



UNIVERSAL SERVICE BROADBAND OPPORTUNITIES AND CHALLENGES

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OUTLINES

- US as a part of overall telecom development policy
- US policy and NGN development
- Example of the methodology for creation of US broadband policy

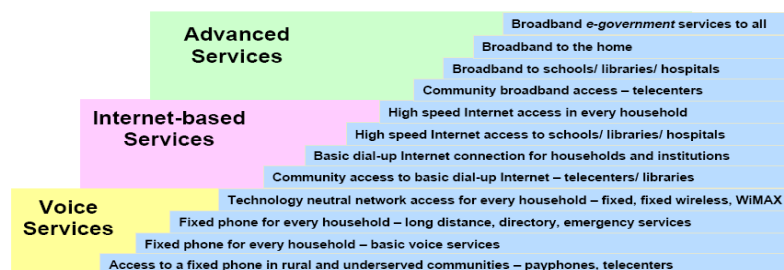
UNIVERSAL SERVICE

- Universal service policy is a crucial part of telecommunication development policy
- Scope and contents of US is usually defined in Telecom Act.
- US is under continuous monitoring for improvement
- Traditional approach to universal service/access
- Broadband services are more and more considered as a part of Universal service definition.

BB & definition of Universal Service

As technology has evolved, the scope of Universal Service has also expanded to include more advanced services

The Evolution of Universal Service Concepts



Broadband is recession-proof

- “Penn, Schoen & Berland Associates and Ipsos MediaCT as part of an ongoing global study that is examining the global impact our straitened economic times is having on the provision and usage of telecoms services and the role broadband services can play in promoting global economic growth and social welfare.

The research uses sophisticated statistical analysis tools to determine how consumers prioritise household spending. The results of a studies indicate **that people now regard broadband Internet access as such a necessary, vital and integral part of their lives** that, even during a major economic recession, they will cut expenditure on leisure travel, entertainment and eating out rather than their access to fast web services

- Tim Krause, Alcatel Lucent's Chief Marketing Officer says, "This [research] clearly shows that people across the world **rely on broadband services as a central part of their social and economic lives.**
- The key regional statistics outlined in the report shows that:
 - **81 per cent of Europeans now regard broadband connectivity and access as "central and essential" to their lives (that figure is 86% in France). In APAC the figure is 89 per cent, it's 80 per cent in North America and 75 per cent in Latin America". ***

* TV news, Posted By [Martyn Warwick](#) , 30 June 2009

Access to ICT for all

- Access to information and communications technologies has become crucial to a sustainable agenda of economic development and poverty reduction.
- The digital/broadband divide must be embraced as a critical obstacle to the fair and balanced development of the economy and society.
- Communications technologies affect poverty reduction through three primary mechanisms:
 - increasing the efficiency and global competitiveness of the economy as a whole with positive impacts on growth and development;
 - enabling better delivery of public services such as health and education;
 - and creating new sources of income and employment for poor populations.

IS BROADBAND INFRASTRUCTURE LUXURY?

■ AVAILABLE MOSTLY FOR

- URBAN AREAS
- THE PRIVILEGED
- THE RICH

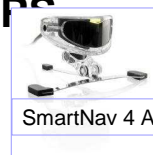
■ NOT AVAILABLE FOR

- RURAL AREAS
- THE UNSKILLED
- THE POOR

THE ROLE OF US POLICY?

THE ROLE OF BB SERVICES IN RURAL AREAS AND MARGINALIZED GROUPS

- EMPOWER PEOPLE IN REMOTE AND RURAL AREAS
- ACCESS TO INTERNET & CONNECTIONS FOR SCHOOLS
- FACILITATE HANDICAP PEOPLE AND SOCIAL MARGINALIZED GROUPS INCLUSION IN SOCIETY
 - American Disability Act (ADA), UK Disability Discrimination Act, Korea Disability Discrimination Act
 - Projects: developing assistive technology for people with disabilities, operating ICT accessibility forum, developing ICT accessibility standards, conducting research on ICT accessibility and increasing ICT accessibility awareness.
- DEVELOPMENT OF SUITE OF PHONES AND SERVICES FOR VERY LOW EARNERS IN DEVELOPING COUNTRIES - ACCESS TO MOBILE COMPUTING AND INTERNET SERVICES





