STRATEGIC MANAGEMENT OF THE ROMANIAN TELECOMMUNICATION SERVICES

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ABSTRACT

Analysing the Gross domestic product in Romania, by category of resources, in 2016, the Information and communication industry generated 40,485 million lei (around 9 billion Euros) to the economy development, with a total number of employees of 168,000 people. Regarding the activities of telephony in Romania, there were a total number of 27 million connections in 2016 according to the National Authority for Management and Regulation in Communications, of which 4 million fixed connections and 23 million mobile telephony connections. The present paper analyzed the management activity in the Romanian telecommunication system, presenting vertical integration as a strategic management key and necessity to keep moving forward in this fast field. The research contents four case studies of vertical telecommunication services integration in Romania: Telekom Romania, Orange Romania, Vodafone Romania, Digi Romania. Also we examined the telecommunication companies' capabilities to undertake an innovation approach to customers. The financial performances shown that vertical integration strategies are the key for success. Combining voice services, both fixed and mobile phone with television and internet represents the future of telecommunication services nowadays and the providers are looking to be a step forward in delivering packages with all this services included.

KEYWORDS: *connection, integration, Internet, telecommunication.*

1. INTRODUCTION

Telecommunications are the transmission of signals or information electronically over long distances (Pierre, 1999). The telecommunication services include mobile and fixed telephony, radio, television and the Internet (Amin et al., 2012). Of all, the Internet had the largest increase in volume and revenue, subscriber number and spread (Yang & Ng, 2010).

Vertical integration involves extending the work area either forward or backward relative to current business on the production and sales chain.

Vertical integration, or expansion to activities previously performed by suppliers or customers, presupposes at least a theoretical increase in profitability, but it is not necessarily a safe recipe.

A significant result revealed by Lee et al. (1997) was that consumers are much better off if the telecommunications company is vertically integrated. Consumers are better off when the telecommunication service provider is vertically integrated (Vijayasarathy & Sabherwal, 1994; Mir & Dangerfield, 2013).

Taking into account the fact that vertical integration has advantages and risks, the option for this strategy must be based on the realistic evaluation of the chances of success according to the following criteria: the compatibility of such a strategic option with the company's mission and long-

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term objectives; the strengths and weaknesses of the firm, the extent to which they allow the implementation of the vertical integration strategy; the competitive strength gained by the firm in the industry by applying the strategy; (Segarra-Moliner & Moliner-Tena, 2016; Mahbob et al., 2013; Nakamura, 2013; Zanchettin & Mukherjee, 2017).

Vertical integration provides the manufacturer with access to the end consumer; we have as an example Telecom's acquisition by the Germanos distribution network.

Telecommunications is one of the most exciting sectors in the economy of a country, attracting the most investment from foreign businessmen (Vijayasarathy & Sabherwal, 1994).

In 2016, in Europe, Deutsche Telekom was the leader in the telecommunications services market with a total revenue of € 73.1 billion in 2016.

Vodafone is the second leading operator in Europe with a total of 19.7 million customers in the UK alone. Monthly usage of smartphones on Vodafone customers was of 1120 in megabytes in 2016.

There is an increase in mobile connections over the fixed ones, which fall rapidly: at the level of 2015, the rate of decrease of the fixed telephony lines was of 26.3%.

The communications area is divided into various service sub-groups: the fixed telephony market, the mobile phone market, Internet services, but the current market trend is to mix them to provide customers with the most complex and complete experience (Chentouf & Khoumsi 2013; Amin et al, 2012; Dagli & Jenkins, 2016; Battistella, 2014).

Nokia Finland was among the first companies to offer, test and launch data transmission via a GSM infrastructure, as well as the Wireless Internet concept. If we were to establish a single cause for which Finland has the world's most advanced voice/data/video infrastructure, that would be the fact that there has never been a monopoly over communications services and the cutting-edge technologies have always been introduced as a result of free competition (Shin et al., 2011).

The telecommunication industry in Romania represents an oligopoly market, with 4 major companies: Vodafone, Orange, Telekom and RCS & RDS.

The present paper analysed the management activity of the four telecommunication players on the Romanian market and proposed the after-sales services and the vertical integration as a necessity to keep moving forward.

