OLIGOPOLISTIC MARKET OF MOBILE TELEPHONY IN CROATIA

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Abstract

After the period of monopoly in the mobile telephony market, the entry of new companies, leads to the oligopolistic market. This paper analyzes the transition from monopoly to oligopoly in the Croatian mobile telephony market with particular emphasis on indicators of business success, which shows how successful management of leading companies in this market was. The article is based on the performance of management in three major operators in the oligopolistic mobile telephony market of Croatia. On the basis of performance indicators, using regression analysis based on the eight-year data, we predict the movements of these indicators in the next three years.

Key words: *mobile telephony, monopoly, oligopoly, Republic of Croatia*

1. INTRODUCTION

Mobile phone market is extremely interesting in terms of market structures, as well as corporate governance in these market structures. In most countries, mobile telephony market was in the beginning a typical monopolistic market, which later with the arrival of new entrants to the market became an oligopoly, and in the future on large markets can happen even monopolistic competition. This is the way Croatian mobile telephony market passes also. After a period of monopolies, the emergence of new participants in the market currently established oligopolistic mobile telephony market.

2. METHODOLOGY AND DATA SOURCES

Financial reporting is important in modern business as it represents the basis on which decisions are made. It is also important because it provides an insight into the operations of an economic operator and assessment of its operations. The result of the research of corporate performance is immense multitude of different performance indicators, resulting in a variety of quantitative and qualitative indicators. The universal indicator for all aspects of business performance does not exist, and the reasons why every company analyzes indicators of business success are numerous: for increasing their own business performance, due to the possibility of expressing the basic managerial functions such as planning and controlling and motivating employees to work more and more responsible and thus improve the company's business. Companies usually present financial indicators that are visible from the financial statements of the company, but today in the business world more and more enter the non-financial aspects. For a successful business enterprise it is necessary that management has sufficient knowledge on the management of resources entrusted to them, financial policies, financial statements and indicators of corporate performance. This paper, on the basis of selected indicators of success, using regression analysis predicts future movement of the same indicators. On this basis, one can analyze the situation in the mobile telephony market in the Republic of Croatia in the next three years. Data for the analysis were taken from the annual reports of companies that are analyzed, as well as of the Croatian Telecommunications Agency.

3. THE POSITION COMPANIES IN DIFFERENT MARKET STRUCTURES

Modern mobile telephony market is a typical example of oligopolistic market that is very dynamic and interesting for the analysis from the microeconomic aspects. The above market initially was a monopoly, but an increase in its importance is increasing and the need to eliminate the regulation towards the competition. Since the mobile telephony market has grown from monopoly to oligopoly, it is necessary to briefly define the basic characteristics of these two market structures.

Oligopoly is an example of the market of imperfect competition. It is the dominant market structure in many economic activities in advanced market economies. Market structure called oligopoly is characterized by the existence of more than one or less than "many" companies.[1] In other words, it is a market structure in which exists the competition between a few very large companies. The fact that in this type of market there are only few producers implies that each of them has a certain amount of market power and can affect the price of products.[2] The moves one manufacturer has a direct effect on other producers and cause reactions of competitors.

The fundamental characteristic of an oligopoly is primarily reflected in the fact that business decisions can strongly influence the position of rivals, but also the reactions of their competitors have to be analyzed. One of the biggest barriers to the entry of new producers in the oligopolistic industry are economies of scale that say that only with large amounts of output one can cover the average total costs.

Monopoly is defined as a market in which there is only one producer, where the product has no close substitutes, which is closed for other companies that want to enter it, whether for legal or technical reasons. Unlike the markets of perfect competition, monopolistic producer is in a very strong position as opposed to the consumer because it can dictate terms to the consumer that no other suppliers. On monopolistic market vendor is in a dominant position, while the buyer must accept the conditions imposed on him.

Product price in monopoly, as in the example of perfect competition, is determined by the action of the total supply and total demand for the product. The only difference is that the total supply simply equal supply company that has a monopoly - because this company only produces the product. Frequent misunderstanding refers to the belief that the monopolist can do with the price of what he wants. Although the monopolistic company has a lot of freedom in determining prices, it depends on the elasticity of demand which, among other things, depends on the possibility of substitution of products.[3] Therefore without many substitutes or no substitutes in the short term, the demand will be relatively inelastic and the price increase will not cause a particular reduction in the quantity of demand.