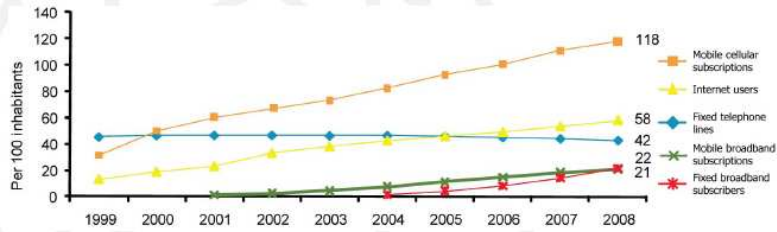
NGN AND US

- NGN becomes the crucial part of e-communication development strategy
- A clear strategic vision from Government on how it will realize its vision of a NGN that leaves no-one behind and which will help to secure the economic and social future of the country
- State intervention
- The nature and extent of this intervention will help to provide important clarity to marketplace on where investment needs to be directed
- The digital/broadband divide is a serious impediment to job creation, SME development and a balanced society that has equal access to services.
- US policy and broadband access as US Access



UNIVERSAL SERVICE CASE STUDIES

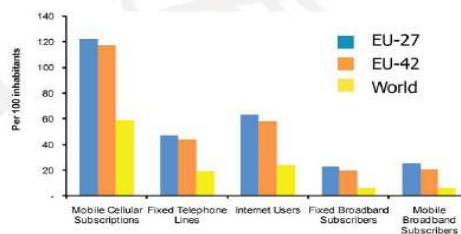
Strong 10-year growth in ICT services and high penetration levels in Europe-42



Source: ITU.

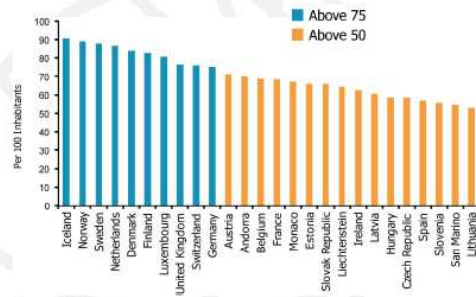
Europe

Europe's ICT penetration rates consistently higher than world average (2008)



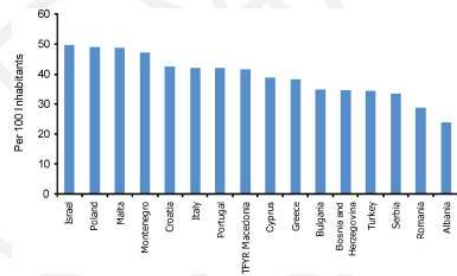
Source: ITU.

European countries with Internet user penetration above 50%, 2008



Source: ITU.

...and Internet user penetration below 50% (2008)



Source: ITU.

US in South East Europe countries

- Countries: Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia and Turkey
- Most of these countries have some form of universal service being delivered by one or more operators, often based on existing concessions or licenses.
- However, only a few countries have a universal service regime that is fully in line with the EU regulatory framework.
- EU directive on US still don't include BB as US

Universal Service funding in SEE

- **In practice, none of the SEE countries is compensating the universal service provider for the net cost of the universal service.**
- Croatia and FYROM have adopted legislation that allows them to introduce compensation schemes based on a cost sharing mechanism in the future.
- Albania, Bosnia & Herzegovina, Montenegro and Serbia are in the process of adopting similar regulations providing for the sharing of universal service cost between operators.
- In Turkey, contributions to the universal service fund are collected from several industry sources by the Treasury and allocated to the budget of the Ministry of Transport, although no payments have been made yet to the universal service provider.

- **WHAT IS WITH BB FOR US?**
- **IS US A PART OF BB STRATEGY (ITU-D, Geneva SG 1 US Seminar US, September 2008)**

GREECE - example

- Greek Broadband Task Force
- The Greek government has embarked on an ambitious plan to provide broadband via fiber networks to Athens, Thessaloniki, and Greece's 50 largest cities.
- Four million people of a total Greek population of 11 million live in metropolitan Athens
- The idea behind comes from similar activities in Europe
 - Sweden establishment of open access fiber infrastructure
 - Irish Broadband program
- Funding 36 M €: European Regional Development Fund and Greek Government
- Municipalities with at least 20 public points of interest in radius of 20km from city center were eligible for funding
- Access for less developed areas
- Local administration Authorities build and own the infrastructure-cost-based management and pricing

