

Universal Service for Socially Excluded Users

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Abstract — This paper is about defining special measures within a universal service for potential socially excluded users, as a part of Project on US in Serbia. In the centre of research are people with disabilities, low income households, and welfare institutions in the Republic of Serbia. After analyzing regulations and statistical data, proposals for telecommunications services for these users are analyzed together with the costs of their realizations. At the end preliminary results of research are discussed.

Keywords special measures, socially excluded users, universal service.

I. INTRODUCTION

DIRECTIVE 2002/22EC as an indispensable element of the Universal Service (US), includes certain measures intended to provide people with disabilities with a viable access to telecommunications services. These services should be equivalent with those provided for all users.

As cited in Telecommunications Act of the Republic of Serbia, (paragraph 49), “basic scope of Universal service must include special measures that provide equal access to public voice service for people with disabilities and other categories of underprivileged people”.

Key issues for defining a model of special measures within US for socially excluded users in Serbia are:

- scope and content of special measures (type of services and relevant measures);
- social categories (population groups) who can claim rights to benefits defined by special measures;
- possibility of US realization along with estimation of assets needed from US Fund;

As a framework for a detailed analysis we can use the idea of universal service and universal access, which is widely seen as having three essential components: [1]

1. *Availability* – service is available within analyzed geographical area.
2. *Accessibility* – services are accessible to people with different psychophysical abilities.
3. *Affordability* – according to ITU, services price

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must be affordable to majority of users.

The availability component does not require to be analyzed separately since one of the US key features is providing the basic scope of the service throughout the territory that the US has been planned for. Accessibility and affordability component, in this case imply, respectively:

- users with disabilities can readily avail themselves of the necessary equipment (special equipment, devices, etc.) that meets their needs and suits their abilities;
- people with disabilities and low income households are to be entitled to special tariffs.

Given remarks can be used as a framework for special measures within Universal service. Further analysis implies analyzing social categories (population groups) that can enjoy rights to special measures (number and needs) along with different sets of services (fixed telephony and/or mobile services and/or Internet access) and following costs (according to funds designated to US).

II. LEGISLATION AND STATISTICS CONCERNING PEOPLE WITH SPECIAL NEEDS IN SERBIA

It is very difficult to establish the actual number of the socially excluded users in Serbia, especially the number of those with disabilities, since there are no unique definitions and comprehensive records of the relevant statistics. Different institutions (usually at municipality level) have inconsistent statistical records with lack of methodology harmonization and coordination at country level. Focus is on people with disabilities and other welfare beneficiaries. Referent Legislative (Acts in the field of welfare) contain archaic definitions, inconsistent criteria and practice appliance. Although in 2006, *Act of Preventing Discrimination among People with Disabilities* was adopted, national legislative still estimates the number and needs of these people according to medical rather than social abilities.

A. Statistical records of people with disabilities in Serbia

Besides the lack of clear definitions and comprehensive statistical records, there are no surveys which can indicate actual needs for telecommunication services of people with disabilities (that is also a problem of other public services). As cited in the latest Living Life Standard Survey (LLS was conducted by Statistical Office of the Republic of Serbia in 2008): “There are no official records of overall number of these people, invalidity types and other relevant designations and data which can help to indicate life standard of these people and define policies

and measures to improve their life quality". Since there are no comprehensive statistical records of these people, the number of potential users of special measures within US must be estimated based on a few different sources like: Institution for Pension and Invalidity Insurance (375000 users estimated); National Employment Office (23000); Welfare centers (55000); Ministry of Labor and Social Policy (25000+600), Special schools (7560+8099+1374 children). According to given data, the overall number of people with disability in the Republic of Serbia would total 498103 (with caution that some of data might be duplicated). This number can be rounded at 500000 since records of younger juveniles have not been taken into calculation. [2] However, according to LLS conducted in 2003, 5.12% of population declared as people with disabilities which makes about 382398 people. However, according to Reference [3] between 700000 and 800000 people with disabilities live in Serbia.

In the matter of potential business users the following institutions can be found in existing statistical records:

- Welfare Centers – 146 offices;
- Children institutions – 27 institutions;
- Homes for the aged and pensioned – 38 homes;
- Institutions for accommodation of disabled people (mentally, psychophysically, etc) – 16 institutions;
- Associations and clubs for people with disabilities, special schools and regular schools with special departments – about 260.

