❖ 100Gbps KOREN
- ❖ TEIN with EU
- ❖ CJK, US

❖ **Stronger R&D**
- ❖ Mobile/wireless FI
- ❖ Virtualized Internet
- ❖ Green FI
- ❖ Advanced UI
- ❖ Content network
- ❖ Internet of Things

❖ Visions for Future of Korea : GO OPEN

❖ Paradigm shift for new Internet

- Realtime
- Quality
- Knowledge

❖ Korean Policy on FI

- Faster network infrastructure
- New industries and venture companies
- Safe and decent Internet
- Global R&D collaborations

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