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**IEEE ICC 2013
Industry & Business Panel**

**Cloud Computing and
Communication**

~ Introductory ~

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Cloud Computing

A style of computing in which **scalable and elastic** IT-enabled capabilities are **delivered as a service** using **Internet** technologies.

Based on Gartner's definition

<http://www.gartner.com/it-glossary/cloud-computing/>

3.11 Tohoku Earthquake and Tsunami

Communication services were down

- 1,000,000 landlines outage
- 14,800 mobile base stations damaged

Internet was not completely dead, but at a very limited quality

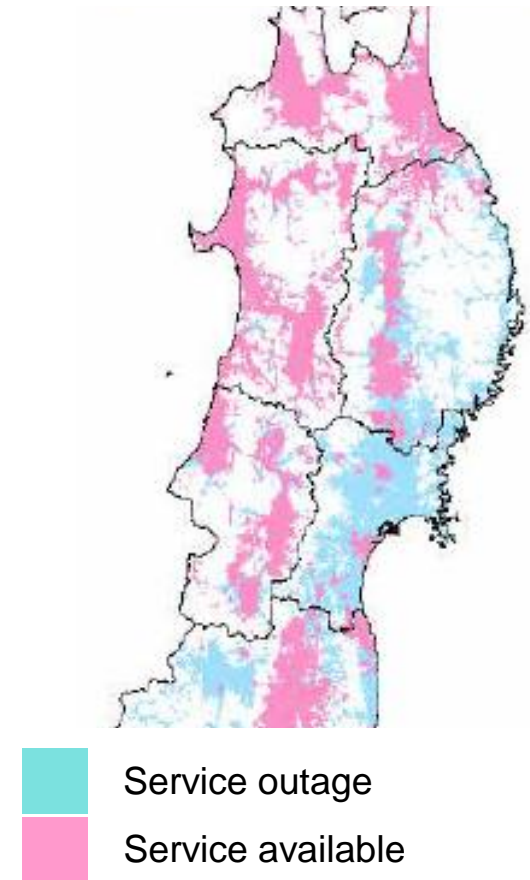
Google: “Google Person Finder”

- Safety check service was launched in 1h 46min after the earthquake

Twitter

- Played a critical role in sharing local info (food, doctor, blackout, etc.)
- New registration world-wide jumped up by 25% on 3/12
- Local governments relied on twitter for info transmission

Mobile service map (3/12)



Source: NTT docomo

Source: www.47news.jp

3.11 Impact on Enterprise / Public IT systems

IT customer's mindset was changed

- **before:** On premise in convenient large cities

- after:** Cloud in remote / distributed data centers

- ✓ Electricity saving became more important in view of power shortage and rise in electricity price

