METHODOLOGICAL APPROACH FOR ESTIMATING THE INFLUENCE OF THE MANAGEMENT PROBLEMS OF MOBILE OPERATORS IN THE REPUBLIC OF BULGARIA ON THEIR ORGANIZATIONAL IMAGE

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Abstract: *The relationship "management problems - organizational image" in Telecommunication services sector is poorly discussed in the specialized literature. A methodical approach for identifying the management problems of the mobile operators in the Republic of Bulgaria and estimating their influence on the organizational image is proposed in the paper. The study used primary data from 335 individual and 204 business customers of mobile services. The key management problems of the mobile operators in the country are identified and ranked. According to the users they are related to high prices of services, technical reasons, inaccuracies in the bill and contract preparation, unfair trading practices and etc. The influence of the management problems on the image of the mobile operators in the Republic of Bulgaria is estimated by mean indicators and scattering indicators. According to the individual users the greatest influence on the image presents problems related to poor quality of offered services and products, technical problems and etc. For business users management problems such as: poor quality of information, application of unfair commercial practices, small variety of services and products, unfairness in the preparation of the contract have the most significant impact on the organizational image. The results show that the formulated working hypothesis has been proven. Individual and business customers assess the influence of identified management problems on the organizational image in a different way. This means that mobile operators in orders to build their image and achieve leadership should apply an individual approach to each user, taking into account the influence of all management problems, even the unimportant ones.*

Keywords: *Mobile Services, Mobile Operators, Management Problems, Organizational Image.*

INTRODUCTION

Identifying the problems related to the management of mobile operators and factors that caused them is extremely important in seeking effective ways and means to solve them. It is supposed that unsolved problems lead to lower customer satisfaction and service quality and have a negative effect on the image of the organization.

The relationship "management problems - organizational image" in telecommunication services sector is poorly discussed in the specialized literature.

On the basis of a literature review, it has been found that only some problems directly related to the provision of competitive telecommunication services and increased the consumer satisfaction have been studied (Иванова, 2010, 2011, 2012 a, b, 2013, 2014, 2015 a, b, Димчева, 2010, 2011, 2015, 2016; Димчева, Велев, 2016; Suárez, García-Mariñoso, Santos, 2016, Denga, Lua, Weib, Zhanga, 2010, Fujin, Griffin, Babin, 2009, Kuo, Wu, Deng, 2009, Turel, Serenko. 2006, Engler, Winter, Schulz, 2015, Agnihotri, Dingus, Hu, Krush, 2016, Dovalienea, Masiulyteb, Piligrimienec, 2015, Yi-Fei Chuang, 2011).

Therefore it's necessary to develop a methodical approach for identifying the management problems of the mobile operators in the Republic of Bulgaria and estimating determining their influence on the organizational image.

The object of present research is the opinion of individual and business users of mobile services in the Republic of Bulgaria about the influence of the management problems on the organizational image.

The subject of the research is the power of influence of the identified management problems on the image of the mobile operators in the country.

The goal of the study is to develop and test a methodical approach for identifying management problems and estimating their influence on the organizational image of mobile operators in Bulgaria.

The working hypothesis is as follows: the individual and business users estimate the influence of management problems on the image by difference way.

The goal is specified in the following tasks: 1) to present basic methodological steps in conducting the study; 2) to identify and rank the management problems of mobile operators in the country, according to the opinion of the users of mobile services; 3) to

estimate the influence of the identified problems of the management of the mobile operators on their image.

METHODOLOGICAL STEPS FOR THE ESTIMATION OF THE INFLUENCE OF MANAGEMENT PROBLEMS ON THE IMAGE OF MOBILE OPERATORS IN THE REPUBLIC OF BULGARIA

The term *mobile operator* means an organization providing telecommunication services via wireless technology or ground connections. The most wide-spread standards for providing mobile voice telephone services via networks are: GSM (*Global System for Mobile Communication*), GPRS (*General Packet Radio Services*), UMTS (*Universal Mobile Telecommunications Services*), WiMAX (*Worldwide Interoperability for Microwave Access)*, and LTE (*Long-Term Evolution*).

