Forming Packages of the Services as a Way for Keeping Existing Users and for Increasing ARPU

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Abstract—One company can sells two or more separate products in a package for a single price. It is called „bundling". In this paper is described bundling in telecommunications area, that is, forming packages of the services, like triple play and quadruple play as a way which is used in Bosnia and Herzegovina by all operators with basic goal to keep existing users and increases average revenue per user.

Keywords-component; triple play, quadruple play

I. INTRODUCTION

Today, in competitive environment, operators in telecommunication area need to find a new form of value creation. One of the ways is finding new services. But, it requires continuous investment in infrastructure and it is expensive. Each operator is trying as much as possible to maintain the current level of investment and extract as higher revenues from existing state of its telecommunications network.

From the operator point of view, revenue from services like fixed telephony is constantly decreasing, and forming packages with more promising services (like IPTV, VoD, broadband access to Internet) with less promising (like fixed telephony) is one way for increasing average revenue per user (ARPU) and way for keeping existing subscribers. This is called bundling.

There are two types of bundling: pure bundling and mixed bundling, [1].

1. "Pure bundling" is case in which operator offers to subscriber (end users) package of services at a single price and in that case subscribers haven't impact on the package's performance.
2. "Mixed bundling" is case in which subscribers may to choose some individual service from package (collection of services) and subscribers have possibility to choose some performances of the services, like data flow, prices and so on.

Here are two basic reasons [1] why a subscriber may choose to purchase a package of the service (bundle):

1. Operator may decide to offer only bundling and in this case it is only solution for the subscribers.
2. Bundling is cost saving for subscribers, because it is cheaper to buy packet of the service than to buy each service individually.

II. ICT INFRASTRUCTURE IN BiH

In accordance by International Telecommunications Union (ITU), key ICT indicators for developed and developing countries are penetration rates for fixed, mobile and Internet subscribers, [2].

Data presented in this paper is taken from the Annual reports of Communication Regulatory Agency (CRA) in BiH and ITU. CRA collects data from the all operators in BiH and performs their processing and analysis, [3]. There are three operators with significant market power (based on „Official Gazette of BiH", No 73/12 from September 18th 2012).

1. BH Telecom Sarajevo,
2. M:TEL, Banja Luka
3. HT Eronet, Mostar.

These operators have the license for public fixed and mobile telephone services that enable them to provide fixed and mobile telephony services in the whole territory of Bosnia and Herzegovina.
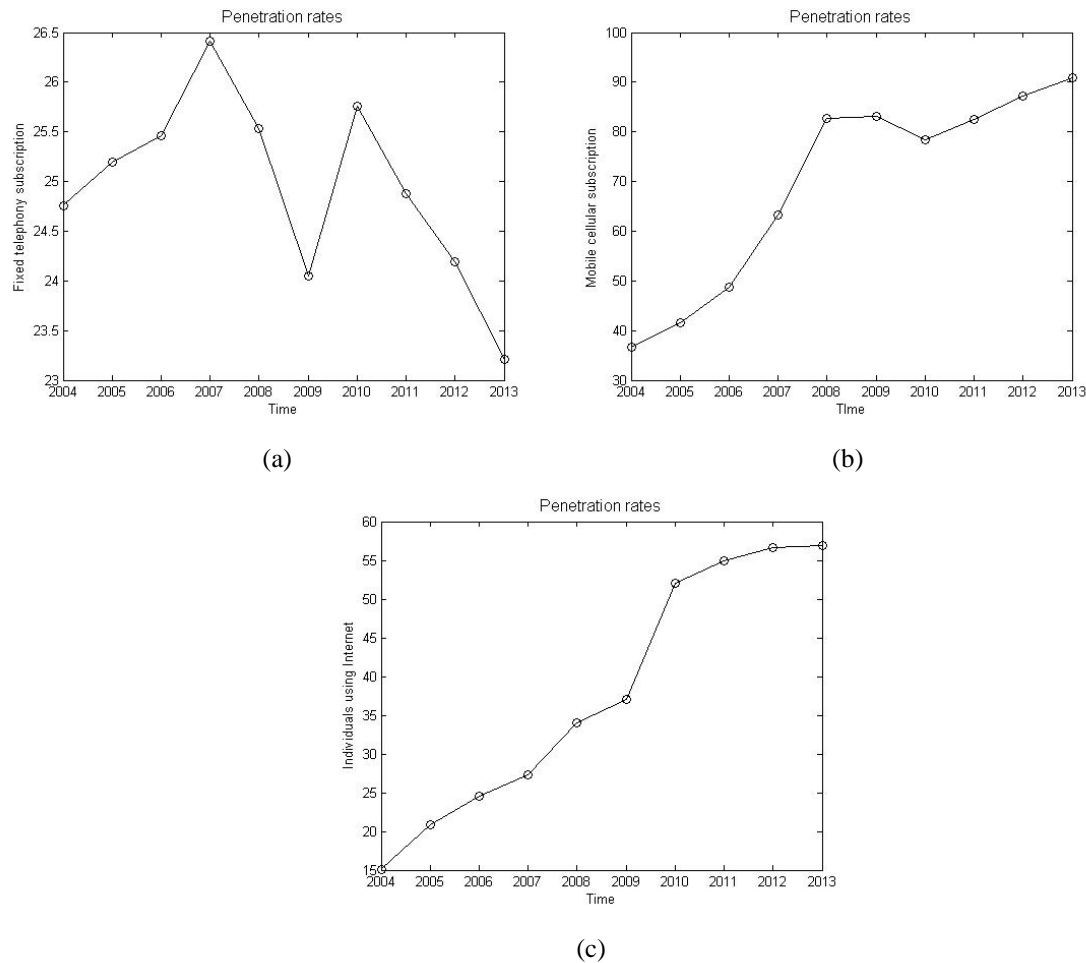
(a)

