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Integrated Efficiency Assessment Model of University Promotion

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Abstract: Optimization of university promotion is based on integrated efficiency assessment. The scientific investigation of informational promotion effectiveness is one of the directions in the field of the promotion research. Effectiveness evaluation can be integrated only when it uses a certain model. This model is based on such system of parameters which can evaluate various directions and sublevels of effectiveness (economic and communication effectiveness). Evaluation is criteria of replanned figures, which are compared with calculated parameters. Integrated efficiency assessment model helps to analyze conformity between selected communication channels and target audience, but also adjust communication control system, develop ways of rapid response to market's changes. Results of integrated efficiency assessment model of university's promotion are used in planning of communication on local markets.

Key words: Efficiency of promotion · Communicative efficiency · Economic efficiency · Effectiveness research

INTRODUCTION

The current state and trends of the national and the international educational services markets prove that institutes of higher education are increasing their communication activities. On the one hand, they have to pay much attention to and to expend energy in communication activities applying marketing communications as one of the principal tools of competition. But on the other, institutes of higher education cannot afford to spend money limitlessly for communication activities since they have to strive for innovation and improvement of higher education services and products to be competitive in the national and international educational environment.

Sharing the view of Burrell, D.N. Rahim, E. that "in the current volatile atmosphere, strategic systems thinking, tactical development and strategic planning implementation approaches are critical for organizational survival, growth, health and longevity" [1], we believe that an active optimization of informational promotion performed by an institute of higher education (in national and international markets) is based on an integrated evaluation of promotion effectiveness and on the results of research conducted prior to educational services promotion planning [2].Communication activities of an institute of higher education should be optimal, that is, planned in such a manner that a minimum investment gives a maximum outcome. Optimisation is based on an integrated evaluation of the communication activities of an institute which is made on a step-by-step basis and implies a system of parameters enabling to evaluate various directions and sublevels of effectiveness: economic and communication effectiveness. This balanced system of parameters will allow "to ensure the maintenance of university operating standards, encourage individual universities to work on inadequacies and promote university competitiveness"[3].

The effectiveness has a multi-measured structure [4, 5], therefore the integrated evaluation of promotional effectiveness includes two directions: communication and economic effectiveness. A milestones integrated evaluation model of informational promotion effectiveness of an institute of higher education is given in Table 1.

Communication effectiveness is studied according to the results of a school leavers survey conducted at the moment of filing documents for admission in June and July and the economic one according to secondary information (admission campaign results and money spent for promotion) in September and October.

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Table 1: Integrated model for evaluating informational promotion of an institute of higher education

Direction of research	Parameters and technology of evaluation
Level 1. Communication effectiveness	
School leavers survey based on a structured questionnaire	- General structure of information consumption by school leavers - Communication effectiveness of promoting an institute of higher education by every type of media - Matching of information consumption by school leavers with what was planned
Level2.Economiceffectiveness	
Secondary information (admission campaign results and money spent for promotion)	- Analysis of institute of higher education promotion budget structure and description of promotional measures - Study of economic effectiveness of institute of higher education promotion based on a parameter system - Study of the elasticity of demand for educational services provided by an institute of higher education

When evaluating communication effectiveness of publicity, such categories are used as retention (recognition, recall), persuasiveness and degree of influence on brand attitude and school levers' retention of advertisements of an institute of higher education is used as a key parameter. However, when evaluating economic effectiveness of publicity, a whole system of parameters is applied the computation of which always implies expenses for university promotion and market positioning.

It should be noted that this model has been tested for two years within the walls of the Far-Eastern Federal University. Moreover, the second-year results of the promotion effectiveness evaluation proved to be much better.

The evaluation of promotional effectiveness of an institute of higher education includes:

1. Phase. Study of general structure of information consumption by school leavers.
2. Phase. Evaluation of communication effectiveness of promoting an institute of higher education by every type of media channels.
3. Phase. Evaluation of matching of information consumption by school leavers with planned and taken promotional measures of an institute of higher education.

The following SPSS survey tools were used as methods of analysis:

- Linear distribution (linear frequencies construction for one- and multiple-response questions);
- Cross tables construction (multi-way distributions) for one- and multiple-response questions used for determining the type, the direction and the binding force between the variables;
- Correlation analysis of determining if there is a relation between the variables;
- Factor analysis (principal component method, with the Varimax subprogram of rotation of axes) of the whole data array.