In the Republic of Bulgaria licensed to use the above mentioned standards are Mobiltel Ltd., Telenor Bulgaria Ltd., and Bulgarian Telecommunications Company Ltd., which actually provide services to end users. They are known among Bulgarian sociality by their trade names M-tel, Telenor and Vivacom.

The main starting steps for the study are the following:

- ✓ conducting surveys among individual and business users for their opinion on the current management problems of the mobile operators in the Republic of Bulgaria and their impact on the organizational image;
- ✓ identifying and ranking the management problems of the mobile operators in the country by their significance;
- ✓ estimating the influence of identified management problems on the image of operators.

Due to the fact that no such study has been conducted so far, the present study is mainly aimed at identifying the mobile operators' management problems from users point of view and examining their impact on the organizational image.

The study is made on the base of similar questionnaires aiming to study consumer opinion (individual and business) about the problems of the Bulgarian mobile operators and their impact on the organizational image.

An internet-based survey system (http://www.surveygismo.com) was used to conduct the survey. The system allows to speed up the data collection process, shortening the time for

spreading and collecting filled-in questionnaires and facilitating the processing of the received data.

A point assessment method for ranking the management problems of the mobile operators is applied. The problem with the highest total number of points is ranked first, followed by problems with a decreasing total number of points.

A different management problems of the mobile operators influence on the organizational image. In survey questionnaires 13 problems are identified, they are characterized in Table 1. For their formulation information from the annual reports of the CRC (Communication Regulation Commission) for the period from 2012 to 2016 was used. In particular data on the key causes of complaints by users of electronic communications services.

A numerical scale was used to rank the problems identified by the respondents. Where 1 means the most important one, etc., 13 mean the least important problem.

Table 1 Characteristics of the management problems of the mobile operators (made by the author)

Management problems	Characteristics
□ poor quality of the services (conversation, sending a message, – sms, mms, data transmission, roaming, mobile internet, TV, radio and etc.)	This problem is related to the fact that the services have disadvantages and can not meet the users needs for good communication - for example: bad or slow connection, delayed data transmission (text and graphics), etc.
□ poor quality of the products (telephones, tablets, smartphones, laptops, computers and etc.)	This problem is related to the fact that the offered products have disadvantages and can not meet the customers needs from phones, tablets, smartphones, laptops, computers, etc. to performing specific activities and functions related to personal or business purposes. For example: incompatibility with others communication devices, inability to maintain various current computer applications, low mobility, non-maintenance of all current functions, etc.
□technical problems (network coverage, connection quality, cable damage and etc.)	Problems of a technical nature that may be related to both the infrastructure and the technical devices. For example: poor network coverage or cable damage that lead to the inability to use mobile services, poor connection quality, which is associated with poor communication.
□ bureaucratic difficulties in switching operator and	A problem associated with bureaucratic procedure if the customer wants to change the operator and keep

retention of phone number.	the same phone number.
□ quality of provided information.	This problem is related to the fact that users do not receive up-to-date, accurate and timely information needed to make a decision, i.e. the provided information is of poor quality.
□ high prices of services.	This problem is related to the users perception about the price of service, which repeatedly exceeds its cost.
□ high prices of products.	This problem is related to the users perception about the price of the product, which repeatedly exceeds its cost.
□ a small variety of services.	This problem is related to the fact that the variety of different types of services is small.
□ a small variety of products.	This problem is related to the fact that the variety of different types of products is small.
□ incorrectness at the drafting of the bills (accrual of amounts in the invoices for unknowingly using of services /mobile Internet/, errors in invoices and etc.).	This problem is related to incorrect and inaccurate drafting of the invoice for the purchase of a mobile service and / or a complementary product (phone, tablet, laptop, etc.). For example: accrual of amounts in the invoices for unknowingly using of services /mobile Internet/, errors in invoices and etc.
□ receiving unwanted / advertisements commercial messages.	This problem is related to sending messages with marketing and / or advertising purposes to the customers that have not been requested by them i.e. they are not desired by them.
□ incorrectness at contracts preparation and renewal.	This problem is related to incorrect and inaccurate drafting of a contract for the purchase and sale of goods and services. For example in the contracts are made the clauses in a smaller font with which the customer disagrees. They may be linked to the purchase of an additional product, the term of the contract, payment terms, etc.
□unfair trade practices.	"Business practice" means any action, inaction, commercial initiative or commercial message including advertising or marketing, by a trader to a consumer, which is related to the promotion, sale or supply of goods or the provision of services to consumers. Practice is unfair when it is not acceptable to users and does not meet certain criteria. For example :fake use of limited offers, use of traps to mislead the user, advertising that takes advantage of user security concerns, deceptive advertising, directly encourage children to purchase goods, winning a fake prize or organizing a suspicious lottery, product advertising in media without explicitly stating that this

