

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Building Efficient Society through Sustainable Telecom Growth

2nd International Conference on Construction Industry ICCI 2006
Provision of Basic Utilities: The Way Forward

August 29-30, 2006

EXPO Center, Karachi -Pakistan

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Digital & ICT Revolutions The Paradigm Shift

- Technological breakthroughs have revolutionized communications and the spread of information.
- The digital and ICT revolutions are twin revolutions.
- Today, voice is translated into packets, sent over networks to remote locations.
- For data transmission corporations need “high speed” networks.
- The “Converged Network” is the solution, which allows transmission of different services (telephony, television, internet) via the same digital network

Contemporary Telecommunication Needs

- There are usually long waiting lists of people who want a telephone, mainly for business, social and security reasons. There is also a large potential market for advanced telecommunication services needed by businesses, research institutes and public services.
- Large national and transnational companies, including banks, with facilities in developing countries are of course well aware of the strategic value of telecommunications and can afford to build or lease their own networks.
- By contrast, small enterprises and public institutions, are only vaguely aware of the possibilities offered by advanced Telecom services and often consider themselves fortunate if they have access to a telephone.

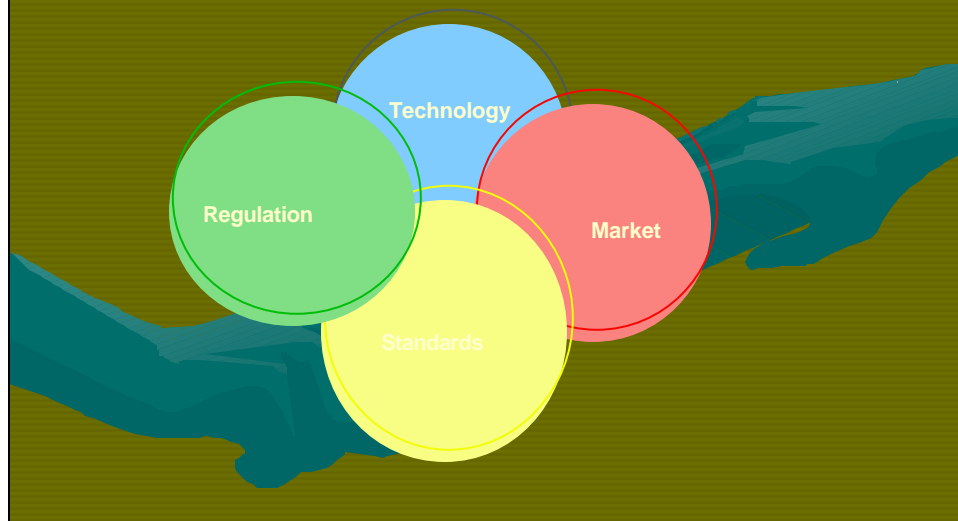
Contemporary Telecommunication Needs (Contd....)

- The efficiency of often inadequate public services, such as education, health care, security, transport and processing of information, records and general statistics, could be greatly enhanced by improved access to telecommunication services.
- Efficiency of banking services and financial markets, which are so crucial for development, depend heavily on telecommunication
- Access to advanced telecommunication services would give small and medium enterprises (SME) the tools they need to compete in the global economy.

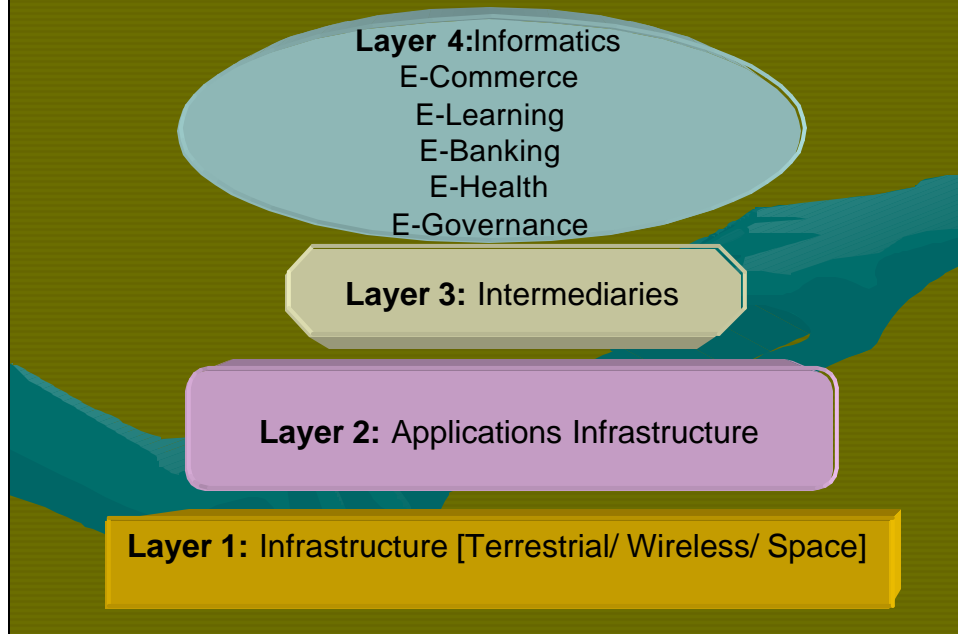
Some Important Avenues to Understand the Telecom Facilities