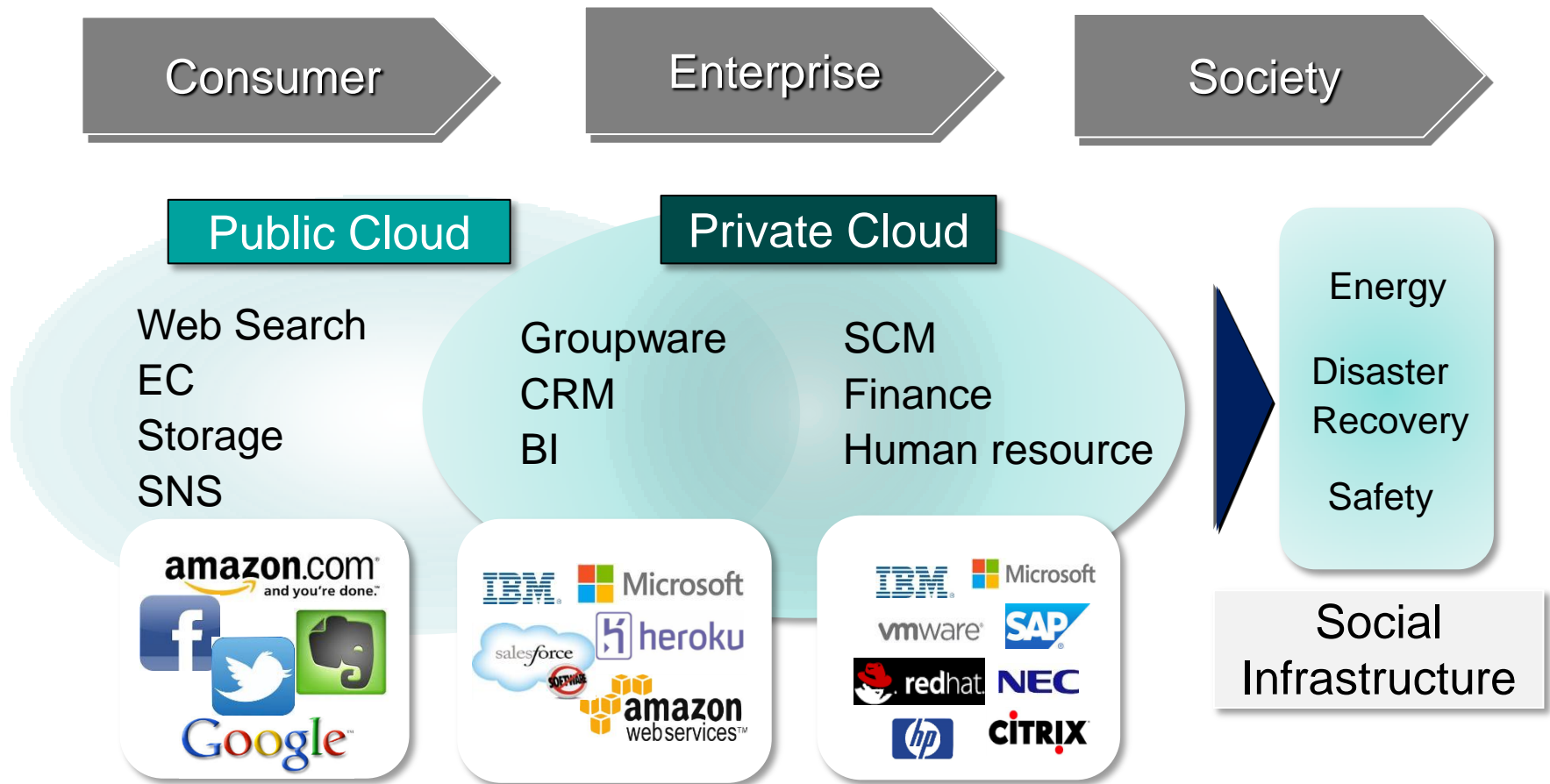
- ✓ Disaster recovery / BCP was revised to be viable