	is a paid post, traders who lure consumers with one product but subsequently replace it with another to promote sales of that other product, pyramidal schemes, misleading practices with false information about the characteristics of the good or the quality of the service and misleading practices made by hold back information or providing information in an unclear, ambiguous or incomprehensible way that prevents the consumer to from adequately forming his/her choice, aggressive commercial practices for example: mobile operators are hindering their customers if they wish to terminate the contract between the two countries. This is most often connected with the time delay of the telephone number portability procedure to another operator, the diversion of the user's wish with better offers, the fixing of excessively high penalties for early termination of the contract, etc.[1]

The influence of management problems on the image is assessed by 7 –point Likert scale with the following meanings: 7 – extremely strong, 6 – very strong, 5 - strong, 4 -medium, 3 - weak, 2 – very weak and 1 – extremely weak.

In order to test the hypothesis that individual and business users will assess differently the impact of management problems on the image, mean indicators and scattering indicators are used.

The specific indicators that have been applied are the following:

Mean value $(\overline{X})$ that describes the typical, characteristic state of the examined attribute (the power of influence of various management problems on the image according to consumers opinion)

$$\overline{X} = \frac{\sum_{i=1}^{N} X_i}{N} \qquad (1)$$

where: $\sum_{i=1}^{N} X_i -$ sum of the values

N – number of the observations.

Range (R) - represents the difference between the largest and smallest value of the variable and holds information about the range in which the significance of the attribute varies.

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[1] http://ecocrime.bg/home/2013-08-06-19-53-33/84-2013-08-07-19-03-33, Нелоялните практики на търговците – кои са те и как да се предпазим", published on 07.08.2013, site visited on 04.04.2016.

$$R = Xmax - Xmin \tag{2}$$

Only the two end values of the variation order are involved in calculating the range, and therefore it is a very unstable measure of scattering.

Standard deviation (S) is the most accurate and often used scatter indicator. It describes the size of deviations of the values of the variable from the mean value.

$$S = \sqrt{\frac{(X_i - \overline{X})^2}{n-1}} \tag{3}$$

where: X_i – each value of the variable in the sample;

$\overline{X}$ – mean value;

n – sample size.

Variable coefficient (V) – is used to compare the values of different variables and to assess the extent of scattering (homogeneity of the sample).

$$V = \frac{S}{\overline{X}}.100 \tag{4}$$

where:: S – standard deviation;

$\overline{X}$ - mean value.

In interpreting the obtained results about the coefficient of variation, the following should be considered (Павлов, Михова, 2016):

- ✓ It is believed that the scatter of the attribute is small (the sample is homogeneous) when its value is up to 10-12%;
- ✓ Between 10 and 30% the sample is approximately homogeneous;
- ✓ When it is over 30%, the scatter of the attribute is large (the sample is very heterogeneous).

The statistical methods that have been applied are chosen from the point of view of adapting them to the present study in order to achieve its objective and verify the validity of the formulated hypothesis.

