



# **UNIVERSAL SERVICE WIRELESS BROADBAND POLICY**

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## **OUTLINES**

- US as a part of overall telecom development policy
- Methodology for creation of US broadband policy
- The role of wireless technologies for implementation of broadband US policy

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# 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.

# BASIC REFERENCES

- 
- TELECOM ACT
  - STRATEGY FOR TELECOM SECTOR DEVELOPMENT
  - STRATEGY FOR INFORMATION SOCIETY DEVELOPMENT
  - EU DIRECTIVES

# METODOLOGY FOR CREATION OF US POLICY

- **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**
- **Recommendations for US implementation**
- **Proposal for scope and content of US**
- **Public discussion**
- **US implementation**

## PROJECT CONTENTS

1. **INTRODUCTION**
2. **PRESENT SITUATION – ANALISYS**
3. **RESEARCH IN THE FIELD**
4. **RESULTS**
5. **TECHNO-ECONOMICAL ANALISYS OF  
DIFFERENT TECHNOLOGY  
IMPLEMENTATION FOR US FUND  
CREATION**
6. **RECOMMENDATIONS**

# OVERVIEW OF THE PRESENT SITUATION

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

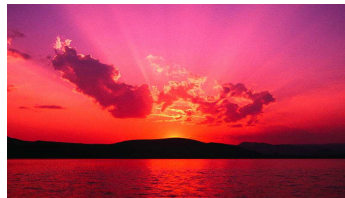
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# PRESENT SITUATION

- DEFINITION OF THE MAIN DATA 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



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## THE MAIN DATABASE: SETTLEMENTS

- For each settlement:
  - Number of fixed telephone subscribers
  - Inhabitants index 2002/1991
  - Mobile signal coverage for:
    - settlements with 0%, 4% and 10% penetration
  - Internet access

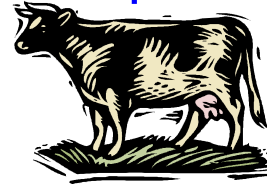
## DATABASE

- Locations without telecom services (0% penetration)
- Locations with low penetration (less than 4% and less than 10%)
- Identify areas which lack mobile signal
- LIST OF CRITICAL SETTLEMENTS

## Criteria for definition of critical settlements for US- example

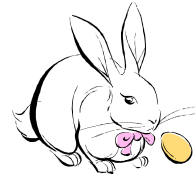
- **Basic :**

- + 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 of the list of critical settlements for US

- Number of inhabitants
- Potential touristy 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**



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# RESEARCH IN 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**

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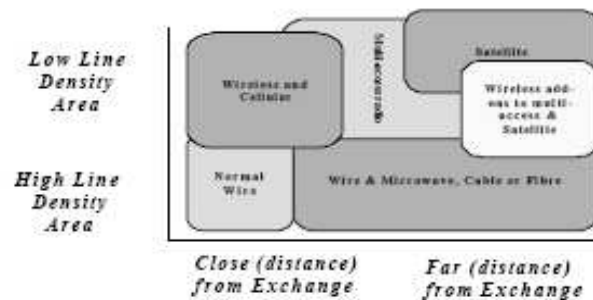
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## EVALUATION OF POSSIBLE SCENARIOS BY REGION / MUNICIPALITIES

-PROPOSED MODEL FOR TECHNO-ECONOMIC ANALYSIS-  
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## Methodology for Appropriate Technology Selection

- In deciding which technology is appropriate 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 factors, etc.

