NGN Strategy for developing countries: Vietnam's report

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1

Contents

1. Current status of telecommunication in Vietnam
2. Next Generation Network (NGN) plans
3. Government's Policies for NGN
4. NGN deployment issues

2

1. Current status of Telecommunication in Vietnam

3

1.1. Overview of Telecommunications (As of Sep. 2005)

- **Total number of the telephone subscribers: 28 millions (Mobile occupied: 71%)**
- **Density of subscriber: 33%**
- **Total number of the equivalent subscriber of Internet: 4 millions.**
- **Number of internet users: over 16 millions (18% of population)**
- **Market:**
  - One of countries has the highest growth rate in the number of tel. Subs. (213% compared to 2005)
  - 8 operators of which
    - VNPT, Viettel, and VPT: licenses of full services, national and international backhaul networks;
    - SPT and Hanoi Telecoms: licenses of mobile, fixed, and value added services;
    - Vishipel: license of water line, national and international maritime tel. services
    - New commers: VTC, FPT Telecom

4

1.2. Network architectures

The existing telecommunication network consists of various networks providing different services:

-PSTN:
- Greatly invested, huge number of subscribers
- Technologies and network architectures: Almost inflexible
- Main services: voice, data and some value added services
- Disadvantage: difficult to provide new services.

-PSDN (Data/IP network):
- Services: Internet, Intranet, VPN, etc.
- The number of subscriber: increasingly emerging
- Demand for new services: highly grow
- For voice: VoIP

-Cellular PLMN:
- GSM+GPRS, W-CDMA in trials
- CDMA2000 1X, 1X EV-DO

5

1.3. Requirements for NGN development

- Utilize the existing network infrastructures
- Reduce cost of services
- Decrease the number of network elements (NE) by integrating applications, services into one NE
- Support for new services and fast roll-out
- Increase the number of subscriber rapidly and effectively
- Open and scalable network architectures
- Low OAM cost

6

2. NGN plans

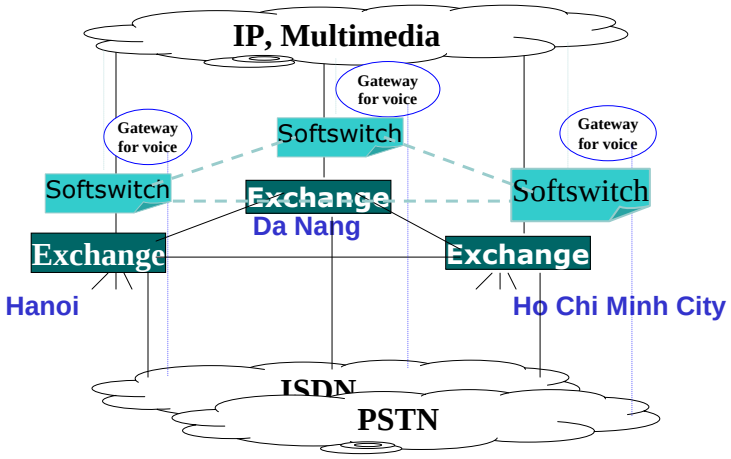
7

NGN plans

- VNPT has been deploying NGN phase 2 (network expansion) with success in several NGN based services; concentrate on the utilization of the existing networks
- Other operators (new comers): Viettel, SPT, VPT, FPT Telecom … have been studying to set up their first NGN

8

NGN deployments



9

Networks

- Method of deployments:
  - Step 1: Deployment of the core NGN for data services, Internet access, VoIP
  - Step 2: Re-route voice traffic from PSTN to NGN.
- The progress of deployment:
  - 2003: Set up NGN backbone with 2 Soft switches, installation of 3 core M160 in Hanoi, Danang, and HCM city
  - Oct.2003: Deploy the capacity of 20Gb/s in the backbone by using DWDM technology.
  - 2004: Set up 31 regional Media gateways in 31 cities/provinces. The total VoIP traffic and 20% of PSTN traffic are re-routed to NGN
  - 17 cities/provinces are provided with MegaVNN (fast Internet access) services through ADSL and the 26 others through POP/Internet.

10

Services

- 2002:
  - 39 provinces using VoIP
  - Trials on ADSL services in Hai Phong, Binh Duong, Dong Nai, Ha Noi, and HCM city.
- 2003:
  - WIFI services (by VDC) for SEAGames 22 in Ha Noi, HCM city
  - July 2003: MegaVNN service (ADSL) was commercially introduced
  - VoIP 1717, 171 for nationwide, prepaid 1719
  - Free phone 1800, Information & entertainment 1900
- 2004:
  - ADSL-VNN and xDSL-WAN for national and international PC networking by SHDSL or ADSL combining with MPLS/VPN technology on NGN
  - MAN in HCM city
  - VPN, VPN SecurNet

11

The ability of multi-services, new and potential services

- Trial and intended services:
  - Video services on xDSL access networks (by VASC and Ha Noi Post&Tel.)
  - Video conference (by VTN)
  - Short messaging systems on the fixed networks:F-SMS (by Hanoi Posts&Tel.)
  - IP CENTREX (Central Office Exchange Service) (by VTN)
  - MMA (in cooperation with Siemens)

