Future Internet and Information Universe

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❖ *Megatrends*
- *Smart*
- *Interaction*
- *Explosion*

Information Universe

❖ *Internet in 2030*
- *Realtime Internet*
- *Quality Internet*
- *Knowledge Internet*

❖ **Smart**

- Device
- Network
- Application

❖ **Interaction**

- Between People
- Between Machines
- Between Data

❖ **Explosion**

- Internet Traffic
- Information Creation
  - Information Universe

- ❖ New way of working
  - Low birth rate – the aging society
  - Productivity
  - Saving energy consumption
  - Work while moving
- ❖ 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

❖ Man-to-man

❖ Man-to-machine

❖ Machine-to-machine

❖ Content-to-content

❖ New mode of communication, collaboration, and computing

- Redundancy handling – filtering
- Provenance verification – trust
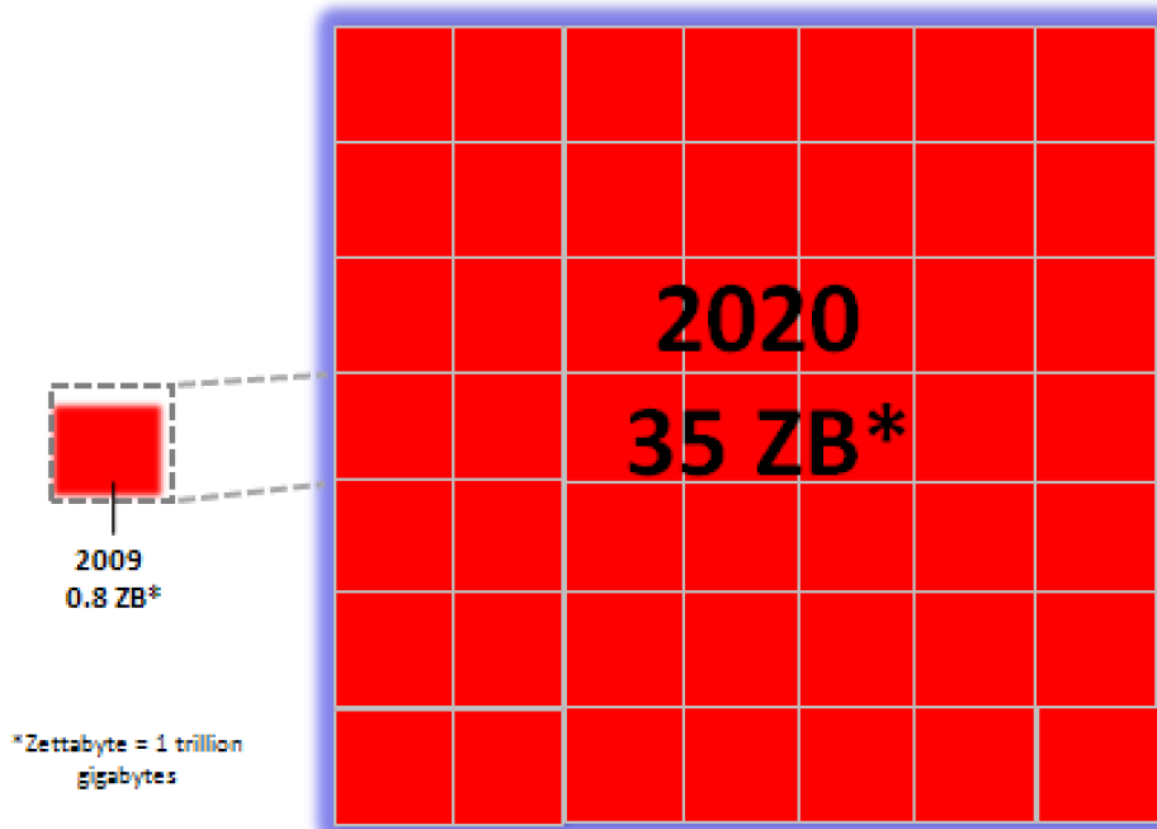- Aggregation, abstraction, and visualization

❖ PyeongChang in 2018 ; *NEW IT SOLUTIONS*

- Personal mobile Broadcasting
- 3D broadcasting

PyeongChang 2018
APPLICANT CITY

Figure 1: The Digital Universe 2009 – 2020
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

Famous Korean Singer

❖ **How do you**

■ Capture

■ Store

■ Move

■ Process

❖ **All these data?**

❖ Data collection
❖ Data preprocessing
❖ Indexing
❖ Search methodologies
❖ AI, machine learning
❖ Data analysis
❖ NLP
❖ Language Translation
❖ Data aggregation
❖ Large scale systems
❖ New network architecture
❖ Visualization
❖ User participation

❖ 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

❖ Quality : best case
- Ubiquitous
- Always there
- Safe and dependable
- No divide

❖ Adaptive Quality : reality
- Security & protection level
- User satisfaction level

❖ Measuring quality in Internet
- Quality Parameters to be defined

❖ Architectural changes are required
- Service description
- Interaction model

❖ Internet as a tap for knowledge

- Information Universe
- More than Search engine
- Are the users satisfied ?

❖ Useless and stale information should be deleted

❖ FI vs. IU

- Separate layer or integrated architecture ?
- IU : more than cloud

❖ Integrated Architecture for Device-Network-Application/service

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

❖ 2030

- Information Universe : 1000x
- Internet Infra is ubiquitous

❖ Paradigm shift for new Internet

- Realtime
- Quality
- Knowledge

❖ Future Internet

- Architectural changes
- New business models
- Reach out for newcomers