2. THE STAGE OF KNOWLEDGE IN THE FIELD OF TELECOMMUNICATIONS SERVICES

Telecommunications have long been considered a natural monopoly: economic advantages as well as massive investments have made competition impossible. If we take into account that these "natural" monopolies were managed by companies 100% owned by the state, we still have a reason why they wanted to be kept, but they were not made at no cost. For example, in the early 1980s, the monopoly owned by the AT & T telecommunications operator "cost" Americans nearly a billion dollars a year (Chen & Yang, 2015).

The European Community has recommended the liberalization of the telecommunications market (networks and services) since 1 January 1988 (Chentouf & Khoumsi, 2013). Subsequently, under the insistence of the World Trade Organization (WTO), on February 15, 1997, some 68 states, including Romania, signed the agreement on the liberalization of telecommunications and finally on March 26, 1998, also under the insistence of the WTO, 36 countries, including Romania, sign an agreement to remove customs duties on information technology products (Hans van Kranenburg & Hagedoorn, 2008). These are computers, software, telecommunication equipment.

As global industry without global competitors is no longer possible, anticipating globalization or acting for its purpose, strategic alliances capable of providing global telecommunications services have emerged: AT & T, Concert, Global One (Cricelli et al., 2011; Schoder, 2000).

The liberalization of telecommunications in Romania began with the liberalization of services: competition was allowed between a number of services, some entirely new: data transmission, Internet, paging, cable television and, last but not least, mobile technology. In the case of phone services, Romtelecom lost its monopoly, which marked the growth and diversification of its services, the lower tariffs (in the first phase) and serious problems for the maintenance of the national operator's position (e.g. the continuous decrease of revenues from telegraph and teletext services). It has come to the actually normal situation where there is a supply in the telecommunications market that exceeds demand (Deogaonkar & Washimkar, 2014). And this was possible by creating much smaller economic entities, if compared to RomTelecom, more mobile, with easier access to the capital market and generally better managed. In 2016, the value of the telecom services' contribution to the creation of the Gross Domestic Product in Romania was 9 billion Euros.

Vertical integration involves expanding the work area either forward or backward relative to current affairs on the production and sales chain (Howell et al., 2010; Klein & Jakopin, 2014).

This type of strategy can be very profitable in some industries, while in others it is not, even leading to a decline in profitability under certain conditions (Lee et al., 2018). At the firm level, it can take into account the profitability of the business to be integrated, the extent to which the acquiring firm can improve this profitability as well as the share of the new activity in the turnover to estimate the increase in profitability through integration (Lee et al 2014; Maruyama & Minamikawa, 2009).

Vertical integration of the firm, by integrating suppliers or customers, implicitly leads to increased business complexity (Menon, 2008). Thus, in this process, issues related to the financing of this operation, the integration of new business processes, the development of managerial skills and the implementation of the vertical development strategy must be taken into account. Through vertical integration, a company can hope to achieve economies of scale and scale, reduce costs, increase competitiveness, and gain increased business control (Yami & Nemeh, 2014).

The world's leading telecom operators are also present in our country: Telekom, Vodafone, Orange, Digi. They have important market shares in our country. Thus, the total turnover for Orange Romania in 2017 was 1.07 billion euros. The increase was mainly driven by the positive evolution of the use of mobile data, fixed-mobile packages and mobile equipment sales. As of December 31, 2017, Orange Romania offered mobile, fixed and TV services to 10.6 million customers. Vodafone Romania recorded a total of 9.6 million customers, a 2.1% increase over the previous year. Of the total number of customers, 8.9 million are mobile users. The total number of Telekom Romania customers was 5 million in 2017, and Digi Communications registered 3.39 million users in 2017.

Vodafone, which provides telecommunication services in over 30 countries, is one of the world's largest telecoms companies. In 2016 it recorded annual revenues of 47.6 billion euros, ranking second after Deutsche Telekom. The Vodafone name comes from the words "voice", "date" and "fone," and has its parent company in London (Ibbott & O'Keefe, 2004).

Vodafone registered 100,000 employees at the level of 2016, and over 21% of all Vodafone employees are located in India, which is the largest market for the company in terms of number of mobile customers. Vodafone has a total of 340 million mobile customers, and holds 23% of the mobile market share.