(b)

(c)

Figure 1: Comparisons between (a): Penetration rates for fixed telephone subscription; 1(b): Penetration rates for mobile cellular subscription; 1(c): Penetration rates for Individuals using the Internet

From the figure 1(a) it can be concluded that number of fixed telephone subscription is constantly declining. It is global trend around the world. But, from that figure it can be seen some peaks. Reason for that is that operators in their offers are tied service of fixed telephony subscription with service of broadband access to Internet (xDSL access) and IPTV (in one package). From the 2009 year, this is not case. That means that user mustn't be subscriber of fixed telephony as condition to be subscriber of other services.

From the figure 1(b) and 1(c) it is evident that the number of mobile and Internet subscribers continues to increase and this fact is basic to development operator's strategy in the future.
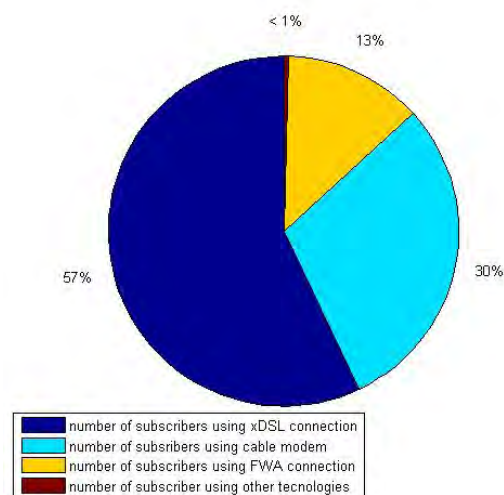

Figure 2: Structure broadband connections

The broadband services from year to year continue to increase, so that the number of broadband subscribers has reached 99.38% of the total number of Internet subscribers (in fixed environment).

Penetration of broadband subscribers in relation to the total population of BiH was 13.42%. Within the structure of broadband connections (in fixed networks), xDSL access still leads with 57.14% out of the total number of broadband connections, with the rise of cable Internet access and FWA connections (Fixed Wireless Connection) compared to the previous year (Fig. 2), [3].

UMTS (Universal Mobile Telecommunication System) is the third generation (3G) mobile telecommunications system that enables the provision of broadband services in mobile communications.

UMTS enables mobile communication with theoretical data transfer speeds up to 7.2 Mbps. It is designed to enable mobile users to transfer image, graphic, video and other multimedia content via computer and telephone terminal devices.

HSPA (High-Speed Packet Access) is a collection of mobile telephony protocols that extend and enhance existing UMTS protocols.