The general structure of information consumption is composed according to the share of school leavers' answers to questionnaire's questions relating to retention of information messages provided by the institute of higher education in certain types of media. The media consumption structure enables to evaluate the communication effectiveness of promoting an institute of higher education in a simplified form on the basis of the main types of media channels (Internet, television, press, radio and outdoor advertising)

Interesting results can be obtained from the question concerning sources of information about the institute of higher education, which makes it possible to clarify communication channels of respondents' information consumption (popular, private or local ones).

The next phase implies a more detailed evaluation of the effectiveness of promotion measures taken that were broken down by questionnaire separate questions. Communication effectiveness of promoting an institute of higher education is evaluated on the basis of the number of school leavers who remembered an advertisement in a certain mass medium.

The comparative analysis of publicity communication effectiveness of the institute of higher education advertisements in various types of media channels (Internet, television, press and radio) is based on retention of advertisements by school leavers and allows clarifying the communication effectiveness brake down by region constituent units. The radar chart is shown in Figure 1. It is composed on the ground of retention of the institute of higher education advertisements by school

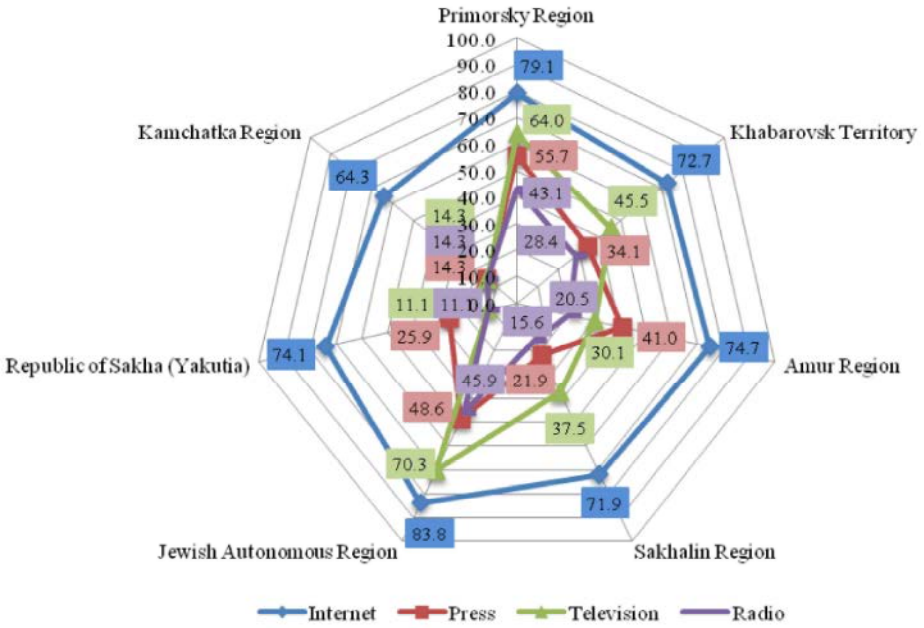

Fig. 1: Comparative description of the level of advertisement retention in different types of media channels brake down by Far-Eastern Region constituent units, % of respondents

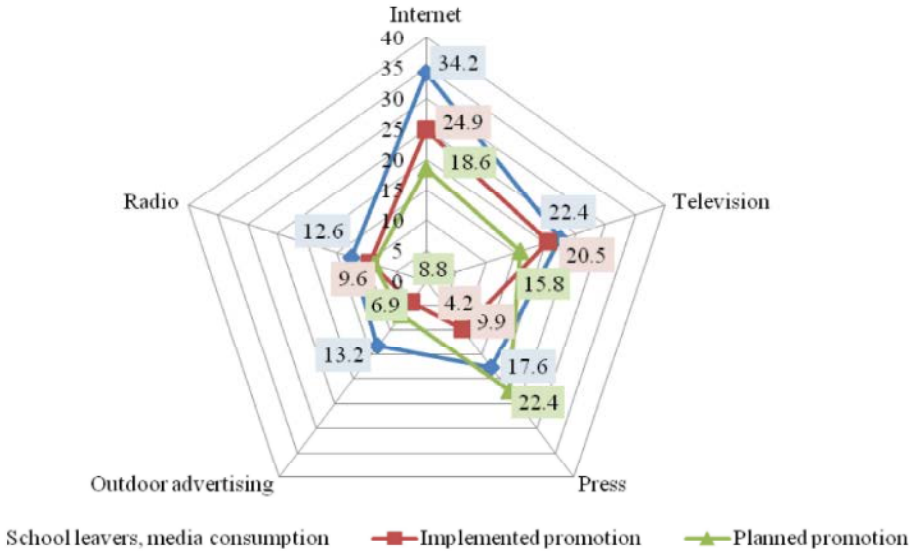

Fig. 2: Comparative description of school leavers' media consumption with the funds spent and planned for promoting the institute of higher education, % of respondents

