2nd FORUM ON THE PHILIPPINE ICT INFRASTRUCTURE

National Academy of Science and Technology, Philippines

March 28, 2014

9:00 AM to 12:00 Noon

Hyatt Hotel Manila

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Long-term Strategic Development: Needs, Challenges, and Issues

What is ICT Infrastructure?

- Sometimes referred to as Information Infrastructure or Cyberinfrastructure

Pervasive Use of the ICT Infrastructure

- Substantial use of the ICT infrastructure is for Internet connections
- Usage is for high bandwidth applications predominantly for social networking and entertainment:
  - Facebook
  - Twitter
  - Google
  - YouTube

Pervasive Use of the ICT Infrastructure - 2

- A more advanced Philippine ICT Infrastructure is needed for a massive information flow through the Internet, inside and through the geographical boundaries of the Philippines.
- In addition to the physical infrastructure, human resources are vitally needed
  - Electronics, communications, and computer engineers are needed
  - Computer scientists, information technologists, and information systems professional are needed.

Evolution of the Internet

- 1972 - Advanced Research Project Agency (ARPA) of the US Department of Defense established a network to connect various military agencies and a handful of US Research Universities
- 1973 - Robert E Kahn of ARPA and Vincent E Cerf of Stanford University designed an internetwork architecture, the Transmission Control Protocol/Internet Protocol (TCP/IP) that would allow different packet networks and machines to communicate across the network.
- 1974-1978 Government and university contractors refine the protocol for the ARPANET.

Evolution of the Internet - 2

- Mid 1980s – NSF takes over civilian portion of ARPANET which became the NSFNET
- 1994 – US National Academy of Engineering Annual Meeting theme: Revolution in the US Information Infrastructure
- 1994 – In the Philippines, March 29, 1994 PhilNET became operational via a 64K serial link

Cloud Computing

- IEEE Communications Society GLOBECOM

Keynote address, December 2013 by

Lew Tucker, CISCO VP and CTO for Cloud Computing, on Cloud Computing

- IEEE Computer Society has created a new magazine on Cloud Computing, first issue March 2014

The Internet of Things (IoT)

- The first IEEE World Forum on the Internet of Things was held in Seoul, Korea on March 6-9, 2014
- According to the Trillion Sensors Summit held at Stanford University in October 2013, the number of machines and devices connected via the internet will be about 1 trillion by 2022.

Critical Infrastructures Relationships

- ICT Infrastructure is essential to modern operation of other critical infrastructures:
  - Public Health Infrastructure
  - Energy Infrastructure
  - Water Supply Infrastructure
  - Emergency Disaster Mitigation Infrastructure

ICT Infrastructure Needs

- Innovations in ICT hardware products, software products, and IT services are needed
- Human resources are needed to operate, maintain, and upgrade the ICT physical infrastructure
- ICT products and services need to be globally competitive

Role of Government in ICT Infrastructure Enterprise

- Security
- Public Good Aspects
- Intellectual Property
- Providing Access for Other Critical Infrastructures