

UNIVERSAL SERVICE WIRELESS BROADBAND POLICY IN SERBIA

Prof.dr Nataša Gospić, Vice rapporteur Q 18-1/2
dr Dragan Bogojević, Alcatel Belgrade
mr Divna Vučković, Ericsson, Serbia

BASIC REFERENCES

- TELECOM ACT
- STRATEGY FOR TELECOM SECTOR DEVELOPMENT 2006-2010
- STRATEGY FOR INFORMATION SOCIETY IN SERBIA
- EU DIRECTIVES

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Telecom Act -Legal provisions

- *Universal service*” means the set of telecommunications services of specified quality and scope which shall be available to all users of the public telecommunication network in the Republic of Serbia, at reasonable prices;
- The Ministry responsibility is to define the list of universal services to be provided by the operators of public fixed telecommunications networks, based on the proposal made by the Agency;
- The Agency shall designate the telecommunications operator of a public telecommunications network that shall be responsible for the provision of universal services.

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Initial scope of universal service

- The initial scope of universal service must include the following:
 - 1.access to a public fixed telephone service, including the service of data transmission using voice telephony which enables quality access to the Internet;
 - 2. special measures to ensure equivalent access to the public voice service for the disabled and socially disadvantaged users;
 - 3. free access to emergency services;
 - 4. public pay phone service; and
 - 5. access to telephone operator and directory services.
- **NO BROADBAND SERVICES INCLUDED**
- **HOWEVER, INFORMATION SOCIETY STRATEGY CHALLENGING BB ACCESS FOR ALL SCHOOLS**

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US IN STRATEGY FOR TELECOM DEVELOPMENT

- ✓ Goal: Establishing of the fund for universal service cost recovery and ensuring availability of the universal service;
- ✓ In order to stimulate competition, fulfill universal service obligation and apply technologies enabling fast building of access networks and primarily broadband access, the Ministry will adopt assignment for fixed wireless access.

✓ 3,5GHz

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3,5 GHz

- ✓ **REGULATORY AGENCY FOR TELECOMMUNICATIONS - RATEL**
- ✓ **Proposals of assignment plans for 3,5 GHz frequency band and divide the territory of the Republic of Serbia into areas, i.e. towns, applying the criteria of attractiveness for foreign investors and technical optimality. Allocation of radio-frequency bands will be carried out in accordance with the Law, through a public tender procedure for a fixed telecommunications network license.**
- ✓ **Long-term user protection, regulatory obligations and limits, numbering availability, promotion of market competition, amount of initial investments, technical and economic feasibility and, in particular, to efficient radio-frequency usage.**
- ✓ **In case there is a need, propose to the Ministry to enable license issuance for operation in other frequency bands as well for needs of building of networks, which include fixed wireless access.**
- ✓ **With the development of the technologies enabling partial or complete mobility in the frequency bands allocated to fixed wireless access.**

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CREATION OF US PROJECT

- In order to fulfill the obligation of introducing the universal service RATEL needs to:
 - Make a detailed overview of the situation of telecom infrastructure and telecom service provisioning in the whole territory of the Republic of Serbia, with proposal for US solutions
- PROJECT STARTED IN JULY 2007 AND IS EXECUTED BY TRANSPORT AND TRAFFIC FACULTY, UNIVERSITY BELGRADE

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PROJECT CONTENTS

1. INTRODUCTION
2. PRESENT SITUATION – ANALISYS (I PHASE)
3. RESEARCH IN FIELDS (II PHASE)
4. RESULTS AND RECOMMENDATIONS

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I PHASE

- DEFINITION OF THE MAIN DATA 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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I PHASE

- Analysis on US level in 24 region and city of Belgrade
- Municipality statistics
 - Existing fixed telephony services
 - Mobile signal coverage
 - Internet
 - Public pay phones
 - Social marginalized categories
 - Number of handicap persons

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Project base: Serbian Regional and Municipality Organization



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Project: Task 1: Databases creation

Regional and municipality organization

- It was observed territory
of Serbia without K&M**
- **7.498.001** inhabitants,
 - **2.521.190** households
 - **4.715** settlements



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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

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Extract from Settlements Statistics, based on data from 2002 and 2006

Region Municipality Settlement	Number of inhabitants	Index. 2002/1991	Households	fixed tel	%MTL/100 inhabit
Republic of Serbia	7498001	99,0	2521190	2410060	32.1%
Central Serbia	5466009	97,5	1811233	1794499	32.8%
Vojvodina	2031992	103,1	709957	615561	30.3%
City of Belgrade	1576124	101,5	567325	636414	40.4%
Barajevo	24641	118,2	8254	9772	39.7%
Arnajevo	853	94,8	276	231	27.1%
Barajevo	8325	136,2	2789	3533	42.4%
Bacevac	1624	136,4	561	820	50.5%
Beljina	810	96,7	303	247	30.5%
Bozdarevac	1218	76,1	382	484	39.7%

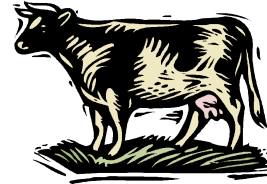
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Criteria for definition of critical settlements for US

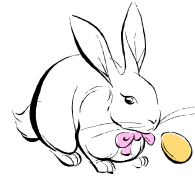
- **Basic:**

- + 20 households and/or
- + 50 inhabitants



- **Additional:**

- no mobile signal - critical ²
- inhabitant's index (2002/1991)
- school, post office, ambulance, on the border to EU.....



