

Universal access in a broadband-based IP-enabled environment: how is access for all ensured?

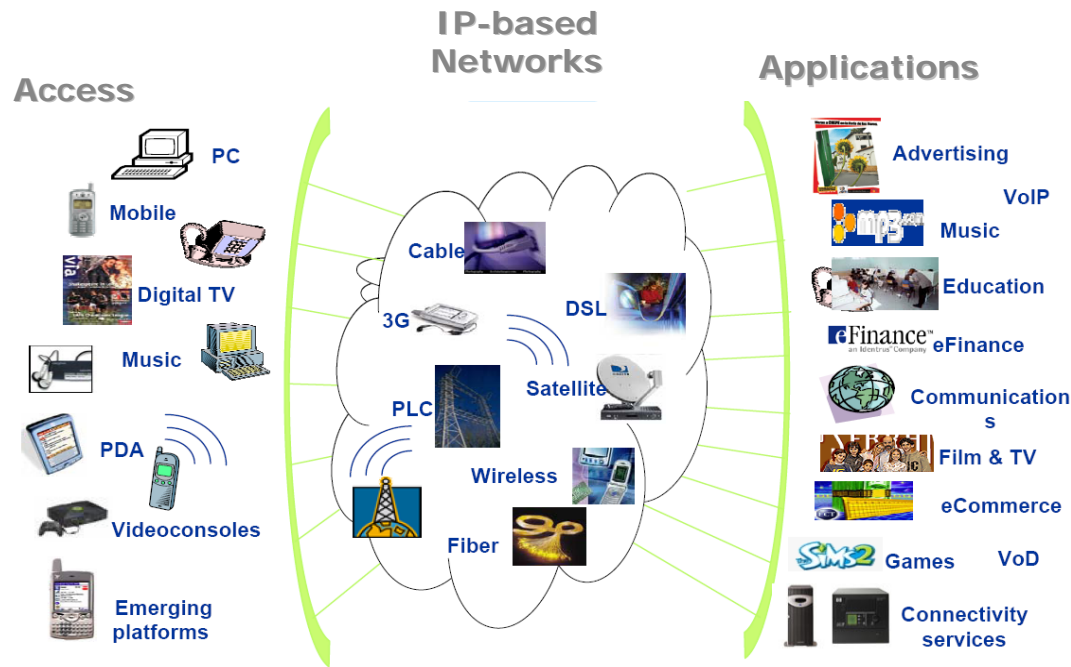
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Deputy General Director