The most valuable markets in Vodafone customers are in Europe (Germany with revenues of 10.55 billion Euros in 2017 and 32 million subscribers, UK with 7 billion Euros in 2017 and 20 million subscribers, Italy with 6 million Euros in 2017 and 15 million subscribers, Spain with 5 million Euros in 2017 and 15 million subscribers, Romania with 8 million subscribers), Asia (India with 209 million customers and revenues in 2017 of 6 billion Euros, 23% market share), Africa (68 million customers and 50% share of the India mobile market). The biggest competitors for Vodafone are Orange, Telefónica and Deutsche Telekom (Nakamura, 2013).

3. ANALYSIS OF TELECOMMUNICATIONS SERVICES IN ROMANIA

Mobile telephony services in Romania have seen a spectacular development since 1997, the number of users and the value of the market rising by several tens of percentage points each year. This was due to the accessibility of the services provided by operators in fierce competition, especially when OTE and Vodafone became major shareholders in Cosmorom and Mobifon, respectively.
Between 2001 and 2008, Romania witnessed a major expansion of mobile telephony among the number of users and the penetration rate of mobile telecommunication services, but in the near future it was possible to record a moment of stagnation and perhaps even decrease as well effect of numerical overtaking: active SIM versus population.
On 21 October 2008, ANCOM (National Authority for Administration and Regulation in Communications) launched telephone number portability, thus contributing to increased market competition, as it gave users the freedom to choose the operator that best meets their requirements price and quality without the discomfort of changing the phone number. As of September 2, 2012, ANCOM decreased the total porting period from 10 to 3 business days. To date, 4.5 million telephone numbers have been transferred between networks, 3.7 million of which are mobile numbers. In 2017, Romanian users ported 892,695 telephone numbers, of which about 94% were mobile numbers.
ANCOM has created the Veritel service, an online application for comparing bids. Thus, based on needs, preferences, consumers' needs, they can quickly compare the supply of telecommunication services offered by companies in the Romanian market.
We analyzed for the first time the evolution of the number of connections in fixed and mobile networks in Romania between 2011-2016. There is a significant difference between the two types of connections. In 2016, 4110 thousand fixed network connections and 22900 thousand mobile network connections were recorded. On average, in 6 years of analysis, Romania recorded 4.5 million fixed connections and 23 million mobile connections.

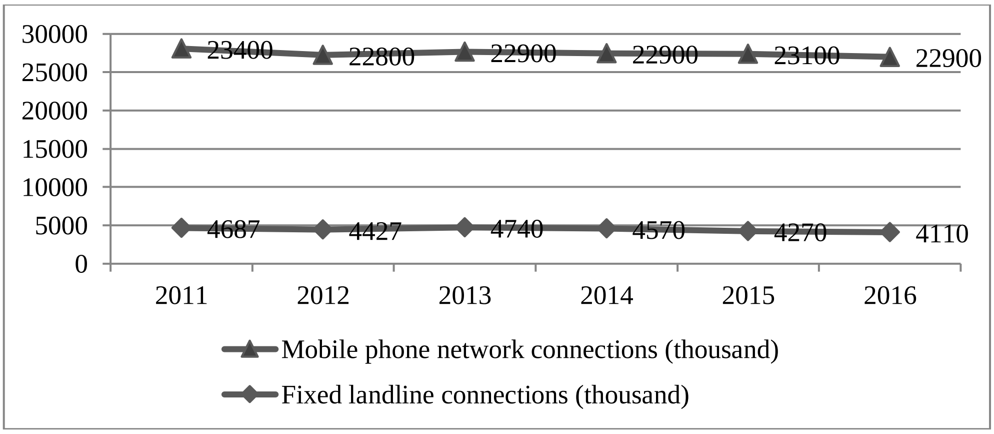

Figure 1. The evolution of the number of connections in the fixed and mobile telephony network in Romania

Source: carried out by the authors according to the data provided by the National Institute of Statistics, Tempo-online Statistics (2017), Telephone Telephony Activities