- The infrastructure of telecommunications differs from that of other sectors. It is financed, built and maintained almost entirely within the private sector
- Ownership is divided among multiple companies that provide services using a variety of technologies, and operating under different types of government regulations.
- The ways which the customers use these services will drastically change in 5 years due to the technological improvement in this industry

Network Evolution Key Factors



Conceptual Frame of Informatics

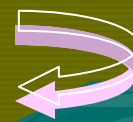


Prime Movers

Two fundamental Characteristics:
High Bandwidth & Low Latency



Applications



Interapplication Delay

Bandwidth
(Veracious appetite)

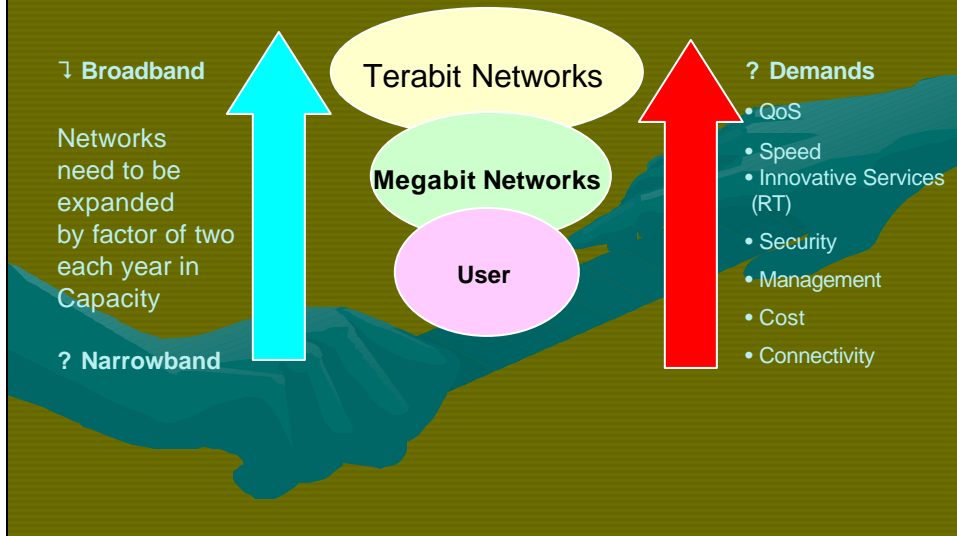
✍ Voice traffic increasing @ 10% per year.

✍ Data traffic increases @ 80% per year

How to
increase
Bandwidth

Installing more fiber
(Metro net)
Increases
Transportable BW

Future Vision



Points to Ponder

- Expansion of Broadband Services/ Network
- E-Governance/ Commerce/ Learning
- Use of Innovative Technologies
- Improving Quality of Service: Meeting expectations of Customers & Regulator's standards
- Cost vis-à-vis Keeping balance in Investments, RoR, Tariffs etc.

The Digital Divide: A real Problem

- The digital divide separates the information rich and the information poor.
- The OECD defines the digital divide as the difference between individuals, households, businesses, and geographic areas with regard to:
 - Their opportunities to access ICTs
 - Their use of the Internet for a wide variety of activities

The Digital Divide: A real Problem

- It is the gap between those who have real access to information and communications technology and who are able to use it effectively, and those who don't have such access.
- Lack of access to ICT goods and services poses social and economic disadvantages.
- The digital divide is usually measured in terms of citizen/ population access to ICT, the indicators:
 1. Teledensity
 2. PC deployment and penetration; and
 3. Number of Internet Users.