Although people with disabilities need to be analyzed additionally since they have special needs in terms of infrastructure and equipment (accessibility issue), they are not the only category we have analyzed. In terms of poverty, categories that need to be taken into consideration are: households whose aggregate monthly income does not exceed the poverty threshold (55000 households estimated); low income pensioners (about 40000); low income parents who are welfare beneficiaries (246428). [5]

In general we can conclude that given data can be taken into calculation in two ways. The first one is according to the overall number of socially excluded users and the other is according to registered welfare users (especially in the case of people with disabilities). This affects the estimation of potential users in such a way that further analyses can be addressed in two directions: according to the overall number or according to the defined categories of socially excluded users. Because of that we have analyzed existing public utilities with beneficiaries.

B. Existing services with beneficiaries in Serbia and neighborhood countries

Some of existing services with beneficiaries in Serbia are:

- *Electricity*: The right to a 30% discount for consumed electricity (up to 450kwh) have households whose aggregate monthly income does not exceed the poverty threshold. These households are appointed by Welfare offices. A monthly

discount maximum is $0.3 \cdot (1106.35 + 41.41) = 474.14$ Serbian dinars (559.48 including VAT). That is about €5.10 (€6.01 including VAT). This and other calculations in the paper were made according to the exchange rate given by National Bank of Serbia on July 24, 2009.

- *Television*: no monthly fee for people with disabilities (people with total invalidity; blind, deaf people and disabled people who are beneficiaries). The amount is 350 Serbian dinars or about €3.76 per month.
- *Fixed telephony*: 50% discount of monthly fee and 300 impulses free of charge for households where at least one member is a person with disability. The amount is $0.5 \cdot 195 + 300 \cdot 0.4043 = 218.79$ Serbian dinars (258.17 including VAT) or about €2.35 (€2.77 including VAT).
- *Mobile services*: (Operators "MTS" and "Telenor" have special tariffs for people with disability). Estimated monthly discounts including VAT (calculated with regard to the basic "Hello" tariff package) are: 377.6 Serbian dinars (about €4.05) for blind people, 837.8 Serbian dinars (about €9) for deaf people and for other people with disabilities 218.3 Serbian dinars (about €2.35).

In Hungary low income users get €4 per month for their fixed telephony costs.

In Bosnia and Herzegovina (operator "Telekom Srpske") there is a "social package" consisting of 50% discount of monthly fee and 300 impulses free of charge. Also there are population groups which can get a telephone line free of charge. [4]

In Bulgaria there are different tariff packages of fixed telephony for people with disability and low income users:

- Package "Usage of telephone services for residential subscribers – disabled people, for one definite telephone line": 120 minutes local calls (60 impulses) included;
- "Usage of telephone services for social and health institutions, for one fixed telephone line": 600 minutes local calls (300 impulses) included;

The existing public utilities in Serbia (electricity, television, etc.) require that the population groups claiming rights to these benefits should be precisely determined within the framework of the relevant legislation (for example, the 2005 Radio Diffusion Act, paragraph 82). However, if one population group claims rights to benefits for one set of public services it doesn't mean that they can claim rights to be beneficiaries within other set of services. Population groups that are most often included as beneficiaries consist mainly of people with total invalidity; blind and deaf people; disabled people that are welfare beneficiaries; families with disabled children and households whose aggregate monthly income does not exceed the poverty threshold.

III. PROPOSAL OF SPECIAL MEASURES WITHIN UNIVERSAL SERVICE FOR SOCIALLY EXCLUDED USERS

Based on the idea universal service/universal access along with national characteristics and case studies, in this

part of paper we propose one model of special measures for socially excluded users.

A. Accessibility provision

In order to secure the availability of services incorporating the accessibility component some standards for telecommunications equipment and phone booths need to be defined.

Services regarding public phone booth system are a part of Universal Service measures. As cited in [6] accessibility component is to be reflected in:

- *Payphone design features* - for example, deaf people have noted the need for volume control as well as noise canceling ability;
- *Payphone placement* - for example, blind people need to locate a payphone at a minimum distance out from the building line, so as not to obstruct blind people who walk along the edge of buildings for guidance;
- *Payphone installation* - for example, people with physical disabilities need to have the operable parts installed at a height that people in wheelchairs can reach;
- *Payphone surrounds* - for example, tactile tiles on the pavement to alert blind people using white canes to the presence of a payphone

A special type of phone booths is a *teletypewrite* payphone designed to meet the needs of people with hearing problems. These payphones also need to have accessibility characteristics as cited for custom phone booths.

Procedures of obtaining special telecommunications equipment for the disabled need to be defined in the special features of the US whereas one approach is that the US operator has to take on the obligation of devising special modes of payment in the purchase or renting of the equipment.