RESULTS OF EMPIRICAL STUDIES OF THE CUSTOMERS OF MOBILE SERVICES

The empirical studies have been conducted during the period from 2014 to 2016. The survey comprised 335 individuals and 204 business customers. The distribution by operators is presented in Fig. 1 and Fig.2.
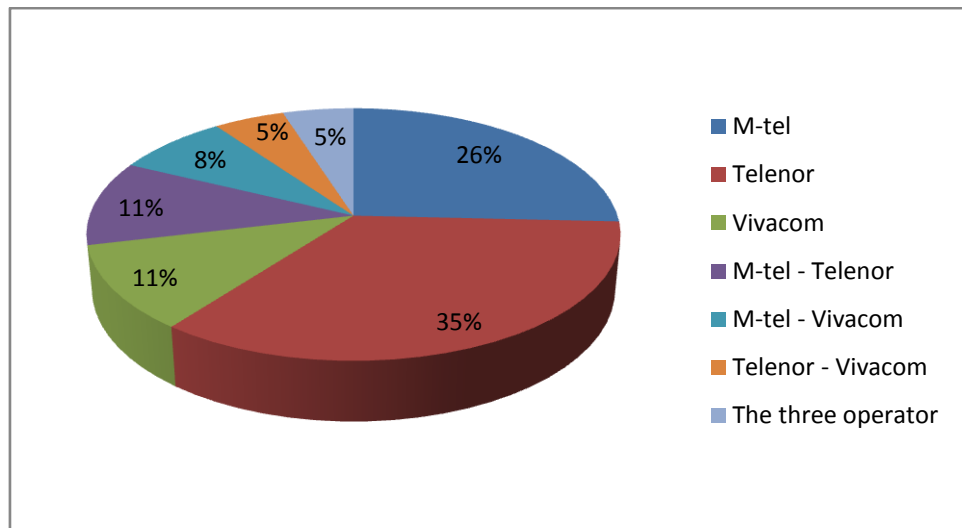
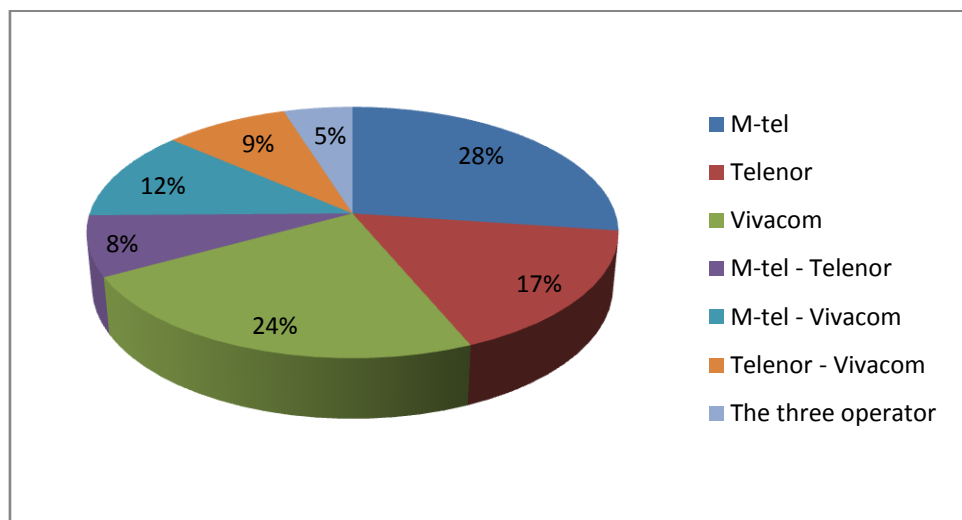**Fig. 1. Relative distribution of individual customers by operators**

Fig. 2. Relative distribution of business customers by operators

The figures show that some of the users are customers of two or three mobile operators. The explanation is that in this way consumers pay lower costs for mobile services.

In order to get a more detailed picture of the respondents below are provided details of their profiles.

Socio – demographic profile of the individual customers

Respondents are distributed as follows: 62.99% females and 37.01% males. According to their age, they are distributed as follows: up to 20 years - 2.7%; from 21 to 30 years - 36%; from 31-40 years - 40%; from 41 to 50 years - 12%, from 51-60 years - 5.37%; over 61 years - 3.88%. Depending on the education: 0.92% had primary education level, 39.76% - with secondary education level and 59.33% - had higher education level. By type of settlement,

the respondents are: 4.53% from the village, 27.19% from a small town, 18.43% from a middle city (from 30 thousand to 100 thousand inhabitants) and 49.85% from a big city (over 100 thousand inhabitants). According to their professional engagement, they can be grouped into different groups.