Challenges

- Millions of people in Pakistan are without basic telephone service, which is the major source of access
- Pakistan has to increase Teledensity and enter into new world of broadband and e-commerce.

Fixed Lines	Wireless Local Loop	Mobile	Total
3.39	0.66	22.21	26.2

Internet Users:	
Dial up: 7.5 (M)	DSL: 19,462

Personal Computers: 5% Source: WB

Pakistan in Region

	2003	2004	2005	2006
Hong Kong	163.0	173.0	178.0	178.0
Singapore	125.5	130.5	136.2	143.2
Malaysia	62.36	76.7	77.7	94.1
Sri Lanka	12.17	16.6	23.4	27*
Pakistan	4.3	6.3	11.9	23.1
India	7.1	8.9	11.5	12.8
Bangladesh	1.64	2	4.5	9.0
Nepal	1.8	2	3	3

Stepping into Right Direction

- Tremendous Growth of 537% in teledensity in Pakistan in last 4 years. Telecom access, which was merely 4% per hundred inhabitants in 2002, now stands at 23.1% per hundred inhabitants in 2006. But still long way to go as we are lagging behind in region.
- Today mobile subscriber base has reached 30 million whereas 2 million new connections on average are added per month in total subscriber base. Today every 5th Pakistani owns a mobile phone in Pakistan, which was just a rich man's toy few years back.
- Telecom contribution to national Exchequer has jumped from Rs.10,048 M in 2001-02 to Rs. 72,272 M in 2005-06, with more than 2% share in GDP.

Major Issues

- Network reliability,
- Deployment of and access to broadband telecom services
- How to encourage innovation and entrepreneurship through the delivery of telecom services.

Terrestrial Network

- Terrestrial Network is most sensitive and prone to many threats e.g.
 - Malicious cutting of underground copper and optical fiber cables.
 - Flow of Sewage water in PTCL's duct routes and manholes
 - Outage and interruptions in main power supply
 - Theft of material and damages to outside plant property

Network Reliability

- The Local Govt. should work with the telecom and real estate industries and representatives of major user groups to establish standards for network reliability.
- The Local Govt. promulgate a regulation and create new real property tax incentives for enhancing reliability at the building level viz:
 - Provision of optical fiber/ fiber-coax cables in high rise buildings.
 - Proper and standardized block wiring in multi-storey buildings
 - Appropriate in-house wiring
 - Currently haphazardly overhead cables (CATV etc.) wrapped around power poles be properly laid in lateral conduits.
- The road cutting charges are very high, which need to be rationalize by Local Govt. and Cantonment boards.

Network Reliability (Contd..)

- The city can use the “Tameer-e-Watan” program to finance the installation of carrier neutral lateral conduit in hot spots
- Under “Tameer-e-Watan” to finance the installation of redundant fiber connections to critically important public and private facilities in city Business Districts.
- Bilateral agreements for right of ways.
- Enforcement of Law/ regulations
- Regulators & SPs Liaison Committee.
- Encourage the formation of Consumer Societies.

Deployment of and access to broadband telecom services

- Work with current providers of broadband infrastructure and services to identify opportunities for extending their services into commercial and industrial areas.
- Explore the feasibility of expanding portions of the Optical Fiber Network to service key properties with not-for-profit tenants in high-priority development areas.
- Provide guidance and information to business improvement districts and other neighborhood organizations interested in establishing local wireless broadband networks, especially in areas currently under-served by DSL or cable modem service.

Entrepreneurship Promotion

- Support and encourage university-based initiatives that target new opportunities in telecom.
- Work with the private sector and other public agencies to develop and implement projects that would test innovative approaches to delivery of broadband services, including commercial use of WiMax and broadband over-power line technology.
- Ensure that the tariff packages for city dwellers by broadband services providers to ensure that their offerings are flexible
- Promote the city identity as a center of innovation through participation in industry events and through a targeted media campaign.



Need for National Mission

Let us develop a General Agreement on Public Services through a process of research and consultation with civil society organizations, international institutions, governments and service providers; to secure their commitment to making their policies and activities compatible with its terms.