Access to Internet via 3G can be enabled on two ways:

- via a mobile phone that supports 3G; that makes much faster access to (compared to GPRS/EDGE) content on the Internet.
- via computers and PCMCIA card/USB modem/mobile phone that supports 3G; computer and mobile phone must be connected via the appropriate cable, infrared port (IrDA), or Bluetooth.

Coverage of the population with 3G services for all operators in BiH is:

1. for BH Telecom, 87,05%
2. for M:TEL, 71,36%
3. for HT Eronet, 71,5%

The development of broadband Internet, together with the liberalization of the telecommunications market, influenced the offer service packages that simultaneously combined multiple telecommunications services:

1. Internet, fixed telephony and IPTV (triple play concept) or
2. Internet, fixed telephone, IPTV and mobile telephony (quadruple-play concept).

VoIP (Voice over IP) in form IP Centrex service is used too, but number of subscriber is very small and it is intended only to business consumers.
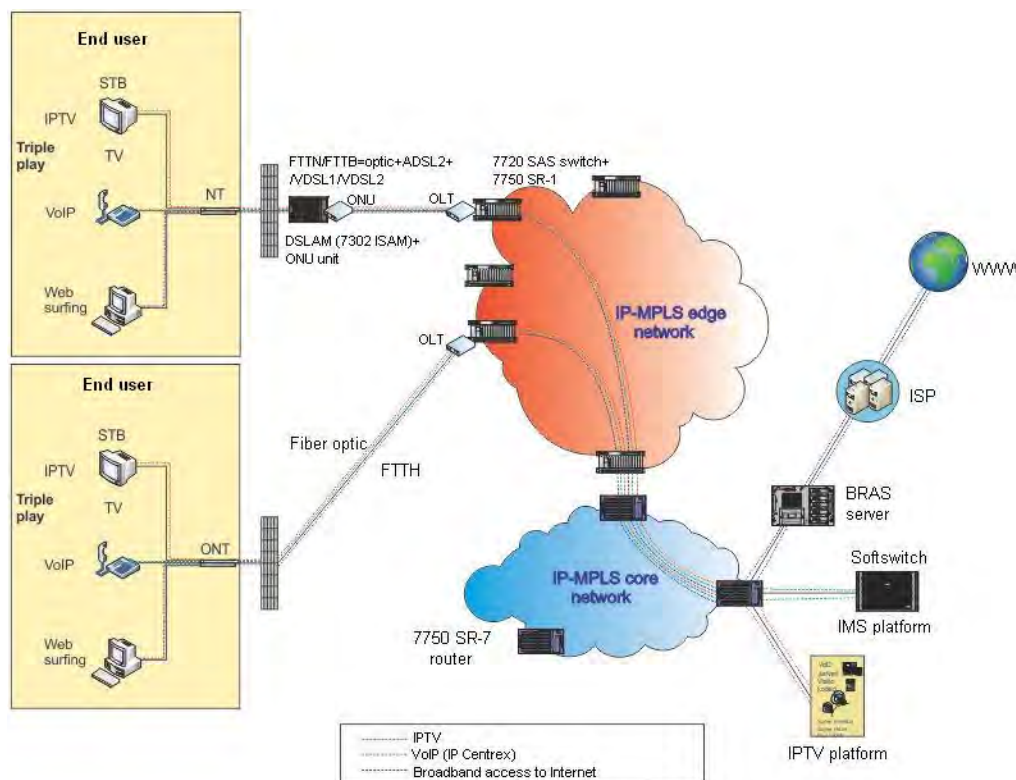

Figure 3: Network for realization triple play services (a case study of the M: TEL network)

This service packages increases requests for bandwidth in access and backbone network.

In access network can be used (Fig 3):

- ADSL, ADSL2, ADSL2+, VDSL, VDSL2,
- combination VDSL/VDSL2 technologies and optic
  - FTTN/FTTB (Fiber to the Node/Building)
- FTTH (Fiber to the Home)

  WDM/DWDM technology (Wavelength Division Multiplexing/Dense WDM) is used in backbone network with very high capacity, [4-6].

III.   TRIPLE PLAY AND QUADRUPLE PLAY PACKAGE

In Table 1 and Table 2 is used data from Annual Report of the CRA for 2013 year [3]. In Table 1 is given number of subscribers per packages of services in BiH for all operators. In Table 2 is shown number of subscribers per collections of services in BiH for all operators.