2 May 2007

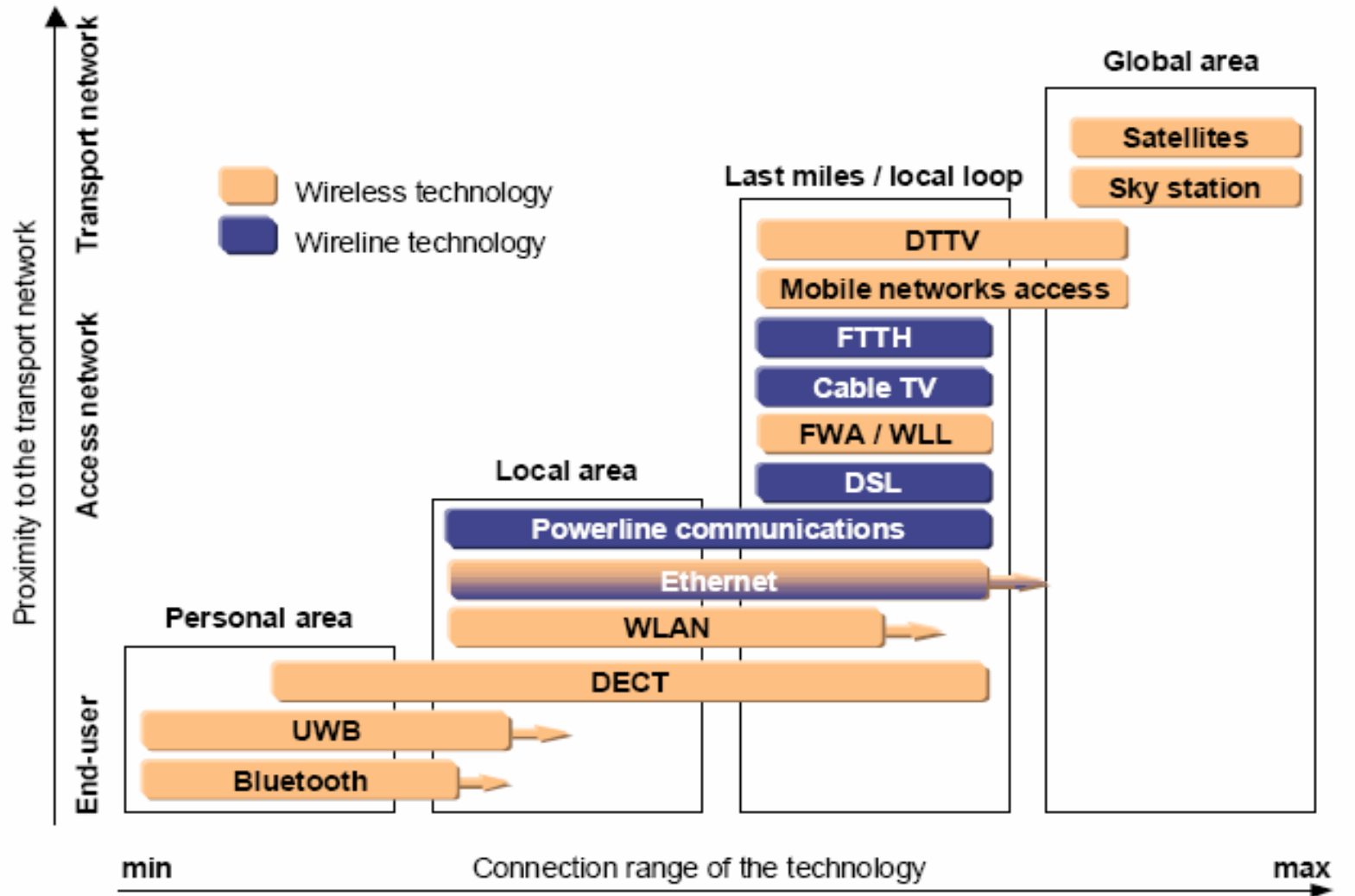


What is NGN? Overall picture...

- Next Generation Network (NGN): a packet-based network able to provide telecommunication services and able to make use of multiple broadband, QoS-enabled transport technologies and in which service-related functions are independent from underlying transport-related technologies.
- It enables unfettered access for users to networks and to competing service providers and/or services of their choice.
- It supports generalized mobility which will allow consistent and ubiquitous provision of services to users.



Source: ITU

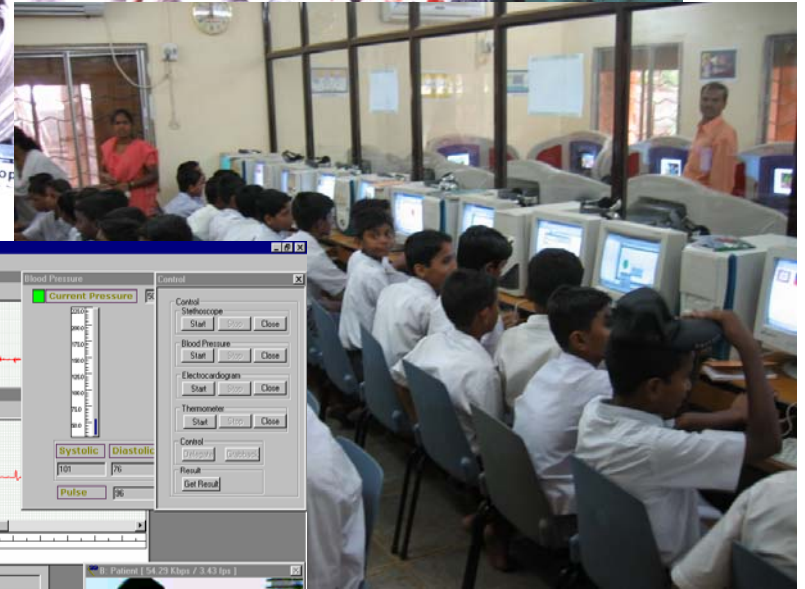


(Source: Devoteam Siticom)

Why people want to access – no less important...