Business customers' profile

Depending on the criterion, the number of staff of firm, in the sample is dominated micro-companies (43.9%) and small firms (34.3%), followed by the midium (17.7%) and the large organizations (5.1%). About 2% of the business users did not wish to answer the question of classifying their company according to the criteria. According to the location of the firms, business customers are divided as follows: 3% from the village, 25.8% from a small town, 20.2% from the middle city (from 30 thousand to 100 thousand inhabitants), 52.5% from a big city (over 100 thousand. residents) and 1.5% did not answer the question.

Companies from southwest Bulgaria predominate 50%, while companies from the other districts are almost equally (north-west 18.27%, northeast 14.6%, southeast 15.7%). Some respondents (4.5) did not wish to provide information about the geographic area where the company is located. According to the sector of the economy in which the firms operates, business users can be divided into different groups.

As a result of the analysis from the conducted surveys, the management problems of the mobile operators in the Republic of Bulgaria are identified and ranked. The information is summarized and presented in Table 2.

Table 2 Rank of the problems of mobile operators(made by the author)

Significance	Ranking the problems of mobile operators of individual users	Ranking the problems of mobile operators of business users
1	high prices of services	technical problems (network coverage, connection quality, cable damage and etc.)
2	incorrectness at the drafting of the bills (accrual of amounts in the invoices for unknowingly using of services /mobile Internet/, errors in invoices and etc.)	incorrectness at the drafting of the bills (accrual of amounts in the invoices for unknowingly using of services /mobile Internet/, errors in invoices and etc.)
3	technical problems (network coverage, connection quality, cable damage and etc.)	high prices of services

4	incorrectness at contracts preparation and renewal	unfair trade practices
5	unfair trade practices	poor quality of services (conversation, send a message, sms, mms, data transmission, roaming, mobile internet, TV, radio and etc.)
6	receiving unwanted advertisements / commercial messages	incorrectness at contracts preparation and renewal
7	poor quality of services (conversation, send a message, sms, mms, data transmission, roaming, mobile internet, TV, radio and etc.)	bureaucratic difficulties in switching operator
8	quality of provided information	quality of provided information
9	high prices of product	poor quality of the offered products (telephones, tablets, smartphones, laptops, computers and etc)
10	bureaucratic difficulties in switching operator	high prices of product
11	poor quality of the products (telephones, tablets, smartphones, laptops, computers and etc)	receiving unwanted / advertisements commercial messages
12	a small variety of services	a small variety of products
13	a small variety of products	a small variety of services

The results show that the key management problems of the mobile operators in the Republic of Bulgaria according to the users are related to high prices of services, technical reasons, inaccuracies in account and contract preparation, unfair trading practices, etc.

The next stage of the proposed methodical approach is related to the estimation of the influence of the identified management problems on the organizational image of the operators.

ESTIMATION OF THE INFLUENCE OF THE MANAGEMENT PROBLEMS OF MOBILE OPERATORS IN THE REPUBLIC OF BULGARIA ON THEIR ORGANIZATIONAL IMAGE

The Range (R) as a measure of scattering is unsustainable and only brings information about the range in which the meanings of management problems vary.

For this reason, other scattering indicators such as standard deviation (S) and coefficient of variation (V) are applied in the present work.

Table 3 presents the results from the applied methodological approach for estimating the impact of management problems on the image.

Table 3. Results from estimation of the influence of the management problems on the image (made by the author)