As regards the total number of fixed and mobile phone calls in the period 2011-2016, Romania made 70.6 billion minutes of mobile calls and 3.2 billion minutes of fixed calls.
There is a year-to-year decrease in fixed telephony calls from 5967 million minutes in 2011 to 3231 million minutes in 2016, a decline of about 46 percent in 6 years of economic analysis. On the other hand, there is a year-on-year increase in the total number of mobile phone calls, from 57617 million minutes in 2011 to 70633 million minutes in 2016, representing an increase of 22.6% in 2016

compared to 2011, and the trend continues to rise. There is a decline in fixed telephony and an increase in mobile telephony. There is also an increase in the number of subscriptions to mobile telephony services due in large part to the diversification of the packages and facilities offered by suppliers at the conclusion of a subscription contract which includes new generation phones at attractive and preferential prices. In Romania for mobile telephony services, in 2017, I had 11.8 million subscription-based subscribers and 10.4 million active prepaid cards.
Landline usage has a downward trend, with decreases in both the number of access lines (down 5% to 4 million) and in voice traffic. On June 30, 2017, the fixed telephony penetration rate per 100 households was 43%.

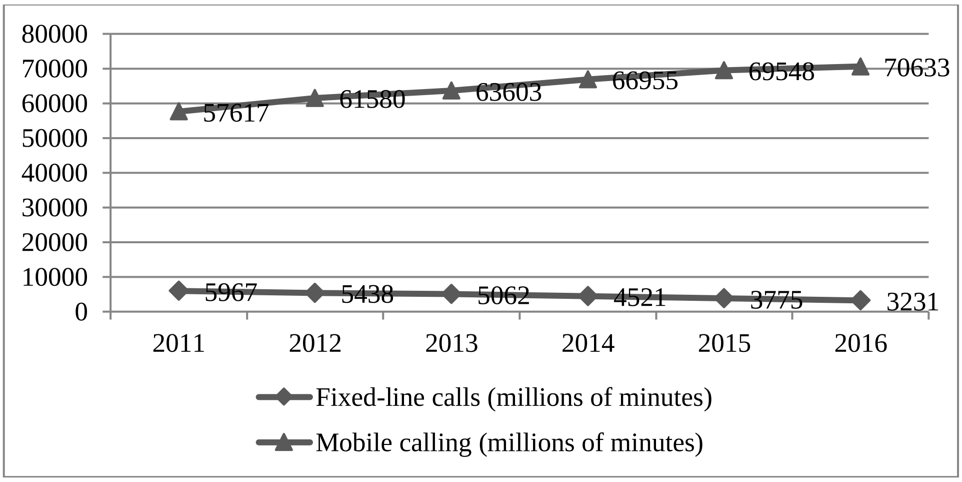

Figure 2. Total number of calls in fixed and mobile networks in Romania
Source: carried out by the authors according to the data provided by the National Institute of Statistics, Tempo-online Statistics (2017), Telephone Telephony Activities

Analyzing the total fixed-mobile traffic, we notice that it averaged 1113 million minutes in the period 2011-2016, down 21 percent in 2016 as compared to 2011. The highest decrease (35 percent) was recorded for fixed- fixed. It has fallen from 999 million minutes in 2011 to 653 million minutes in 2016. Mobile-fixed traffic is up 7% from 2011 and reaches 2218 million minutes in 2016.

Table 1. Total fixed and mobile traffic in Romania during 2011-2016

	2011	**2012**	**2013**	**2014**	**2015**	**2016**	Mean	AAGR (%)
Total fixed-mobile traffic (millions of minutes)	1144	1191	1256	1178	1001	909	1113	-21
Total traffic fix-fix (thousands of minutes)	999	1031	980	876	752	653	882	-35
Total mobile-fixed traffic (millions of minutes)	2184	2283	2103	2169	2240	2330	2218	7
Total mobile-mobile traffic (millions of minutes)	5540	5849	6492	9102	14936	20273	10365	266
Total text message traffic (millions of messages)	11172	13873	16904	19499	20242	18279	16662	64

Source: carried out by the authors according to the data provided by the National Institute of Statistics, Tempo-online Statistics (2017), Telephone Telephony Activities

In terms of mobile-mobile traffic, the increase is spectacular by 266 percent in 2016 compared to 2011, so in 2011 we had 5540 million minutes of mobile-mobile traffic, and 5 years later in Romania there are 10365 million minutes of mobile-mobile traffic.
On the other hand, the total number of text messages increases by 64% in 2016 as compared to 2011, reaching 16662 million messages.
All these figures show us a favourable overall picture for the Romanian telecoms market. Without proper management this would not have been possible.