There are two possible approaches for defining standards for a public phone booth system and specialized telecommunications equipment:

1. adopting existing standards (from USA, Great Britain, etc)
2. defining national standards represented by NRA and based on survey or recommendations of organizations dealing with people with disabilities (example is US operator "Telstra" from Australia).

Additionally, standards can be set in the domain of Internet access through the implementation of WAI guidelines (*Web Accessibility Initiative* works with organizations around the world to develop strategies, guidelines, and resources to help make the Web accessible to people with disabilities).

B. Affordability provision – special tariff schemes

In this part of research we have analyzed different models of tariff packages in the domain of fixed telephony, mobile services and Internet access. We have analyzed both residential (different socially excluded population groups) and business users (welfare institutions). The goal has been to estimate the financial

support needed from US Fund.

As cited above, national statistical records show no accurate number of potential users of special tariff packages. For that reason our estimation results are given in a range of values. In the case of potential residential users the number is in the range 60000 – 600000, depending on population groups taken into calculation. In the case of potential business users, the range is 16-487 institutions and organizations.

Based on national and foreign case studies (related to telecommunications and other services) we recommend that the basic scope of US's special measures relates to the following population groups: people with total invalidity; blind and deaf people; people with invalidity - welfare beneficiaries; families with disabled children and households whose aggregate monthly income does not exceed the poverty threshold. All these potential users total 170000. The optimal number of the institutions included would be 43 and it would comprise institutions for the mentally retarded, disabled people, people with mental disorders and children's institutions.

For these population groups we have analyzed services with special tariffs and related expenses. In the case of broadband internet access potential users can be estimated according to broadband penetration (7.78% according to Serbian NRA – RATEL) [7] or according to National Statistical Office (15.5% of households had a BB connection in 2008). Since in our calculations we have used a rough estimate "one socially excluded user – one household" we have decided to go with National Statistical Office data. Preliminary results of calculations are given in Table 1. All costs are without VAT.

TABLE 1: ANNUAL EXPENSES FOR SPECIAL TARIFFS

	Residential <i>(170000 users)</i>	Business <i>(43 institutions)</i>
<i>Fixed telephony</i>	50% of monthly fee and 300 impulses	50% of monthly fee and 600 impulses
	€4794000	2208.48 €
<i>Mobile services</i>	Special tariffs for people with disabilities (<i>about 122000</i>)	
	€5068267.78	
<i>Broadband access</i>	50% of monthly fee ADSL 1024/128kb/s (<i>about 26350 users</i>)	100% of monthly fee for ADSL 1024/128kb/s
	€3076713.95	€10041.65
Total	€12938981.73	€12250.13

The highest annual expenses are for mobile services. These expenses make almost 50% of total residential expenses and they do not cover low income households as beneficiaries. Therefore, it should be allocated solely to the territory on which there is no available fixed telephony. In that case, total annual expense would

amount to €7.882 million. In Australia, for example, every year three million dollars worth of funds is assigned to people with disabilities, no subsidy included. In 2004, Hungary allocated €12 million for the benefit of the underprivileged classes of society. We have also analyzed what percent of US Fund do total annual expenses make. We have estimated €14.7 million worth of funds designated for the US according to the recommendations from the World Bank discussion paper [7, p.92] and Serbian NRA figures. The calculated expenses would constitute 53.62% of the estimated US Fund. Romania's Regulatory Agency (ANRC) has invested 35% of the US funds in the subsidies to households living below the poverty threshold so they could cover the costs of fixed telephony [1, p.64].

IV. CONCLUSION

In a conclusion section we would like to point out some of data that can indirectly influence the effective application of recommended special measures within US for socially excluded users.

Only 14.2% of households whose aggregate monthly income does not exceed the poverty threshold have applied for welfare and only 61% have received it. Over 50% of people with disabilities are older than 60 years. Hungary has allocated €12 million for the benefit of the underprivileged classes of society but spent only €504000. Only 11% of households with people with disabilities in Poland use specialized telecommunications equipment, and more than 50% are unsatisfied because there are no special tariff schemes.

The fact is that there is no public sector where every socially excluded user claims his rights. There are many reasons for this, procedures are too complicated, they are not well informed or they don't have the ability to apply as in case of illiteracy, etc.

Special measures within Universal Service for socially excluded users are the matter of laws and national telecommunications policy, but if they are treated only as a regulatory pressure they can result with solely formal and ineffective solutions. Therefore, finally defined, adopted and applied special measures for socially excluded users can be really effective only if established through a systematical set of studies.

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