Spain - example

- National Program for Broadband Roll-Out in Rural and Remote Areas
- Technologies Deployed Throughout the Program per Application:
 - ADSL 47%
 - Satellite 30%
 - WiMAX 16%
 - ADSL/Satellite 3%
 - ADSL/WiMAX 4%
 - WiMAX/Satellite 0,1%



American Recovery and Reinvestment Bill, 2009

- 7,2 billions from US budget to BB for rural areas
- President Obama stated that each USD invested in Broadband gives back to the economy then times more



**A METODOLOGY
FOR CREATION
OF US POLICY**

METHODOLOGY STEPS

- **CREATION OF US PROJECT**
 - Make a detailed overview of the situation of telecom infrastructure and telecom service provisioning in the whole territory of the country
 - Analysis of the current situation
 - Research in the field
 - Results
 - Proposal for scope and content of US
 - Recommendations for US implementation
- **PUBLIC DISCUSSION**
- **US SCOPE**
- **US OPERATOR DESIGNATION**
- **US IMPLEMENTATION**
- **MONITORING**

OVERVIEW OF THE CURRENT SITUATION

- **Analysis on US level in country on the basis of region, municipalities, settlements**
- **Municipality statistics**
 - Existing fixed telephony services
 - Mobile signal coverage
 - Internet
 - Public pay phones
 - Social marginalized categories
 - Number of handicap persons

DEVELOPMENT OF DATABASES

- DEFINITION OF THE MAIN DATABASES FOR REGION, MUNICIPALITIES AND SETTLEMENTS BASED ON
 - number of populated places (settlements with more than 50 inhabitants and/or 20 households)
 - inhabitants
 - inhabitants aging
 - migration parameters
 - employments
 - GDP on municipality level
 - number of fixed phones
 - teledensity
 - identification of settlement without telephone,
 - identification of us critical municipality /region

THE MAIN DATABASE: SETTLEMENTS

- For each settlement:
 - Number of fixed telephone subscribers
 - Inhabitants index 2009/2000
 - Mobile signal coverage for:
 - settlements with 0%, 4% and 10% penetration
 - Internet access

DATA FROM DATABASE

- Locations (Settlements) without telecom services (0% penetration)
- Locations with low penetration (less than 4% and less than 10%)
- Identification of areas lacking mobile signal
- DEVELOPMENT OF THE LIST OF CRITICAL SETTLEMENTS

Criteria for definition of critical settlements for US- example

- **Basic :**
 - + 20 households and/or
 - + 50 inhabitants
- **Additional:**
 - no mobile signal – critical
 - inhabitant's index (2002/1991)
 - school, post office, ambulance, on the border to EU.....

Structuring the settlements in the list of critical settlements for US

- Number of inhabitants
- Potential touristic locations
- Natural resources
- Requirements for BB access



Analysis of the existing tariff packages

- Social categories
- People with special needs
- OECD methodology for LRB usage could be applied in order to approximately defined subsidy for US from US fund
- Overview on other utilities tariff packages
- Needs for BB services for handicap people



RESEARCH IN THE FIELD

- CREATION OF QUESTIONNAIRE FOR FIELD REASERCH
- COLLECTION OF DATA FROM FIELD
- COMPARISON OF REAL SITUATION WITH DATA FROM DATA BASES
- FINAL RESULTS
- **EVALUATION OF POSSIBLE SCENARIOS**
 - ELEMENTS FOR TECHO-ECONOMIC ANALISYS
- EVALUATION OF NEEDS OF HANDICAP PEOPLE AND SOCIAL MARGINALIZED GROUPS
- **RECOMMENDATIONS FOR US SCOPE**
- **PROPOSAL FOR INITIAL AMOUNT OF US FUND**

ESTIMATION OF NEEDS FOR THE US SCOPE

- In critical settlements with less then 10% penetration – number of households
- Potential customer needs / fixed telephony service
- 35% of observed settlements has a need for Internet access.
- Needs for BB access for public places (schools, offices...)