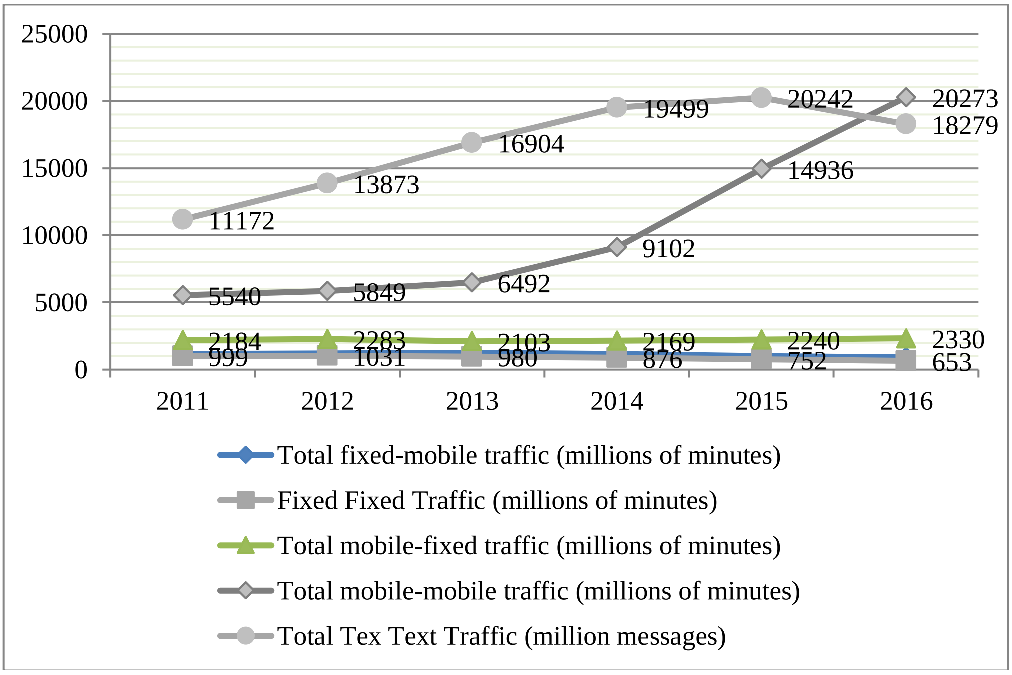

Figure 3. Evolution of minute traffic in Romania during 2011-2016
Source: carried out by the authors according to the data provided by the National Institute of Statistics, Tempo-online Statistics (2017), Telephone Telephony Activities

Next, we will analyse as a case study the main telecom operators in the Romanian market and how they could use vertical integration as a strategic management method for increasing the company's revenue and customer loyalty.

4. VERTICAL INTEGRATION STRATEGY IN ROMANIAN TELECOMMUNICATIONS COMPANIES

In the year 2016, Telekom Romania recorded revenues of 984.7 million Euros, 1,186 million broadband customers (fixed and mobile), 113.1 million Euros revenue in the wholesale segment (sales of other companies' services), and 370,000 total customers of converged fixed-mobile services MagentaONE. Providing the possibility of purchasing television services, fixed telephony, Internet services all offered by the same operator is called triple-play. By adding to these services the mobility component, such as mobile and / or Wi-Fi in the home through a modem means quad-play. These integrated offers create a win-win situation for both the consumer and the telecoms company. Telekom Romania currently owns the most modern cloud and mobile applications. Integrating bundles and bids brought Telekom to most new customers (18,000 in 2016), being the strongest players due to quad-play on the Romanian market (Telekom Annual Report, 2017).