4. LITERATURE OVERVIEW

Stoili and Economides[4] have analyzed strategic alliances in Greek mobile telephony. Mobile telephony companies try to expand by forming strategic alliances with companies from various industries. The objective of their paper was to analyze the motives, the actions and the results of the collaborations and alliances of two Greek mobile telephony companies (Cosmote and Vodafone Hellas). In addition, they illustrate examples of how the technology change and the technological convergence (Internet, computers, and mobile telephony) affected and activated the proliferation of these alliances. The entry of I-mode and Vodafone Live! in the Greek market caused an increase in the number of alliances especially with content aggregators and media companies.

Mesher and Jittrapanun[5] analyzed the reorganization of Thailand's telecommunications markets from the late 1980s up to 2004 with emphasis on the changes that have occurred during the Thaksin administration. They take an interest group approach to analyzing Thai telecom politics. Their view is

[1] Santini, I. (2004.) *Mikroekonomija*, HIBIS, Zagreb, p. 210
[2] Pavić, I., Benić, Đ., Hashi, I. (2009.) *Mikroekonomija*, Ekonomski fakultet u Splitu, Split, p. 457
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[3] Browning, E.K.; Zupan, M.A. (2006) Microeconomics: Theory and Applications, John Wiley and Sons
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[4] Stoili, I.; Economides, A.A. (2007) Strategic Alliances in Greek Mobile Telephony, Journal of International Technology and Information Management, Vol. 23, No. II
[5] Mesher, G.; Jittrapanun, T. (2004) Thailand's Long Road to Telecom Reform, ASEAN Economic Bulletin, Vol. 21, No. 1, pp. 94-105

that the main interested parties will have the greatest influence on policy and that policy outcomes will therefore reflect the goals of those groups. At that time, the telecom policy landscape in Thailand was characterized by the leading position held by the country's private sector telecom firms. Support for these companies and their goals had become the driving force behind telecom policy and has replaced the more bureaucratic-led policy-making of the last decade. While the newly dominant coalition of private sector telecom operators can be seen as supporting the completion of the privatization of Thailand's public sector telecommunications organizations, they are not likely to support the creation of the fully competitive telecom markets envisioned during past administrations. The authors therefore argue that oligopoly-structured markets similar to those which already exist for fixed-line and mobile telephony services will be the likely endpoint of Thailand's current telecom liberalization phase.

Klimczak[6] analyzed the Polish mobile telephony industry. Recent developments in these markets brought again the attention to market strategies in which mobile operators engage. The aim of the paper was to present transformation of the Polish mobile telephony and predict the future of it after recent developments in strategies that included product differentiation and proliferation, price competition resulting in a price war and uncovered collusion as an activity opposite to competition. The main conclusion takes into consideration the fact that recent market strategies of mobile operators are very resolute: companies in the industry might curb the competition, especially price one. Such tenacious activities might not be repeated again.

Botelho[7] proposed the application of two different models, linked by interconnection prices in the mobile telephony market in Brazil. The first is an application of the model presented by Bresnahan[8] to measure the market power of providers of mobile telephony in Brazil and to estimate a function for marginal cost. The second is an application of the model presented by Harbord and Hoering[9] to analyze the total welfare in Brazil mobile's telephony market, when the mobile interconnection price is reduced. It is expected that a reduction in the price of mobile interconnection leads to an increase in total welfare according to the positive externality of receiving a call. The results are in line with those reported by Harbord and Hoering for the case of the UK and go against some previous literature on that matter, serving as a new policy orientation regulatory system for the mobile market.

5. PERFORMANCE OF MANAGEMENT

The concept of success is the basis of a broader definition of responsibility in the process of managing the company, which in addition to profitability, is one of the criteria aimed at maximizing potential yield and minimizing the costs and business risks, including: the development and growth of society, stability, efficiency of investment capital (financial skills) intellectual creativity of staff, marketing and distribution efficiency, cooperation and collaborative craftsmanship, etc.[10] The success of companies, today more than ever before, is the result of effectiveness of management. In most, more than 90% of cases, the reason for the failure and bankruptcy of companies is located in the ineffective management.[11]

Measures of economic performance as the typical size of a particular business venture are closely related with the business objectives of modern society. Since the modern society is at the same time determined as economic entity and as sociotechnical system, and as an essential component and subsystem of the economic system, with all the economic and social attributes, it is clear that today we should talk about pluralism of objectives and pluralism of economic performance indicators. Pluralism of goals of modern society are conditioned by the pluralism of conflicting interests of individuals and

[6] Klimczak, M. (2013) Transformations of Market Strategies in Mobile Telephony in Poland, Transformations in Business and Economics,Vol. 12, Iss. 2, pp. 379-91
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groups of interconnected business activities. Businessmen increase profits, managers maximize their wages and other goals that affirm their abilities, shareholders are interested in the amount of dividends, suppliers and customers expect stability and prosperity of business etc. From pluralism of business goals arise the pluralism of economic performance, namely: the realized rate of return or profitability, the growth rate of the company, safety and solvency of operations, prestige over the competition, price stability, economic strength etc.