Government started twitter information services as a social infrastructure

Source: www.47news.jp

Cloud Landscape

Cloud application expands to enterprise and society from consumer services

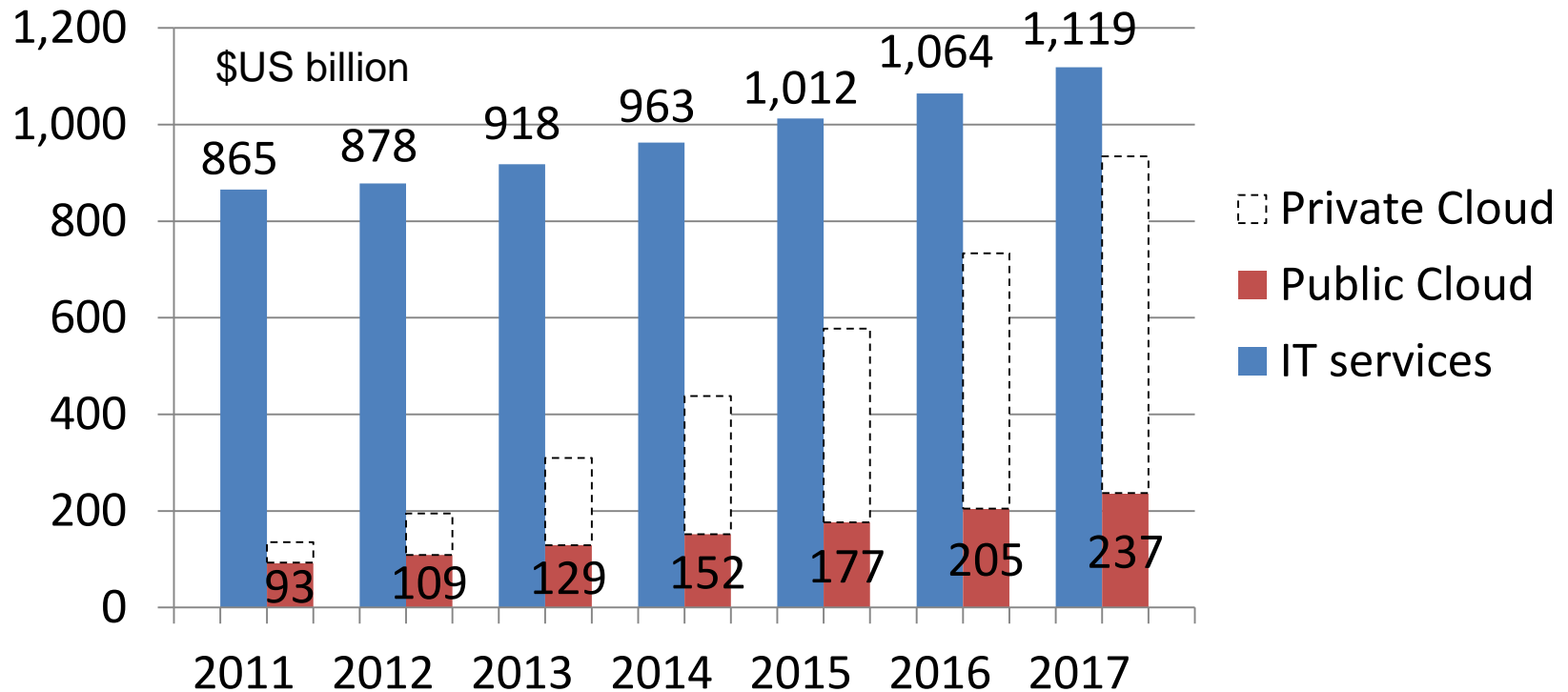


(Vender list: based on IDC 2013)

Cloud Market Forecast

Public cloud market: 14% in 2013 of the total IT services

CAGR - Public cloud: 17%, IT services: 4.3% (2011-17)