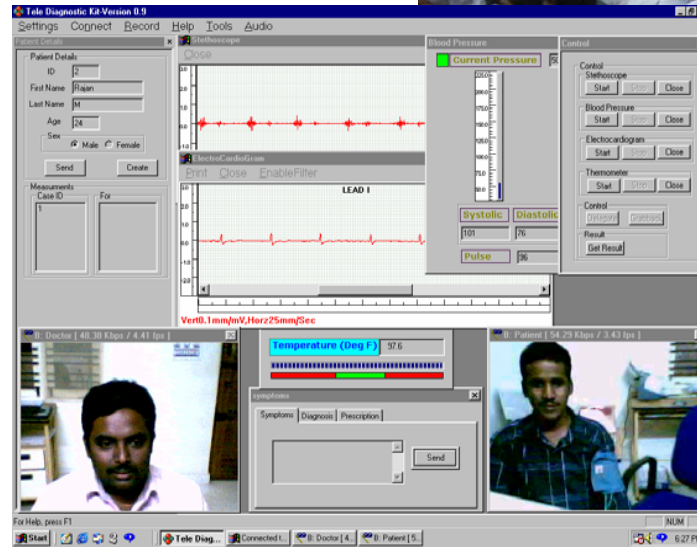


OR



Vision of the NGN world:

- Futuristic future, or
- Less fancy answer to the real needs...



Why people want to access – no less important...



- NGN is not only about
 - “n-Play”
 - IPTV
 - Video-on-Demand
 - Intelligent home
 - Videos and music
 - Communicating with friends
 - Mobile-TV
 - Entertainment...



- NGN is about an enabling environment to get any services people want:
 - Greater variety of access
 - » Greater choice – prospective of greater competition
 - Same but cheaper
 - Anything people could want...
 - » Creativity is the only limit...



Why people want to access - no less important...



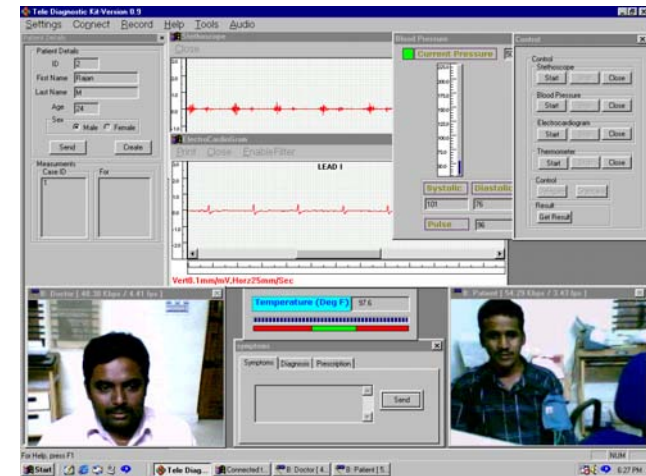
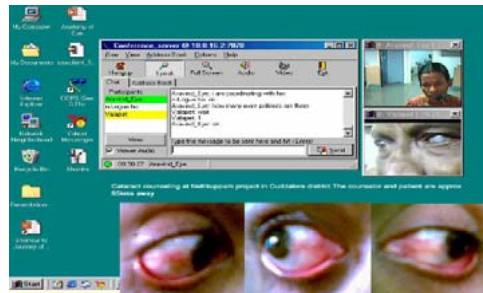
Maslow's Hierarchy of Needs is shown above. The pyramid illustrates the five levels of human needs. The most basic are physiological and safety/security, shown at the base of the pyramid. As one moves to higher levels of the pyramid, the needs become more complex.

Source: UTAS, Community Leadership in Rural Health

- Basic needs should be satisfied in a first place
- NGNs should enable services that satisfy specific needs of the people
 - One size does not fit all



- Direct assistance in day-to-day activities
 - Increasing access to healthcare
 - Remote eye care (Aravind Hospitals)
 - Telemedicine (ReMeDi™)
 - Veterinary care with Veterinary college, using the video conferencing
 - Videoconferencing to connect farmers to an agricultural expert



Examples from India. Source: A. Jhunjhunwala, IIT Madras

No futuristic toys, but services that people need...

- Enhancing access to education

- Assistance in preparation for high school exams

- » Test deployed in 18 villages in India, 757 children a year (March 2006)

- » Pass percentage 80% vs. state rural statistics of under 50%

- Almost 100% passed in 14 out of 18 villages

- New sources of income

- Rural BPO activities

- » Administrative

- Data entry, Data formation

- » Localization

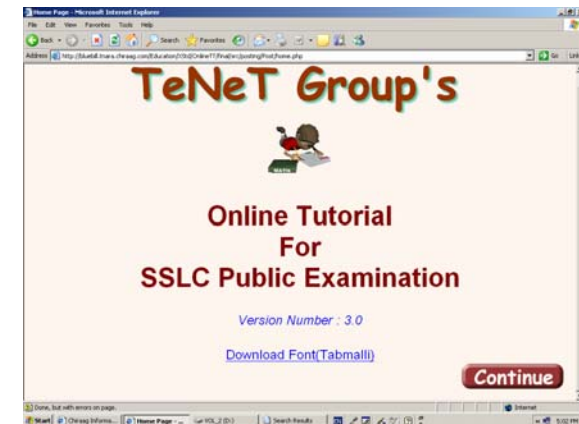
- Translation, Voice over

- » Engineering

- 2D drafting, 2D to 3D conversion

- Distributed production enabled by the Internet

- » Embroidery, bags, soap, banana rope, dry flowers



No futuristic toys, but services that people need...