12

Technical Standards

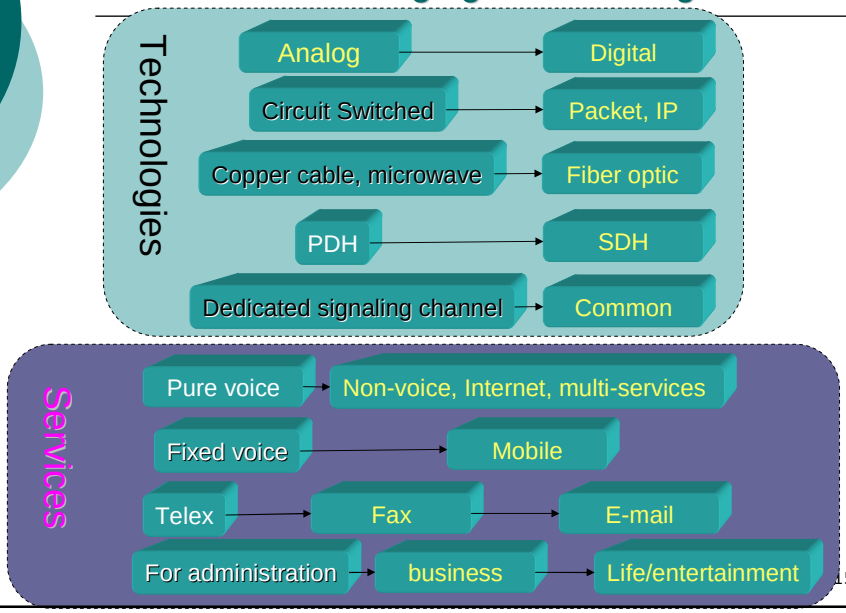
- Standards mostly meet requirement of the reality of networks:
  - Standards for telecommunications equipment: 14 sets including PSTN and ISDN connections
  - Standard for radio communications equipment: 22 sets covering various mobile technologies such as GSM, CDMA,PHS.
  - Standard for networks connections: 17 sets covering interfaces, signaling, synchronization etc…
  - Standards for QoS and quality of telecommunications network: 7 sets.
  - Standard for electrical safety, lightning protection and EMC: 12 sets
  - Other standards.

13

3. Government's Policies on NGN

14

Decisions on changing of technologies



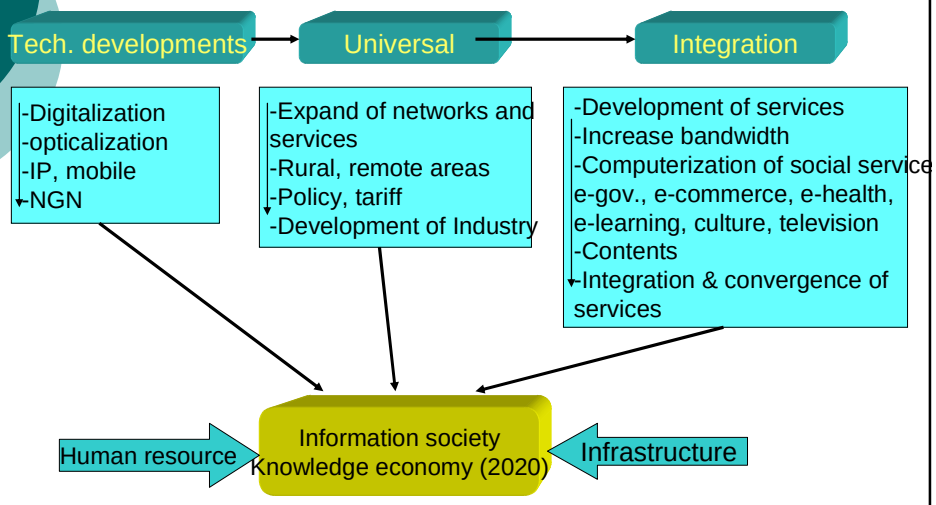
15

The National plan for NGN development of Vietnam in the period of 2006-2010 (under construction)

- Set up national network architecture in multi-operator environment
- The selections and recommendations of suitable technologies and services for NGN deployments
- Roadmap for NGN evolution from the existing networks
- Inter-connection issues between operators in NGN deployment.
- Policies, solutions for support the development of NGN

16

Target to an information society



17

Standardization activities

- Motivate standardization activities; set up a unique system of legal documentation for technical standards
- Innovative management activity; accelerate setting up new technical standards for ICT products, equipment, networks and services.
- Encourage operators to contribute in setting up standards and apply technical standards in their activities.
- Participate in international standardization organization activities of such as: ITU (WTSA), APT (ASTAP).

18

4. Issues in NGN deployment

19

Issues in NGN deployment

- Standardization:
  - Open and compatible
- Inter-connection between operators
- The convergence of fixed and mobile networks:
  - In fact, there are 2 separated networks
- Killer services?
  - Voice is currently dominant
- Requirements of QoS for various services

20

Standardization Deployment

- Complete legal documentations on standardization
- Accelerate International standardization activities
- Applying international standards and set up equivalent standards
- Gradually set up local working groups for contributing in International study groups.
- Organize conferences/forums on ICT standardization activities

21

Thank you!

22