Table 1: Number of users per package of the services in BiH (for all operators)

Double play package	2011	2012	2013
IPTV and Internet	45.494	36.59	61.204
Fixed telephony and Internet	17.523	22.985	25.511
Fixed telephony and IPTV	25.823	42.555	58.375
Triple play package			
Fixed telephony, Internet and IPTV	3094	61.176	96.574
Quadruple play package			
Fixed telephony, Internet, IPTV and mobile telephony	864	999	3.052

Table 2: Number of subscribers per collections of services

Two services	2011	2012	2013
IPTV and Internet	42.844	77.789	68.371
Fixed telephony and IPTV	495	762	1.1281
Three services			
Fixed telephony, Internet and IPTV	160	142	207

Each of the three main operators in BiH have own packages of the services and price politics. In Table 3, Table 4 and Table 5 is shortly described their packages of the services, [7-9].

Table 3: Packages in M:TEL's network

PACKAGE	CONTENT OF THE PACKAGE
Duo fixed+Internet1	Free calls within M:TEL's fixed network; flat Internet 2048/192
Duo fixed+Internet2	Free calls within M:TEL's fixed network; flat Internet 4544/320
Duo fiksna+Internet3	Free calls within M:TEL's fixed network; flat Internet 10240/640
Duo IPTV+Fixed start	Free calls within M:TEL's fixed network; start IPTV package
Duo IPTV+Internet start	Start IPTV package+Flat Internet 2624/248
Trio start	Free calls within M:TEL's fixed network; start IPTV package; flat Internet 2624/248
Quadro1	Trio start+100 minute free calls within M:TEL mobile network+100SMS+500MB mobile Internet
Quadro2	Trio start+200 minute free calls within M:TEL mobile network+250SMS+500MB mobile Internet
Quadro3	Trio start+500 minute free calls within M:TEL mobile network+250SMS+1GB mobile Internet
Quadro4	Trio start+500 minute free calls within M:TEL mobile network+500SMS+2GB mobile Internet

Table 4: Package in HT Eronet's network

PACKAGE	CONTENT OF THE PACKAGE
Du01	Fixed telephony+Flat Internet 3072/320
Duo2	Fixed telephony+Flat Internet 38192/512
Duo3	Fixed telephony+Home:Tv
Duo Pro	Fixed telephony+ Flat Internet25000/2000
Trio	Duo3+Flat Internet 4096/320

Table 5: Packages in BH Telekom's network

PACKAGE	CONTENT OF THE PACKAGE
Moja TV BH	47 IPTV channel; 20 radio channel, timeshift TV, EPG; games
MojaTV Basic	140 IPTV channel;30 radio channel;timeshift TV; EPG; games
MojaTV Phone+	MojaTV Basic+Fixed telephony (Free calls within BH TEL's fixed network)
Moja TV Net	Moja TV Basic+Flat Internet 5000/512
MojaTV Net Speed	Moja TV Basic+Flat Internet 40000/1
MojaTV Full+	MojaTV Net+Fixed telephony
MojaTV Full+Speed	MojaTV Net Speed+Fixed telephony
Moja TV Premi	MojaTV Full+Mobile post-paid subscription+500 MB mobile Internet

It is obvious (from Table 3 and Table 4) that M:TEL and BH Telecom offer more or less the same content of the packages but with different data speed, different IPTV channels in their packages and in the both case with some free calls within their fixed and mobile network.

From tables above, it can be concluded that there is not real quadruple play in all operator's network because uniformed service delivery is a key requirement for quadruple play. This is not situation in BiH. Building network architecture for that is not trivial task. Today, it is considered that the introduction IP Multimedia Subsystem (IMS) is the best solution, [10-13].

Basic principles of the IMS architecture are set in Release 5 by 3GPP Standard Organization. IMS is originally developed only for mobile networks. In Release 6 and 7 is enabled networking with other wireless network, like WLAN (Wireless LAN) and WiMAX (Worldwide Interoperability for Microwave Access). Subscribers can access to IMS over fixed network (xDSL, Ethernet, cable network) or over the mobile network (W-CDMA, GPRS, GSM...) or wireless network (WLAN, WiMAX). Now, SW Release 5 is in the phase of the implementing in BiH.

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