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Structuring of critical settlements for US

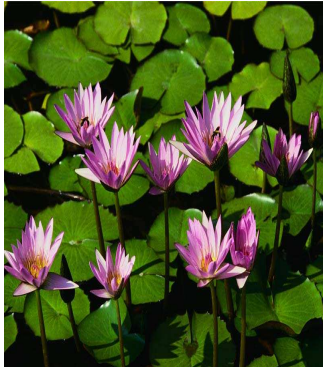
- Number of inhabitants
- Potential touristy locations
- Natural resources
- Requirements for BB access



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MARKET ANALISYS



- LESS DIFFERENTIATIONS
- EXAMPLE:
 - Business professional
 - SME
 - Private
 - Young generation???
 - Solutions for universal access
 - Roamers!!!!

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Tariff packages

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



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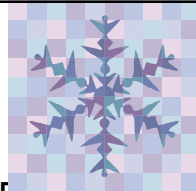
Identification of US settlements - example



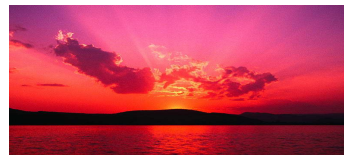
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II PHASE



- RESEARCH IN FIELD
- COMPARISON OF REAL SITUATION TO DATA OF I PHASE
- FINAL RESULTS
- EVALUATION OF POSSIBLE SCENARIOS
 - ELEMENTS FOR TECHNO-ECONOMIC ANALYSIS
- RECOMMENDATIONS
- PROPOSAL FOR INITIAL US FUND

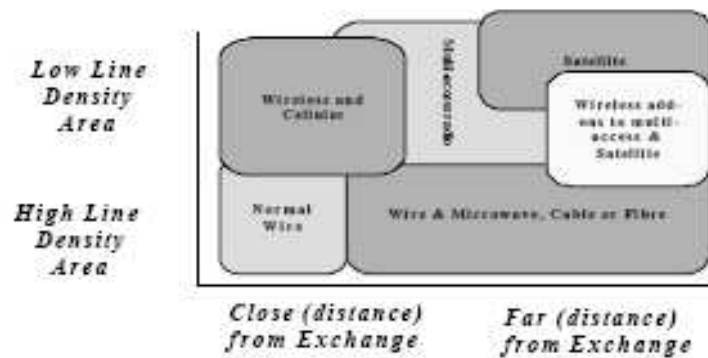


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EVALUATION OF POSSIBLE SCENARIOS BY REGION / MUNICIPALITIES

-PROPOSED MODEL FOR TECHNO-ECONOMIC ANALYSIS-



Example: Rural Revenue Model for IMT-2000

- Path loss: 141 dB => 6 km cell radius
- Site Area – 3 (6) sector site: 70 (93) km²; 50 inhabitants/km²
- 3500 inhabitants within site coverage
- Handset services 6 EUR/month/user =>63000 EUR/year
 - 50% market share 50% penetration
 - 875 subscribers
- Fixed wireless data: 25 EUR/month/user => 78000 EUR/year
 - 15% penetration 50% market share:
 - 260 users (2 Mbps/50:1/10BH)
- Total annual site revenue: 141000 EUR/year
- Revenue per km²: 2015 EUR/km²

Example: Site TCO and Profitability

- CAPEX: 200 000 EUR
- Depreciation 5 year: 40 000 EUR
- OPEX/year: 40 000 EUR
- TCO/year: 80 000 EUR
- TCO/km²: 1140 EUR/km²
- Revenue per km² (3 sector): 2015 EUR/km²
- Rural 3G site gross margin: $(2015-1140)/2015 = 43\%$

TCO – Total Cost of Ownership

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CONCLUSION 1

- STRATEGY OBJECTIVES:
- Growth of the Internet penetration rate to over 30%;
- Increase of broadband service users penetration;
- In order to provide broadband network connection to as many residents as possible at affordable price, relevant state authorities need to:
 - subsidize building of broadband networks in geographic areas where such building is not profitable for commercial providers;
 - provide public Internet access terminals in public places (schools, public institutions, libraries, post offices, train and bus stations, health centers, community centers, centers for agricultural products, etc.);
 - prevent attempts of competition limitation and market monopolization;

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Instead of conclusion 2

**WE ARE FULLY OPEN FOR
USEFUL PROPOSALS AND
RECOMMENDATIONS!!!!**

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СПАСИБО!

**THANK YOU FOR YOUR
ATTENTION !**

n.gospic@sf.bg.ac.yu
d.bogojevic@sf.bg.ac.yu
divna.vuckovic@sf.bg.ac.yu