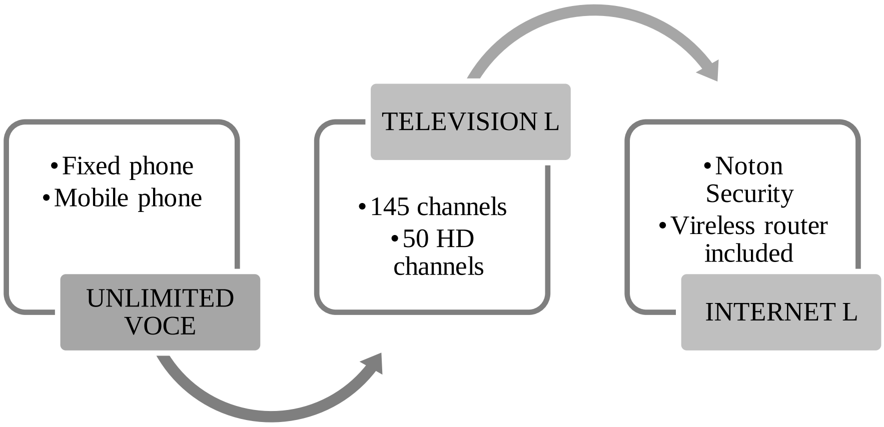

Figure 4. Integration of Telekom Romania Services
Source: created by authors

TELEVISION L + INTERNET L + VOCE UNLIMITED are the integrated service package created by Telekom for the Romanian market. This includes TELEVISION (up to 145 channels, of which 50 HD, 116 TV channels online with Telekom TV or www.telekomtv.ro), INTERNET (Maximum download speed of 1 Gbps for download and 200 Mbps for incarnation (FTTH), Norton Security Online 1 free 2 months license, Wireless Router Included), FIXED TELEPHONE (unlimited national minutes: fixed and mobile, unlimited international minutes, Cordless phone included throughout the contract period if you are a new customer), MOBILE PHONE (not included in the subscription price, paid separately for this service). The subscription price TELEVISION L + INTERNET L + VOCE UNLIMITED is 17 euro / month with VAT included, for 2 years contract period.
Thinking of such a package of integrated television, internet, voice (fixed-to-mobile telephony) is Telekom's current management that also takes into account market trends: using the Internet to watch TV shows, using hashtag to comment in real time when you watch various shows, screen mirroring on mobile devices that allows you to watch TV on your tablet when you leave for a few minutes from the TV.
Orange is the brand under which France Telecom provides mobile, Internet and television services. The France Telecom Group is one of the world's leading telecoms services with over 183 million customers on five continents.
At the level of 2016, Orange Romania recorded total revenues of 987 million euros and 10,388 million customers. Orange Romania has been on the market through the 4G network, offering 4G coverage since 2017 in all Romanian cities. In 2018, Orange increased the maximum access speeds in the 4G / 4G + network, at 200 Mbps in the 4G network, and at 500 Mbps in the 4G + network.
In 2016, the total number of Orange Home TV customers was 333,000, and the number of downloads and updates of Orange TV Go, the streaming video on phone or tablet, exceeded 2 million (Orange Annual Report, 2017).
Orange has launched an integrated fiber, mobile and TV service at a price of 8 euro / month for 2 years of subscription, called ORANGE LOVE. Orange offers the possibility of an integrated Internet subscription, fibre-to-TV, voice and mobile internet in a single package on a single invoice. Virtually Orange creates a mobile voice subscription to which it adds Internet through fiber and free cable TV service. Under the slogan "All you need is LOVE", Orange succeeds in imposing itself on the Romanian telecoms market by offering a coherent and integrated offer of quality services at higher prices than competition, underlining the fact that if you want quality services you have to pay for them.