leavers who are calculated as % of the respondents who remembered the advertisement in this channel of a regional group of school leavers (residents of a certain region).

The comparative analysis of school leavers media consumption structure with the funds spent and planned for promoting the institute of higher education is rather informative. The radar chart shown in Figure 2 illustrates the level of communication effectiveness based on retention of advertisements of an institute of higher education by school leavers (school leavers' media consumption) brake down by types of media channels.

The correspondence of the promotion measures implemented by the institute of higher education to the revealed school leavers' media preferences is analyzed in a simplified form (based on media types) and in a more detailed one (broke down by each medium type).

To assess economic effectiveness of the university promotion, a methodological approach has been developed which implies a certain sequence of analysis and calculation of a system of parameters most of which include university promotion expenses (hereafter - promotion funds) and market position. The communication activities budget of the higher education institution is the whole scope of expenses for performing communication activities.

The suggested mechanism of evaluating the economic effectiveness of a institute of higher education promotion includes three interrelated stages (Table 1) and a method for calculating economic effectiveness promotion parameters (Table 2).

At the first stage, the promotion budget structure is analyzed in respect of key promotional programs within the framework of university branches of activities and a brief description of promotion measures is given. Then, the promotion budget and its structure are analyzed as broke down by promotion types and regions.

At the second stage, the following economic effectiveness parameters of communication activities of institute of higher education in respect of the spent promotion funds were calculated:

- Average cost of one school leaver's response to promotion measures as a whole for institute of higher education and as broken down by separate regions (based on the number of school leavers and their applications);
- Average cost of one school leaver's response to promotion activities broke down by promotion types (according to a school leavers survey);

Table 2: Parameter of system for evaluating the economic effectiveness of institute of higher education promotion

Method name	Computation technique	Parameter economic sense
1. Average cost of one school leaver's response to communication activities carried out by an institute of higher education as relates to the Far-Eastern Region as a whole and broken down by its constituent units	$Cost_{resp.} = \frac{E_P}{Q_{sl}(appl)}$, (1) where E_P stands for institute of higher education promotion expenses;Qsl- number of school leavers who lodged applications to enter the institute of higher education;Qappl- total number of applications lodged	Reflects the amount of funds spent for attracting one school leaver or one full-time application.
2. Average cost of one school leaver's response to communication activities carried out by an institute of higher education broken down by promotion types	$Cost_{\text{resp.}} = \frac{E_P}{Q_{\text{sl.}} * Share_{retention.}}$ (2) where E_P- institute of higher education promotion expenses; Qsl- number of school leavers who lodged applications to enter the institute of higher education; $Share_{retention}$- share of respondents in the sample who remembered the advertisement based on each type of media channels.	Reflects the amount of funds spent for attracting one school leaver in each type of media channels based on the number of those who remembered the advertisement according to a school leavers' survey.
3. Net economic effectiveness of promotion costs	$E_{eff} = \frac{V}{E_P}$ (3) where V - stands for the amount of institute of higher education monetary assets received as tuition paid by those admitted on a contract basis; E_P - institute of higher education promotion expenses.	Reflects the amount of profit (as tuition paid by those admitted on a contract basis)gained by each ruble invested in the institute of higher education promotion.
4. Achieving goals of institute of higher education target audience reach	$\Delta[\text{delta}]_{Reach} = Reach_{achieved} - Reach_{planned}$, (4) Where $Reach_{achieved}$- stands for the institute of higher education target audience reach achieved due to implemented promotion programmes, in %.$Reach_{planned}$-planned institute of higher education target audience reach, in %	Difference between the achieved and the planned institute of higher education target audience reach (in %); its positive value shows an overachievement, negative one an underachievement and 0 means that the achieved reach and the planned one coincide.
5. Cost per contact and its variation	$CPC = \frac{E_p}{\text{Re}ach \bullet} \bullet 100\%$ (5) $\Delta[\text{delta}]_{CPC} = CPC_{achieved} - CPC_{planned}$ (5.1) where E_P- stands for institute of higher education promotion expenses;Reach- institute of higher education target audience reach (planned or implemented)N -institute of higher education target audience group size, inperson	Reflects the amount of money spent to show one advertisement in a media channel to institute of higher education target audience representative.$\Delta[\text{delta}]_{CPC}$ reflects changesof $CPC_{planned}$ in relation to $CPC_{achieved}$;Its positive and negative values show CPC increasing and decreasing respectively.