- Better access to financial services

- Internet banking

- Credit rating

- Cash over SMS (the Guardian, 20 March 2007)

- » Target – people excluded from the formal finance sector (80 per cent of population)

- M-Pesa by Safaricom (Kenya)

- 10 000 people signed up in first two weeks

- Philippines – Globe Telecom and Smart Communications



Could market be used to deliver?..

- Doing business with underprivileged could be very profitable
 - GrameenPhone was the most profitable part of Telenor’s global mobile network in the final quarter of 2006 (Daily Star, 20 February 2007)
 - » 42.3 per cent operating profit margin
 - » Number of subscribers almost doubled in a year (from 5.542 million to 10.759 million)
 - » Idea – cell phone as a source of income (not as the item of expenses)
 - Offspring of GrameenPhone
 - » Village Phone
 - Business tool for local village entrepreneurs – mainly ladies (“phone ladies”)
 - GSM payphone paid by money from micro-finance (200USD)
 - Started in Bangladesh, replicated in Uganda and Rwanda
 - » CIC – Community information centres
 - Internet and other communications services to rural areas



Could market be used to deliver?..

- Entrepreneurship and small businesses could be a driver:
 - Entrepreneur-driven operator assisted telephone booths introduced in India in 1987
 - » 950,000 such PCOs covering every street
 - » Generate 25% of total telecom income serving 300 million people
 - Indian local Cable TV operators brought in cable connection to homes at US\$2 per month
 - The ITT Madras project, which allows a local Indian entrepreneur to establish a Kiosk with telephone connection, access to the Internet with 6 month unlimited access, multimedia PC, printer and power back-up, Indian language software, video conferencing software, and receive training for US\$1200
 - » Kiosk could be used to aggregate village's demand
 - » Services (besides telephony):
 - Learning typing, computer education, photography, movies on CD, EmailVoice and Video mail, e-government
 - Videoconferencing, providing telemedicine, veterinary care, e-learning, e-agriculture
 - » Needs US\$100 per month to break even
 - Aid/Grant does not scale – Successful enterprises can do this



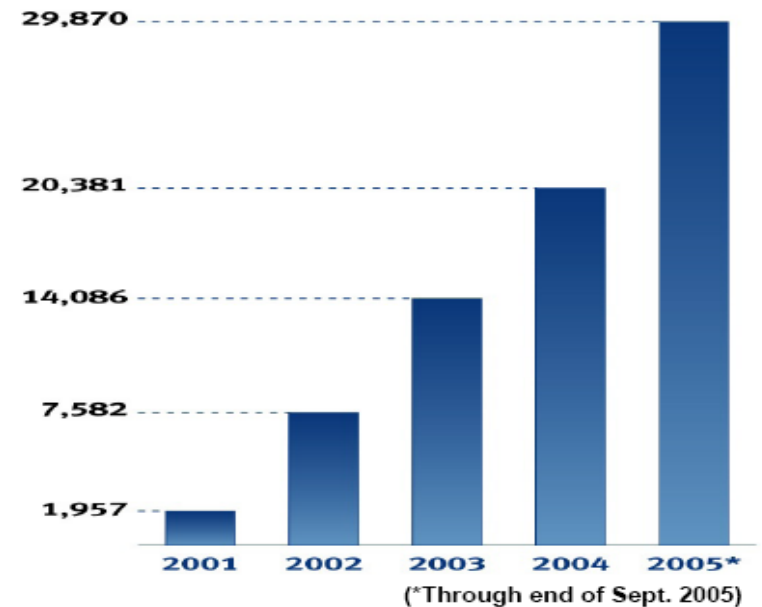
Bigger picture – main drivers of broadband development...

- Accessibility to necessary equipment
 - » Penetration of PCs
- Human capacity
 - » General training and education (secondary, tertiary as well as informal)
 - » E-literacy
- Favourable environment
 - » E-government
 - » E-commerce
 - » R&D expenditure
 - » ICT expenditure
- **Demand side indicators rank much higher than supply side**

NGNs and traditional universal services...