Most commonly, the company's business performance is presented by the financial indicators that are visible from the financial statements of companies (ROA, ROE, ROI, EVA, MVA and many others), but apart from the financial aspects of establishing business success, there are also non-financial aspects, such as Value Based Management, Business Excellence, Balanced Scorecard Concept, Total Quality Management, Activity Based Costing, Key Performance Indicator and many others.

6. DEVELOPMENT OF THE MOBILE TELEPHONY MARKET IN CROATIA

The market of telecommunication services is an important part of development of each country. This market was primarily monopoly, but an increase in its importance is increasing and the need to eliminate the barriers towards competition. The vital roles in this have the regulatory agencies for free market protection.

The liberalization of the telecommunications market in Croatia formally began on 21 of July 2003 with the adoption of the Telecommunications Act, as a very important legislation and the basis for the progress of the telecommunications market. The adoption of the Telecommunications Act provided standards for further harmonization of Croatian telecommunications legislative framework with EU regulation. The Telecommunications Act also established the Croatian Telecommunications Agency (HAKOM), as an independent, non-profit legal entity with public authority, which is the national regulatory agency carrying out regulatory and other tasks defined in the Act.

Mobile market in Croatia was monopolized until 1999. The only provider of mobile services by the end of the 90's was CRONET. In 1999 the first competitor appeared – VIPnet, who brought the first prepaid tariff to Croatia. T-Mobile (CRONET) has promptly responded to VIPnets' success and offered also a prepaid. For this and many other reasons, T-Mobile remained the strongest and the largest mobile operator in Croatia. In 2005, Tele2 entered the market, as the third mobile service provider, which performed very aggressive marketing campaigns and brought a revolution in the mobile telephony market in terms of price. Although the Croatian mobile telephony market was liberalized in 1998, the arrival of the first private mobile operator appeared in July 1999 starting commercial operations. The second step of liberalization occurred in October 2005 with the beginning of commercial operations of the third mobile network operator.

Such a process of liberalization has led to the situation where even though today in Croatia there are 39 providers of mobile telephony, there are three main mobile network operators: T –Mobile, VIPnet and Tele2. The shares of these mobile network operators are shown in the following table.

Table 1. Market shares in mobile telephony market by quarters

Quarter	**Tele2**	**VIPnet**	**T-HT**
I/2012	13,81%	39,24%	46,95%
II/2012	14,42%	38,86%	46,72%
III/2012	14,54%	39,04%	46,42%
IV/2012	14,58%	38,64%	46,78%
I/2013	15,14%	38,06%	46,79%
II/2013	15,16%	37,95%	46,89%

III/2013	15,69%	37,86%	46,45%
IV/2013	15,59%	37,54%	46,88%
I/2014	15,94%	37,24%	46,82%
II/2014	17,82%	35,57%	46,61%
III/2014	18,33%	35,35%	46,32%
IV/2014	18,03%	35,17%	46,80%
I/2015	17,79%	34,44%	46,77%

Source: HAKOM

From the data in the Table 1 it is obvious that the group T-HT is the leader in the field of telecommunication services in Croatia with a share over 46% of the market operators of mobile networks which puts it in a dominant position in the market. A market follower is Vip with 35% of the market, followed by Tele 2. One can conclude that industry of mobile communications has strong characteristics of natural oligopoly in the sense that a limited number of companies can survive in the market equilibrium regardless of the size of the market.

7. PERFORMANCE OF MANAGEMENT IN THE MOBILE TELEPHONY MARKET IN CROATIA

The analysis of the profitability of the company is one of the most important parts of the financial analysis. Profitability ratios are relations linking profits with sales and investments, and observed together, they show the overall performance of the company. Among the most commonly used indicators of profitability are: return on assets, return on equity and profit margin. Profitability ratios measure the ability of the company to achieve a certain level of profit in relation to income, assets or equity.