Methodology for Appropriate Technology Selection

- In deciding which technology is appropriate, or how to develop subsidize methodology based on techno-economic analysis, (US Fund or government contribution) the following criteria should be considered:
 - Density of population,
 - Distance to the closest network connection point (CNCP),
 - Geographic-topological characteristics of the region, and
 - Cost (infrastructure, equipment, operational expenses, etc.)
- In addition, it is possible to consider expected traffic per user, aggregated traffic for the whole region.
- **Regulatory approach-technology neutral**

Available Wireless Technologies for Universal Service Access

- Mobile
 - Cellular 2nd generation
 - IMT-2000 (WCDMA, CDMA AND WiMAX in 2,5GHz)
 - Satellite
- Fixed - FWA
 - CDMA
 - WiMAX
 - WLAN
 - Satellite
 - Digital broadcast

Mobile Cellular 2G/3G Networks in US policy

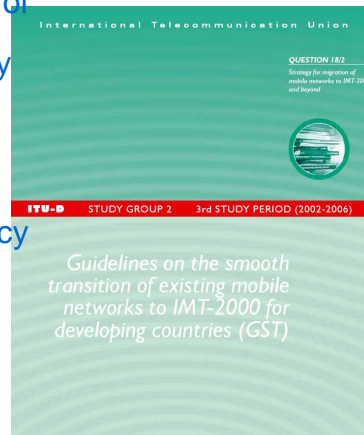
- List of critical settlements
 - Identified settlements without fixed phone.
 - Identified settlements with at least one 2G/3G network
 - Identified settlements with two or more 2G/3G networks
- Example –US project in Serbia
 - Many of settlements have coverage of at least one GSM network
 - Most of settlements have coverage of two GSM networks
 - In summary:
 - 75 % of settlements have mobile signal
 - 15% of settlements have no mobile signal
 - 10% of settlements have partial signal
 - Basic set of Universal services can be resolved by 2G
 - Incumbent operator installed CDMA as FWA
- Open questions: Tariff policy and **Broadband services in case of 2G usage**

US OPERATORS

- MOBILE OPERATOR AS US' OPERATOR
 - BB services using GPRS, EDGE or HSPDA or WLAN for settlement
- FIXED OPERATOR AS US' OPERATOR
 - FTTx, FWA

ITU-D SG 2 QUESTION 18/2

- Guidelines for Smooth Transition of the Existing Mobile Networks to IMT-2000 (GST) was approved by ITU-D SG 2 meeting, September 2005.
- Special needs of developing countries:
 - Government development policy
 - Operator perspective
 - Regulator perspective
 - Consumer-user perspective
- Link: <http://www.itu.int/ITU-D/imt-2000/index.html>



ITU-D SG 1/QUESTION 7-2/1 “Regulatory policies on Universal Access to Broadband Services”

-Draft Guidelines for promoting universal access to broadband services (Sept. 2009)

5. Enhancing the access to broadband-enabled services and applications

- 5.1. Countries should adopt policies to increase access to broadband services based on their own market structure and to reflect diversity in culture, language and socio-economic interests.
- 5.2. The regulator should be active in creating and stimulating demand for broadband-enabled services in underserved areas.
- 5.3. The regulator can demonstrate to operators, through the funding of pilot projects, the viability of providing broadband services in unserved or underserved areas.
- 5.4. Governments and NRAs should design and promote programs that encourage public access to and the use of broadband services in schools, libraries and other community centres, by:
 - 5.4.1. Subsidizing bandwidth to support local capacity-building institutions, e.g., schools and broadband-enabled business incubators.
 - 5.4.2. Developing a full range of public access options, including the creation of public telecentres and multi-purpose community centers.
- 5.5. Local input (including the content useful for local populations) into projects increases their relevance and therefore their long-term sustainability (including financial sustainability). Promoting the development of local content over broadband is the key to creating a critical mass of users in the community.
- 5.6. Rural education and training programmes should be used to foster ICT take-up, illustrating how local people can benefit from ICTs and increasing their long-term financial sustainability.
- 5.7. Promoting affordable ICT equipment could also include national manufacturing of ICT equipment, reducing the costs related to customs tariffs and duties, as well as end-user loans due to more affordable ICT equipment, and at the same time strengthening home-based industry.

CONCLUSION

- Roll-out of higher capacity networks in urban areas could increase asymmetries with rural and remote areas
- The realization of the NGN potential may be limited to certain geographic areas or better income groups,
- Universal access policy should envisaged broadband access
- Promoting affordable ICT equipment
- Local input (including the content useful for local populations)
- Universal access public policies must be oriented towards the delivery of high-speed networks



**THANK YOU FOR
YOUR ATTENTION !**

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