- Voice telephony is transforming
 - With VoIP, voice becomes just one of the applications delivered over a NGN
 - Service is separated from an access
 - » Need to rethink the definition
 - Estimates (EC) suggest that in the beginning of 2005 there were around:
 - » 4.9 million VoIP customers in Japan
 - » 1 million in the USA
 - » 110.000 in Germany, 220.000 in France and 50.000 in the UK

VoIP adoption, thousands of users



Source:IPC



NGNs and traditional universal services...

- Could payphones become a profitable business?..
 - One of the services provided by integrated communication centres
 - » Internet Kiosks, Public Internet Access Points, Community Information Centres
 - Standalone devices for converged communication
 - Reports from some forerunners are not encouraging
 - » BT (UK) has suspended its' programme of payphone replacement by Payphone Internet Kiosks that was launched just a few years ago. There are some signs that ordinary payphones could be installed returned.
 - » However the situation in a developing country could be very different
 - However it is important to constantly reconsider whether provision of payphones still serves its' original purpose...



NGNs and traditional universal services...

- Directory services

- Different solutions for different types of communications
 - » Not a great success of directory services in mobile telephony
- From auxiliary services to a variety of standalone ones
 - » Search engines
 - » Online white-/yellow-pages
 - » Contact management tools
 - » Key element of peer-to-peer VoIP communications
 - » Solutions for integration
- Subscriber data increasingly becomes a separate economic good
 - » Competition rules apply
 - » However privacy issues should also be taken into account
 - » The nature of link between communication services and contact data is changing

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NGNs and traditional universal services...

- Emergency services – who should be responsible?
 - Should it be linked to voice telephony services?
 - What is the role of providers of access?
 - » They are the only ones, who have location data
 - Could it be a separate service/application, provided directly by emergency services?
- Services to disabled:
 - 550 mio. disabled people world wide
 - Possibility to provide global services over NGNs opens opportunities for a market-based approach



- So what is universal services in an NGN world?..
 - In the world where market players no more sell technologies and services, but solutions...
 - Government should not care about technologies and even services anymore.
 - Universal services
 - » Anything that enables people to satisfy their genuine needs
 - » This is not about telecoms anymore – this is about general enhancement of people's lives
 - One size does not fit all
 - » Services
 - » Costs
 - » Value for money

- Let the market work
 - People are prepared to pay for the services they need provided innovative forms of payment are used
 - » If I earn more, I can give you back a share of it (microcredits)
 - Market is able to find solutions, if:
 - » Innovative entrepreneurs are able to access the market
 - Do not kill the jokers
 - Deep pockets is not the only answer
 - All artificial barriers should be removed
 - » Nondiscrimination is ensured
 - Appropriate pro-competitive framework is vital
 - » Proper access to resources administered by a state
 - Radio spectrum
 - » Appropriate interplay of ex-ante and ex-post regulatory framework
 - Private barriers are not a good substitution for public ones
 - However innovativeness and creativity should be rewarded
 - “Network neutrality” v. “walled gardens”
 - Could we aim to remedy “market failures” without aiming to create a “market”?

- Do no harm
 - If Government support was needed, intervention should aim to push a demand curve without favouring specific market players
 - » “Business as usual” (more targeted approach to usual functions of a Government)
 - Education
 - General raising of level literacy
 - Equipping of schools with necessary equipment and services
 - Public internet access points
 - E-Government, E-Health, E-Education
 - Small and Medium Enterprise support policy
 - Electronic commerce
 - Tax policy
 - Social policy (adequate level of living)
 - Aggregated procurement of access to governmental authorities
 - » Direct creation of demand
 - Vouchers for telecoms services
 - » *Ultima ratio* – competitively neutral supply side subsidies
 - Reverse auctions
 - True costs of universal services could be revealed in a market where effective competition is ensured and real (not artificial) market failures should be addressed

- Keep the safety net...
 - Existing measures ensuring universal services could not be withdrawn over night
 - It will take time for the market to mature and transform to NGN world
 - It will take time for competitive market forces to take over
 - » Even then it is important to identify and remedy real market failures
 - » Even then the approach should be pragmatic

So how is access for all ensured...

- NGNs aim to provide enabling environment for an abundance of tailored services
 - One size does not fit all any more
- Innovative and creative market players are able to serve the needs of everyone to a much greater degree than could traditionally be expected, provided:
 - They are given the ability to enter a market, and
 - Appropriate pro-competitive framework is in place, and
 - Unnecessary barriers are lifted
- Where state intervention is still needed, it should be carefully designed not to distort a market
 - Emphasis should be on assisting the growth of demand rather than pushing the supply
 - Where supply is required to be subsidized, measures employed should be non-discriminatory and competitively neutral
 - Only the free market could reveal the true cost of universal access
- Pragmatic attitude should be taken in lifting existing obligations

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