Table 2. Profit in million kuna

Profit	**2007.**	**2008.**	**2009.**	**2010.**	**2011.**	**2012.**	**2013.**	**2014.**
T-HT	2473	2310	2023	1831	1811	1696	1442	1142
Tele 2	-388	-465	-458	-350	-277	-247	-450	-394
Vip	807	771	611	501	390	380	242	34

Source: FINA

As it can be seen from the Table 2, T-HT is the operator who is convincing most profitable on the market until today, but this gain over the years it has diminished so that in 2014 it amounted to 1.142 billion kuna, which is significantly less than the profit over the past eight years. Tele 2, which appeared in 2005 as the third operator in the mobile telephony market has realized losses in each year. Vip has achieved positive earnings throughout the period but the profits from have been falling drastically from 2007 to 2014Since all three mobile operators generate less profit all through the years, we can generally conclude that the total profit in the mobile telephony market decreases.

Table 3. Total revenue in million kuna

Total revenue	2007.	2008.	2009.	2010.	2011.	2012.	2013.	2014.
T-HT	8838	8791	8517	8372	8067	7555	7042	6908
Tele 2	424	636	874	994	1071	1152	1280	1226
Vip	3792	3867	3612	3271	3197	3239	3075	3002

Source: FINA

In the observed period T-HT achieved enormously greater total revenue in relation to the other two operators, even though its total revenues declined. Also the second largest operator Vip achieved revenue decline, although not as significant as T-HT. The only operator whose total revenues consistently achieved growth is Tele2, which in 2014 achieved total revenue of 1.226 billion kuna, which is almost three times more than the total revenue realized in 2007. From this indicator, it is possible to conclude that the market is becoming oligopolistic and that Tele2 became strong competitor for T-HT and VIP.

Table 4. Market share

Market share	2007.	2008.	2009.	2010.	2011.	2012.	2013.	2014.
T-HT	47,35	45,73	46,70	46,70	47,00	47,00	47,00	47,00
Tele 2	9,34	11,96	10,70	10,20	13,80	14,70	15,70	16,00
Vip	43,31	42,31	42,60	43,10	39,20	38,30	37,30	33,30

Source: FINA

Although the mobile operator Vip has been trying approach the leader in the market of telecommunications, T-HT and by 2010 it is almost got similar percentage of market share, from 2011 its share started to fall. In the same period Tele2 increased the number of its customers, thereby achieving a growing market share. All this did not affect too much the market leader in the telecommunications market whose market share remained about 47%.

Table 5. Return on Assets

ROA	2007.	2008.	2009.	2010.	2011.	2012.	2013.	2014.
T-HT	16,16	15,19	13,98	13,53	13,79	12,93	11,25	8,26
Tele 2	-24,27	-20,59	-42,48	-27,77	-21,86	-23,47	-57,02	-43,19
Vip	28,38	26,39	21,05	17,02	11,84	11,04	6,80	0,85

Source: FINA

The return on assets (ROA) shows the ability of companies to use available assets to generate profit, which means how easily a company earns money. Although T-HT continues to have a positive return on assets, with a slight downward trend, it is impossible not to see that the ROA in 2014 was almost twice lower than in 2007. Vip had a constant decline in the return on assets from 2007 to 2014, which got close to zero at the end of the period. Tele2 has negative ROA in the whole period.

8. ESTIMATION FOR FUTURE TRENDS

Based on selected quantitative performance indicators collected from the annual financial statements for the eight-year period of the three major mobile phone operators in the Republic of Croatia, we can now forecast the trend of their business. Based on the regression analysis of selected indicators we will predict the values for T-Mobile, VIP and Tele2. The estimation is carried out by numbers and intervals. Prognostic value is calculated by including the assumed value of the independent variable in the regression equation.

Table 6. Estimation for profit in million kuna

Profit	**a**	**b**	**2015.**	**2016.**	**2017.**
T-HT	2626,25	-174,50	1056	881	707
Tele 2	-437,71	15,34	-300	-284	-269
Vip	913,98	-96,29	47	-49	-145

Parameter a shows the constant or the estimated value for 2006, and the parameter b shows the average annual change. Based on these indicators and the assumption of a linear trend, we have calculated the predicted values for 2015, 2016 and 2017. It is expected that the profit of T-HT continues to decrease, Tele 2 will reduce loss and Vip will get from achieving profit to the realization of loss. The Chart 1 shows trends in values from 2007 to 2014 and the estimated values from 2015 to 2017.