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# Wireless Technologies for Rural Areas

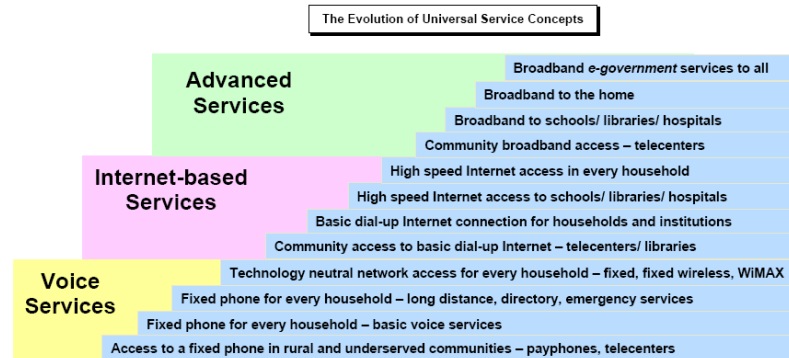
- Mobile services
  - Cellular 2<sup>nd</sup> generation
  - IMT-2000 (WCDA, CDMA AND WiMAX in 2,5GHz)
  - Satellite
- Fixed services
  - WiMAX
  - WLAN
  - Cable
  - Satellite
  - Digital broadcast

## Cellular 2G Networks and Rural Areas –Case of Serbia–

- Identified settlements without fixed phone.
- Incumbent operator installed CDMA as FWA
- 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 GSM
- Open questions: Tariff policy and **Broadband services**

# BB in definition of Universal Service

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



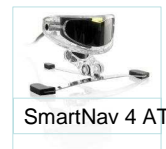
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## THE ROLE OF BB SERVICES IN RURAL AREAS

- ACCESS TO INTERNET
- EMPOWER USERS
- SCHOOLS
- OFFER CHANCE FOR HANDICAP PEOPLE AND SOCIAL MARGINALIZED GROUPS INCLUSIONS IN SOCIETY



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## 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 research was commissioned by Alcatel Lucent and carried out by in cooperation with market research firms a recession by comparing the relative value of a wide variety of specific fee-based services.

- 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 per cent 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. \*

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

## American Recovery and Reinvestment Bill, 2009

- 6 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

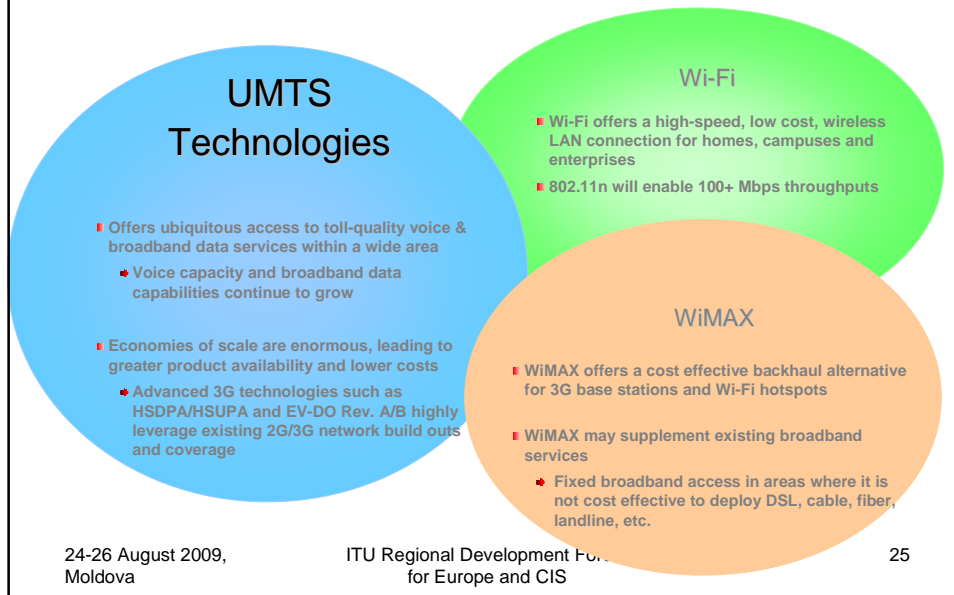
## WIRELESS BB FOR US

- MOBILE OPERATOR AS US' OPERATOR
  - BB services using GPRS, EDGE or HSPDA or WLAN for settlement and interconnects it with GSM backhole
- FIXED OPERATOR AS US'A
  - FWA

## Spain:

- 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%

## Advantages of IMT-2000 – UMTS, Wi-Fi and WiMAX - as US solutions



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## 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>



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