Rapid growth of private cloud, migrating from legacy IT system

Based on Gartner market forecast 2011

Technology Aspects

Big Data Analytics

- Business process optimization
- Predictive analysis
- Physical system control

Security

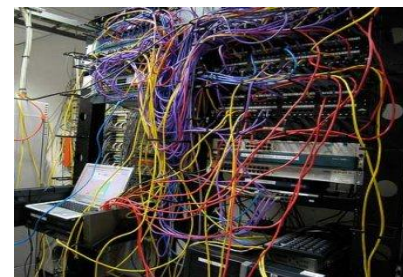
- Cyber attack
- Privacy

Data Management

- Easy scale up and scale out
- Low latency

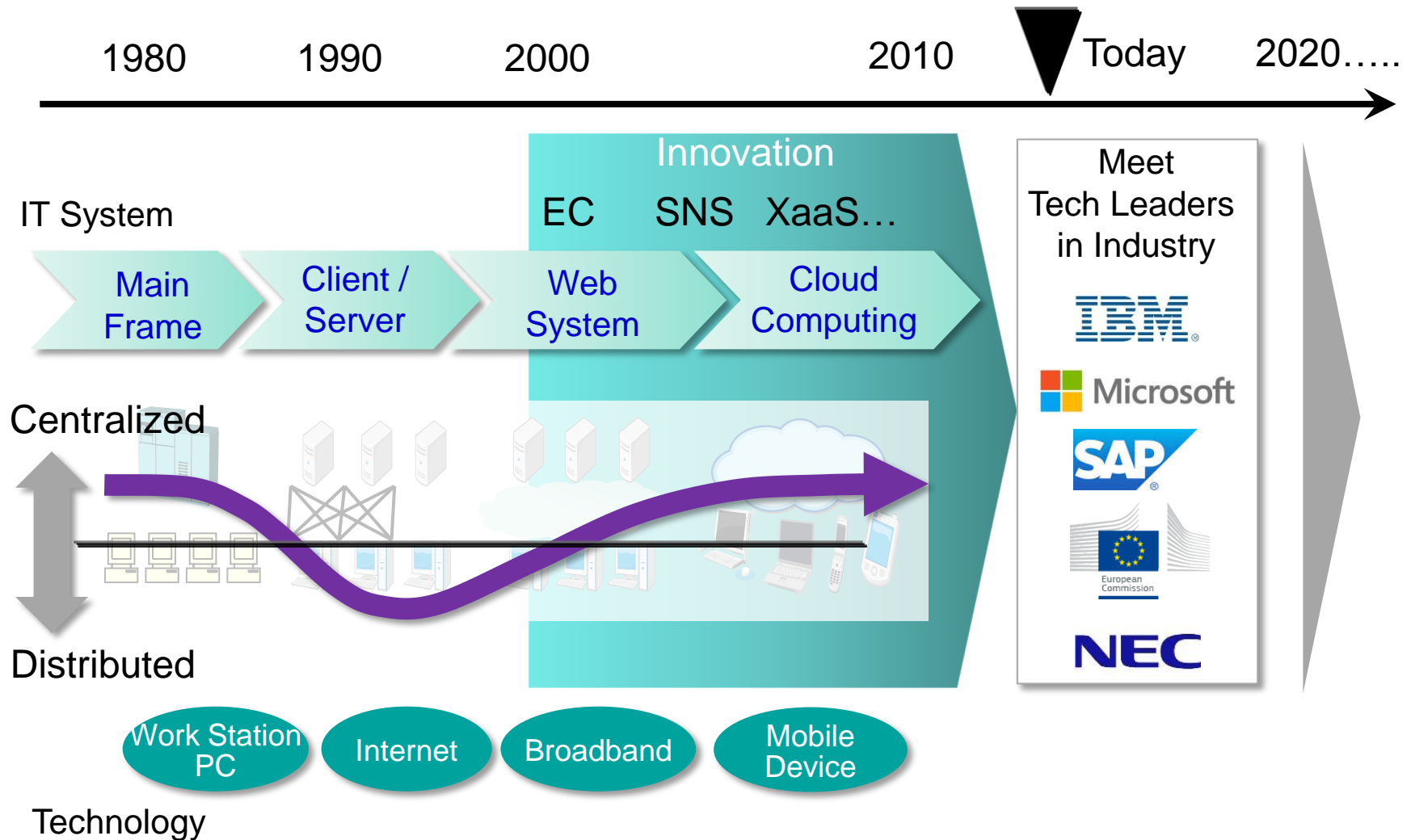
Network

- Software-defined networking
- M2M sensor network



Tech drives Innovation, Innovation drives Tech

How will cloud-computing evolve?



Technical Scope of This Panel Session

How will cloud-computing evolve?

- Which application areas can cloud-computing cover?
- What are the limits of cloud-computing?
- How much does cloud-computing integrate into existing technologies?
- What are the future challenges in cloud-computing?
- Which areas may be replaced by cloud-computing?

Panelists

Dr. Matthias Kaiserswerth

- Director and Vice President, IBM Research - Zurich

Dr. Wolfgang Theilmann

- Head of Enterprise Platform Research, SAP, Germany

Dr. Götz Brasche

- Microsoft Research, Advanced Technology Labs, Germany

Dr. Francisco Medeiros

- Deputy Head of Unit, Unit E2 Software & Services, Cloud Computing, European Commission

Empowered by Innovation

NEC