In 2016, Vodafone Romania recorded service revenues of 688.4 million euros, with a total of 9,120 million customers, of which 8,461 million mobile users (Vodafone Annual Report, 2017).
Observing the market, Vodafone Romania concluded an agreement with Telekom Romania for wholesale services at the beginning of 2018, on the basis of which Vodafone could launch fixed Internet and TV services using Telekom Romania's fiber optic network in urban areas. The deal will enable Telekom to better exploit its fixed infrastructure. In the segment of individual customers, Vodafone Romania will offer voice and data services, as well as the 4GTV + video and music streaming service. In the corporate segment, the company has long been distinguished by its innovations in converging fixed-to-mobile packet services including Internet, IP VPN and voice services since 2000.
Integrated services were designed by the Vodafone Romania management team starting with the Zonga application. This is a music application featuring more than 25 million songs that can be accessed without limit, and where, moreover, Vodafone offers us additional useful services such as synchronizing on the server (save offline) of the song list on any the terminal on which the app is used, the ability to even access the songs on the created list or to create their own radio stations by setting up certain musical genres.
The Vodafone Experience Store is a new and useful concept for customers because it provides after-sales service. The smartphone after-sales assistant helps Vodafone customers by entering the sim card and data card (if necessary), turning on and off the terminal (button localization), locating the volume buttons, setting the terminal: the language of use, the region in which is the time and date setting, the transfer of contacts. What can be more useful for the client than to leave with a ready-made phone in the store and not just a mobile phone in a beautiful box? The idea started from Vodafone employees in the Vodafone Experience Store who were thinking about how to make a unique experience for the customer and the information was taken over by the company's management and implemented. This is a concrete example of management collaboration with associates for consumer satisfaction.
RCS & RDS (Digi Romania) recorded revenues of € 612.7 million in 2016 and customer numbers of 3.2 million for mobile telephony, 2.1 million fixed internet customers, 2.86 million customers subscribed to cable TV, 641,000 subscribers to satellite television and 1.33 million fixed-line customers (Digi Communications Annual Report, 2017).
On the fixed network, RCS & RDS has about 800,000 more customers than Telekom, which is the second player on this segment. On the TV segment, RCS & RDS has about 2 million customers more than Telekom, which comes second.
With the integrated fixed phone, mobile phone, cable TV, fixed internet, RCS & RDS wireless internet, it operates a low-priced policy offering all these services as digi service packages. Digi has also integrated Digi Energy service packages. Digi Energy is the electricity supply service from RCS & RDS. In the Digi offer it is specified as follows: "If you are already a Digi customer at the Digi TV cable service and/or at the Digi Net fixed internet service, you benefit from the price of 0.180 lei/kwh, excluding VAT, (being 0.010 lei/kwh) plus the reservation fee of 0.2 lei/day excluding VAT." In 2017, RCS & RDS totals 70,698 Digi Energy customers.
Integrated service packages are for the benefit of consumers who pay a single invoice and benefit from multiple services from cable TV, fixed telephone, mobile phone, fixed and wireless internet, and electricity.
Phones, mobile, internet, TV, energy pulse represents Digi Integrated Services Management Strategy for the Romanian Telecommunications Market.

5. CONCLUSIONS

Telecommunication innovations persist and we consider that it will be harder to duplicate, because they are more and more technological, strengthened by IT and software. Thus, beyond the will, the

barrier of possibility becomes destructible for competition. The competition needs to innovate and to conceive theirs ideas and thus the management creativity emerges.
The telecommunications market uses integrated strategies for services both for the benefit of consumers and for the company's revenue. The market allowed for vertical upstream and downstream development within the telecommunication services sale chain.
In Romania for mobile telephony services, in 2017, there were 11.8 million subscription-based subscribers and 10.4 million active prepaid cards.
Landline usage has a downward trend, with decreases in both the number of access lines (down 5% to 4 million) and in voice traffic.
In terms of mobile-to-mobile traffic, the increase is spectacular by 266 percent in 2016 compared to 2011, so in 2011 we had 5540 million minutes of mobile-mobile traffic, and 5 years later in Romania we recorded 10365 million minutes of mobile-mobile traffic.
The work shows the financial statements given by the volume of receipts, the number of customers, for each of the 4 major players on the Romanian market: Telekom, Vodafone, Orange and Digi (RCS-RDS). The detailed analyses highlighted the following: Romania's telecoms market generates over 9 billion euros annually and presents an oligopoly situation with 4 big players present through integrated service offerings: Telekom, Vodafone, Orange, Digi (RCS & RDS).
Analyzing the evolution of the number of connections in fixed and mobile networks in Romania, between years 2011-2016, there was a significant difference between the two types of connections. In 2016, 4110 thousand fixed network connections and 22900 thousand mobile network connections were recorded. On average, in 6 years of analysis, Romania recorded 4.5 million fixed connections and 23 million mobile connections.
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Telecom, Vodafone, Orange, Digi (RCS & RDS) offer integrated fixed and mobile phone services, cable television and fibre optic television, cable internet and wireless Internet, advantageous porting, Energy).
Orange and Vodafone are predominantly "mobile" companies, while Telekom has a very large base of subscribers to fixed telephony, television and the Internet.

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