Table 2: Continue

Method name	Computation technique	Parameter economic sense
6. Coefficient of price elasticity of demand for educational services provided by an institute of higher education	$E_P = (\Delta[\text{delta}]Q/Q_1,)/(\Delta[\text{delta}]P/P_1)$, (6) where $\Delta[\text{delta}]Q/Q_1$- stands for a relative variation of demand; $\Delta[\text{delta}]P/P_1$ - a relative variation of price for institute of higher education educational services.	A relative variation of demand is considered as a whole for institute of higher education and as broken down by modes of study and in two variants: - According to the amount of institute of higher education monetary assets received as payment for studies of those admitted on a contract basis; - according to the number of students ofinstitute of higher education admitted on a contract basis.
7. Coefficient of demand elasticity as relates to institute of higher education communication activities costs	$EE = (\Delta[\text{delta}]Q/Q_1)/(\Delta[\text{delta}]E/E_1,)$, (7) where $\Delta[\text{delta}]Q/Q_1$ - stands for relative variation of demand (demand implies both the number of school leavers and the number of admission applications lodged by them),Δ[delta]E/E1 - relative variation of institute of higher education promotion expenses;	Inelastic demand indicates that demand grows as promotion costs grow (direct correlation).

- Net economic effectiveness of institute of higher education promotion costs;
- Achieving goals of institute of higher education target audience reach.

Demand elasticity analysis gives interesting results. [6-8].At the third stage, elasticity dynamics of the demand for educational services of institute of higher education is studied and influence on demand is studied in two directions:

- In relation to the price for educational services of institute of higher education;
- In relation to promotion costs.

All parameters of economic effectiveness for the current year should be calculated alone or in a reduced form, i.e. using correction coefficients k1 (taking the advertising market trend of restoring after the crisis and intensive growth into account) and k2 (taking the changing number of school leavers in the country into account). Then, each parameter of dynamics is studied and compared with the previous year. It is necessary to apply the correction coefficients k1 andk2 to take environment influence into consideration. Both correction coefficients are applied to data which are in opposite parts of a formula.

Russia's advertising market is characterized by a steady growth with increasing prices for publicity [9]. The calculated value of correction coefficient k1 by which institute of higher education promotion costs should be multiplied was k1=0.88 in 2012 (the relation of advertising market size in Russia in 2011 to that in 2012 or 263,400 mln rubles/297,778 mln rubles) and k1=0.82 in 2011 (the relation of advertising market size in Russia in 2010 to that in 2011 or 214,500 mln rubles/261,310 mln rubles).

The community activities of institute of higher education are aimed at the target audience consisting of 4 groups at the national market (eleventh former, senior pupils, parents and socially minded citizens).

However, such groups as parents and socially minded citizens partially intersect as their representatives can act both as those influencing school leavers' decisions about buying an educational service and as potential consumers of other modes of study (extramural, distance, etc.) and additional educational services. School leavers are the key group of the target audience. The decrease in the number of school leavers takes place till 2011; in 2012, the number of them grows by 8% nationwide, that being a break point (domino effect of growth as compared with the previous year). In 2012, the number of school leavers increased both nationwide and in the Far-Eastern Region (except the Kamchatka Region, the Magadan Region and the Jewish Autonomous Region where it decreased). It should be noted that the North Caucasian Federal District lacks this trend as well. According to a forecast made by Federal State Budgetary Scientific Institution "Tsentr sotsiologicheskikh issledovaniy" (Social Research Centre), the number of school leavers will increase by 1.8% in 2013 and decrease in 2014 and 2015 by 4.7% and 3.9% correspondingly [10].