Chart 1. Profit and estimated profit

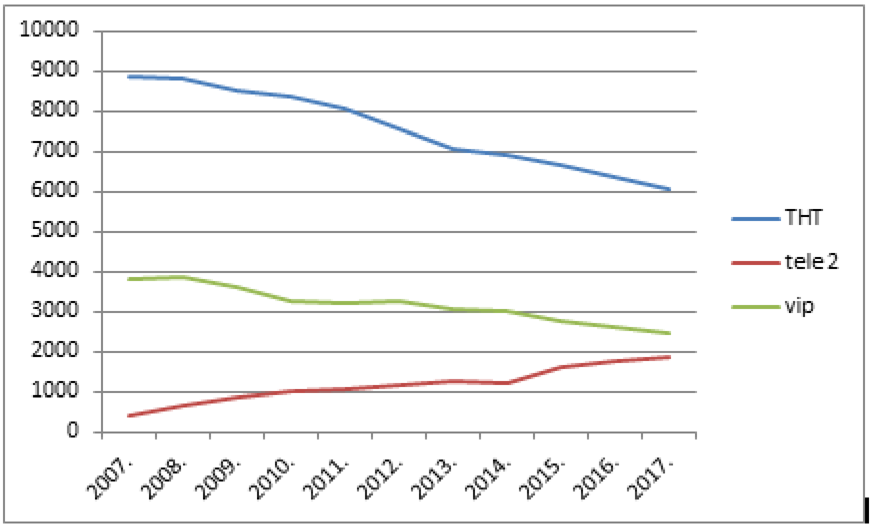


Table 7. Estimation for total revenue in million kuna

Total revenue	**a**	**b**	**2015.**	**2016.**	**2017.**
T-HT	9374,43	-302,93	6648	6345	6042
Tele 2	376,44	135,55	1596	1732	1868
Vip	3982,03	-136,50	2754	2617	2481

It is expected that the total revenue of leading two operators (T-HT and Vip) fall in next three years. The total revenue of Tele2 should rise. This trend can be observed and analyzed also on the Chart 2.

Chart 2. Total revenue and estimated total revenue

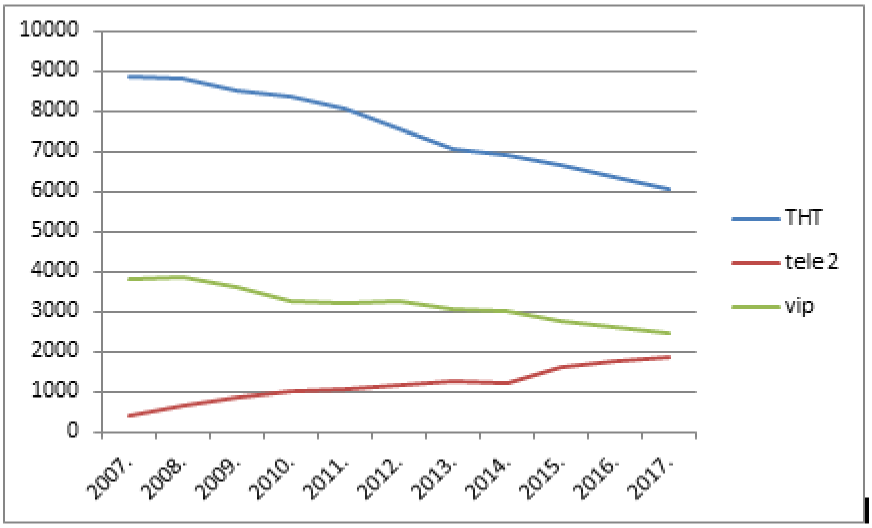


Table 8. Market share and estimated market share

Market share	a	b	2015.	2016.	2017.
T-HT	46,54	0,06	47,08	47,14	47,20
Tele 2	8,39	0,99	17,28	18,27	19,26
Vip	45,08	-1,05	35,62	34,56	33,51

Parameter b indicates that market shares of T-HT and Tele2 should rise, while the market share of Vip should fall in next three years. This can be concluded also from the lines showed on Chart 3.