Indicator	n	R	$\bar{X}$	S	V	n	R	$\bar{X}$	S	V
	Individual users					**Business users**				
high prices of services	109	7	3.7	2.18	58.92%	71	6	4.50	0.003571	0.079%
incorrectness at the drafting of the bills;	93	7	3.87	2.17	56.07%	86	6	4.39	3.775819	86.009%
technical problems	104	7	4.02	1.7	42.29%	80	7	4.17	0.177661	4.260%
incorrectness at contracts preparation and renewal	75	6	3.84	0.045	1.17%	50	6	4.74	0.449352	9.480%
unfair trade practices	67	7	3.89	2.7	69.41%	66	6	4.81	0.276256	5.743%
receiving unwanted advertisements/commercial messages	75	7	2.17	8.6	396.31%	37	6	4.59	0.528011	11.503%
poor quality of the services	65	6	4.34	1.87	43.09%	38	6	4.60	0.509474	11.075%
quality of provided information;	45	6	3.97	0.65	16.37%	38	6	5.05	0.644803	12.768%
high prices of product offered;	45	7	2.98	4.02	134.90%	34	6	4.62	0.649706	14.062%
bureaucratic difficulties in switching operator;	73	6	3.93	0.77	19.59%	40	6	4.40	0.484000	11.000%
poor quality of the products	59	7	4.19	1.03	24.58%	32	6	4.53	0.630003	13.907%
a small variety of services	52	6	3.96	1.4	35.35%	18	5	4.61	1.170450	25.389%
a small variety of products	41	6	4.05	0.97	23.95%	18	5	4.78	1.290689	27.001%

The analysis results show that the following management problems have the greatest impact on the image of operators: poor quality of services with an average rate of 4.34, poor quality of products with an average rate of 4.19; technical problems with an average rate of 4.02 and etc.

It is appropriate to clarify that respondents are more consensual in their opinion with less scattering. For the purposes of this study, it is considered that if the coefficient of variation is less than 40%, dissipation is negligible and users are unanimous. The results of the variation analysis show that the coefficients of variation are below 40% for the following problems: incorrect preparation and renewal of a contract, quality of provided information, poor quality of services and products, small variety of services and products. Consequently, individual users are unanimous in their assessments of their impact on the image.

Based on the views expressed by business users about the power of influence of management problems on the image, the following conclusions can be drawn: 1) overall, the estimates are higher than those of individual clients; 2) according to the business clients the problems related to the quality of the information with a score of 5.05; unfair commercial practices with 4.81; a small variety of products with 4.78; incorrectness in drafting the contract with 4.74; a small variety of services with 4.61 and etc. have the

greatest impact on the operators image. The coefficient of variation is less than 40% when assessing the power of influence of all problems, except for an incorrectness at the drafting of the bills where the value is extremely high.

Consequently, business users are relatively unanimous in their estimates with all other problems. There is a great scattering in the problem an incorrectness at the drafting of the bills. This is associated with a significant discrepancy in the opinions of business users.

On the basis of the statistical analysis, the following conclusions can be drawn: individual and business users assess the impact of management problems on the operator's image in a different way. It is noteworthy that a large part of the management problems of the mobile operators, which have a very strong impact on the image, are outside the scope of identified key management problems. There is a considerable discrepancy in the opinions of individual and business users about the impact of the problems.

The conclusions made are an argument in support of the author's view that mobile operators in order to build their image and achieve leadership should apply an individual approach to each user, taking into account the power of influence of all management problems, even the unimportant ones.

CONCLUSIONS

Based on the study following conclusions can be formulated:

- ✓ a methodological approach has been developed and tested for identifying the management problems of the mobile operators in the Republic of Bulgaria and estimating their influence on the organizational image;
- ✓ as a result of conducted surveys among individual and business users, the management problems of the mobile operators have been identified and ranked;
- ✓ according to customers of mobile services the key management problems of mobile operators are related to high prices of services, technical reasons, incorrectness in the preparation of bill and contracts, the application of unfair commercial practices and etc;
- ✓ the influence of the management problems on the image of the mobile operators in the Republic of Bulgaria is estimated;
- ✓ the formulated working hypothesis has been proven -individual and business customers assess the influence of identified management problems on the organizational image in a different way;

✓ as a result of the statistical analysis it has been determined that according to the individual users the greatest influence on the image presents problems related to poor quality of services and products, technical problems and etc. According to business users management problems such as: poor quality of information, application of unfair commercial practices, small variety of services and products, unfairness in the preparation of the contract have the most significant impact on the organizational image.

The obtained results will be used in future studies of the author, related to the creation of models for building a positive organizational image of the mobile operators in the Republic of Bulgaria, taking into account the relationship "management problems - organizational image" in the telecommunication services sector.

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