The calculated value of correction coefficient k2 taking the changing number of school leavers at the national market into account was k2= 0.92 in 2012 (the relation of the number of school leavers in the RF in 2011 to that in 2012 or 724,359 people/784,418 people) and

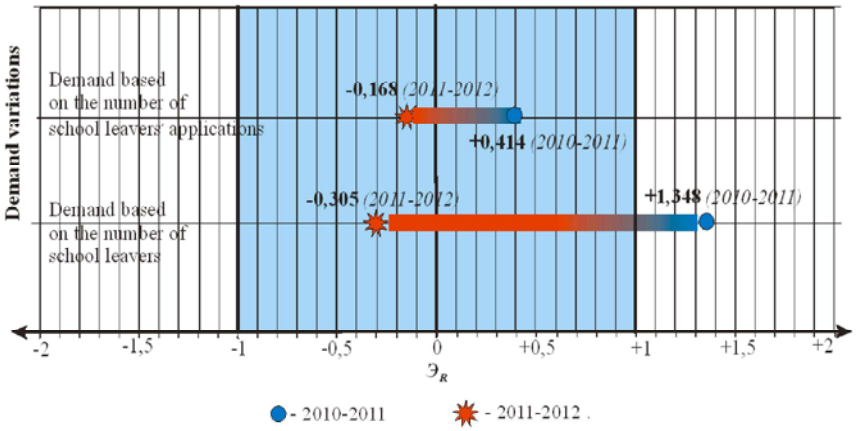

Fig. 3: Coefficients of demand elasticity dynamics based on institute of higher education promotion costs for 2010-2011 and 2011-2012 academic years for two variants of demand interpretation

k2= 1.08 in 2011 (the relation of the number of school leavers in Russia in 2010 to that in 2011 or 840,000 people/780,000 people). The coefficient k2should be used to multiply the number of school leavers and admitted students.

An analysis of demand elasticity for educational services in two directions - prices for educational services and promotion costs - brings interesting results. Coefficients of demand elasticity dynamics based on institute of higher education promotion costs for two academic years are shown in Figure 3.

It should be noted that last year all calculated values of coefficients EE were positive, i.e. the cost cutting resulted in a decrease in demand (calculated on the basis of the number of school leavers and the number of applications).

This year, coefficients E_E, calculated on the basis of two types of demand are negative. Consequently, the reduction in costs for communication activities resulted in an increase in demand, thus, indicating promotion optimization.

Apart from analyzing if the selected communication channels correspond to target groups of institute of higher education, the integrated and consistent evaluation of communication activities effectiveness (on all levels and in all directions) based on the suggested model makes it possible to adjust the system of promotion management and to develop tools for prompt responding to market situation changes. The results of integrated evaluation of informational promotion effectiveness are used when planning communication activities of an institute of higher education at territorial markets.

REFERENCES

1. Burrell, D.N. and E. Rahim, 2010. An applied application of contemporary strategic leadership analysis in higher education for managing organizational environmental adaptation and change. International Journal of Knowledge, Culture and Change Management, 10(3): 77-90.
2. Kmet, E.B., 2010. Research preceding publicity activities planning of Russian companies on the Asian Pacific countries market. Collection of scientific papers Sworld. Odessa: KUPRIENKO, pp: 91-96.
3. Chen, S.H., H.H. Wang and K.J. Yang, 2009. Establishment and application of performance measure indicators for universities. TQM Journal, 21(3): 220-235. Cited 3 times.
4. Taysir, E.A. and N.K. Taysir, 2012. Measuring Effectiveness in Nonprofit Organizations: An Integration Effort. Journal of Transnational Management, 17(3): 220-235.
5. Cashmore, M., A. Bond and B. Sadler, 2009. Introduction: The effectiveness of impact assessment instruments. Impact Assessment and Project Appraisal, 27(2): 91-93.
6. Clements, K.W., 2008. Price elasticities of demand are minus one-half. Economics Letters, 99(3): 490-493.
7. Slesnick, D.T., 2005. Prices and demand: New evidence from micro data, Economics Letters, 89(3): 269-274.

8. Kolberg, W., 2009. A peek into a Pandora's box: Firm-level demand with price competition vs. quantity competition, Economics Letters, 105(3): 242-246.
9. Volume of the marketing communications market in Russia in 2011. www.akarussia. ru/knowledge / market _ size/id1865.
10. Number of students in Russian Federation educational institutions: Medium-range forecast till 2014 and trends evaluation till 2025. www. demoscope. ru/weekly/ knigi/obrazovanie/ obrazovanie.pdf.