Chart 3. Market share and estimated market share

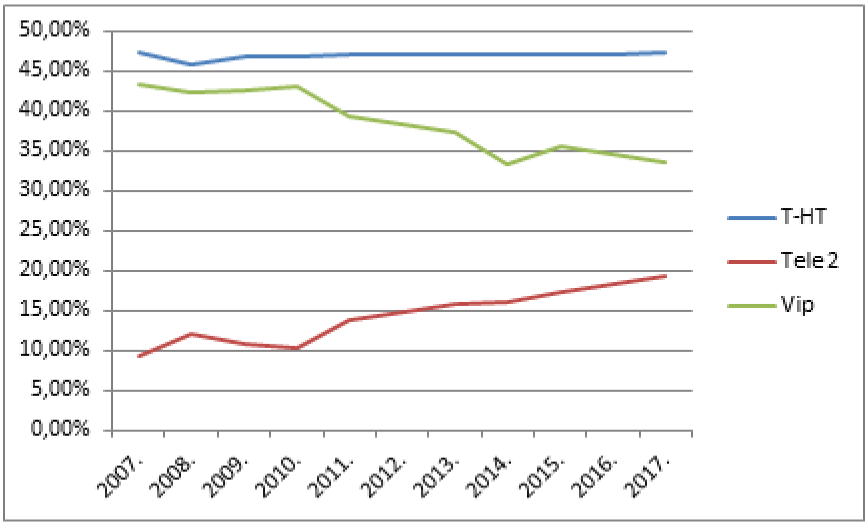
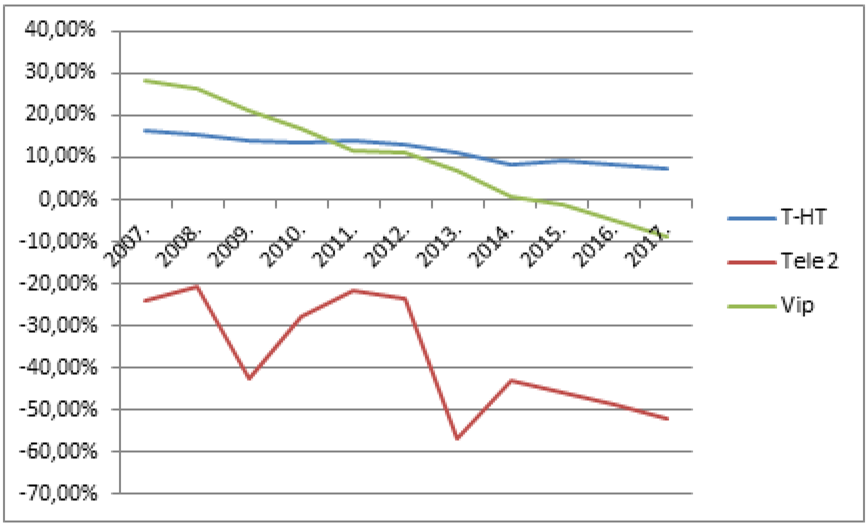


Table 9. Estimation for Return on Assets

ROA	a	b	2015.	2016.	2017.
T-HT	17,04	-0,88	9,15	8,27	7,39
Tele 2	-19,16	-2,98	-45,95	-48,93	-51,91
Vip	32,45	-3,74	-1,19	-4,93	-8,66

Negative parameter b indicates the negative average annual change of ROA, which means that all three operators'' ROA should decline. These trends are shown graphically on Chart 4.

Chart 4. ROA and estimated ROA



9. CONCLUSION

By analyzing all the indicators and the estimated values, we can conclude that T-HT as the current leader in the next three years will keep that position. Although almost all of the above indicators, such as profit, total revenue and total assets have a slight negative trend, these results, as well as the predicted ones, are far more positive than the second largest operator Vip, whose almost all parameters dropped drastically after 2010. Obviously, T-HT's strategy is based on the quality of services, customer satisfaction and the advanced technological infrastructure that enables further development of services, their own human and professional potentials and good management decisions.

The entire market share that Vip has lost, Tele2, as the youngest of the three most successful mobile operators, has gained. Tele2, which appeared in 2005, came to the market where T-HT and VIP had been dominated before, with the desire to make mobile communications accessible to everyone. The calling price was down to 60% and it has raised the right revolution in the mobile telephony market. Even though it has a loss in the past eight years, it has been noticeably reducing this loss and increasing market share.

We could conclude that the success of business today depends first of all on the skills and competences of the manager and their motivation to effectively cooperate with business partners and all employees within their own organization. The manager of the future will have to develop the following knowledge and skills if he or she wants to manage a company successfully: to understand changes and manage changes in the interaction of economic, social and political factors of the environment, to possess the ability to manage in dynamic and unpredictable circumstances, to be able to manage complex and diversified organizational structures, in terms of technological progress, be able to use increasingly complex information systems and be able to manage people with different and dynamic values and expectations.

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