

PRODUCT POLICY FEATURES FOR AN INTERNET FIRM

Sergey Kulpin

Abstract

The object of research is the Internet firm. The topic of discussion is organizational and economic relations between Internet firms and other participants of the Internet market arising from the formation of norms and rules for product policy. The aim of this work is to develop a model of economic evaluation of product policy in the marketing of Internet companies.

The study contains three main scientific results:

1. The author developed a typology of economic institutions that influence an Internet firm.
2. The author's model of the product policy estimation for Internet firms is offered. The model includes a classification of online products on the informativity basis, the condition of optimality for an Internet firm, the model of informativity determination, and a methodology for assessing the product policy of Internet firms.
3. The author selected factors of product competition for Internet firms. These factors are divided into such categories as factors that determine the product quality, price and market share; factors that determine promotion tools and competitive advantage; factors influencing the image, reputation and brand of an Internet firm.

Key words: Internet marketing, Internet firm, online shop product policy, institutional theory for the Internet.

JEL Code: M31, L86

Introduction

The modern world has entered the information society era. The importance of Internet space for almost every economic subject be it a small business or a transcontinental corporation is growing every day. Majority of transactions is transformed into electronic format which leads to smaller time and financial elements of transaction costs structure on the one hand and appearance of new behaviour rules for economic subjects at the internet market on the other hand.

Because of these transformations competition at the internet market is growing, increasing the relevance of research devoted to developing marketing activities of internet

firms, particularly those related to the topic of effective product policy in the context of internet market.

Modern internet companies act in an institutional environment that differs from that of traditional companies. This fact calls for new understanding of internet market institutional structure and defining institutions influencing implementation of internet firm product policy and their marketing activities in general.

In the context of economic volatility and crisis as well as the global nature of internet market Russian internet companies face increasing difficulties in finding their competitive advantages. Because of that the author believes that development of national research in the field of non-price product competition factors at the internet market should be seen as the priority trend. Internet firms should concentrate on those factors that have the highest influence on internet firm sales level.

Taking into consideration modern environment there is no sufficient coverage of aspects related to analysis and evaluation of internet firm product policy. The topic of the research, as well as aims and objectives of the thesis were predetermined by the theoretical and practical importance of this problem.

1 Internet market institutions

The author suggests looking into internet market specifics with the use of institutional theory and transaction costs theory, ontological basis of which was formulated by such international authors as D. North (North, 1990), J. Commons (Commons, 1931), etc. Institutional changes in virtual market creation were analysed by such authors as K. Elsbach (Elsbach, 2002), T. Jensen (Jensen, 2008), A Salazar (Salazar, 2009), etc. Transaction interaction evaluation of economic activity agents acting at the internet market was conducted by S. Thompson (Thompson, 2004), T.-P. Liang and J.-S. Huang (Liang, 1998), A. Cordella (Cordella, 2006), etc.

There is no description of internet space institution notion in the academic literature as well as overall systematization of virtual space institutions. Modern research in the field of virtual space pay attention not to the institutions system but to the singling out individual institutional units of internet space not belonging to certain structure.

On the basis of existing research author has found out that economic institution of internet space is the combination of set norms of interaction between agents in the virtual environment.

Researchers believe that virtual space institutions development is related to the institutional isomorphism process, that is the process making one market participant resemble another market participant under the influence of similar environment.

The company engaged in internet business finds itself in a specific institutional environment. As in a traditional trade this environment has exogenous institutional context: a set of institutions influencing the company from outside and endogenous institutional context: a set of institutions influencing the company from inside. Some institutions are inherited from traditional business, others are new for internet market environment.

Table 1 demonstrates the system of internet market institutions system formulated by the author.

This typology presents a general systematization of internet market institutions.

Speaking of marketing institutions the author identifies online marketing research institutions, product creation for internet market institution, PR in the internet institution and internet advertising institution.

Academic novelty of the typology of economic institutions influencing internet firm is related to forming new institutional system broadening existing typologies of real economy economic institutions over virtual business relations. Knowledge increase is in the creation of a new economic institutions typology considering peculiar institutions of internet space. Academic importance lies in the broadening theoretical understanding of economic activities institutional structure over internet space. Practical importance of developed typology is in the formation of methodical foundation for developing institutional structures for virtual economic relations.

2 Methodical maintenance of product policy assessment for Internet firms

The next stage of the research is devoted to designing methodic support of internet firm product policy. The main aspects describing methodical support of internet firm product policy were presented by the author at the 9th International days of statistics and economics (Kulpin, 2015). Therefore the author decided to skip detailed description of designed methodic support and present only main academic results.

Tab. 1: Internet market institutions system

Institution	Function	Market environment
<i>Exogenous institutions</i>		
<i>Institutions of exogenous regulation, control and statistics</i>		
Copyright in the internet	Protecting copyright of companies acting in the virtual space, copyright for internet products	Virtual
Financial and tax reporting	Providing state control of economic agent activities	Traditional, virtual
Statistic reporting	Creation of state statistics	Traditional, virtual
Labour relations control	Providing state control of following labour relations norms in the company	Traditional, virtual
<i>communication institutions «firm – firm»</i>		
IP addresses	Providing economic agent with IP addresses pool	Virtual
Domain names provision	Providing economic agent with recognisable internet name	Virtual
Counteragents	Providing firm with necessary starting resources	Traditional, virtual
Sponsor attraction	Providing sponsor support of the company from outside	Traditional, virtual
<i>Communication institution “business – client“</i>		
Online B2C trade	Conducting basic economic activities at retail electronic market	Virtual
Online B2B trade	Conducting basic economic activities at wholesale and retail electronic market	Virtual
Online B2G trade	Conducting basic economic activities between internet companies and state structures	Virtual
Online auctions	Conducting basic economic activities on the basis of auction model	Virtual
<i>Endogenous institution</i>		
<i>Internal control institutions in the internet firm</i>		
Information protection	Preventing information leaks inside the company	Traditional, virtual
Internal personnel control	Providing commercial secrecy preservation	Traditional, virtual
<i>Institutions of internal organisation of internet firm activities</i>		
Technical support of electronic business	Providing sustainability of electronic business platform	Virtual
Contract control	Providing contract fulfilment terms	Traditional, virtual
Outsourcing	Delegating certain firm functions to other counteragents	Traditional, virtual
<i>Institutions of internet firm marketing</i>		
Creating products for internet market	Creating products in demand at the internet market	Virtual
Online marketing research	Conducting virtual market analysis	Virtual
Traditional marketing research	Conducting traditional market analysis	Traditional
PR in the internet	Creating certain reputation of the company by means of presenting information about its activities with the use of the Internet	Virtual
PR	Creating certain reputation of the company by means of presenting information about its activities with the use of traditional methods	Traditional
Traditional advertising	Making consumers aware of the product	Traditional
Internet advertising	Making consumers aware of the product in the Internet	Virtual
<i>Institutions of labour relations in the internet firm</i>		
Recruiting	Recruiting adequate personnel	Traditional, virtual
Standardization of activities	Formulating norms and rules regulating personnel activities	Traditional, virtual
Stimulation	Stimulating personnel for more effective work,	Traditional, virtual
Corporate culture support	Forming values inside the company, supporting corporate culture and ethics	Traditional, virtual

Source: compiled by the author.

The author presents *product informativity* by means of the component sum on types of information:

$$I_p = i_a + i_v + i_o + i_{ts} + i_{tc}, \quad (1)$$

where I_p – informativity of products;
 i_a – auditory information content;
 i_v – visual information content;
 i_o – olfactory information content;
 i_{ts} – taste information content;
 i_{tc} – tactile information content.

According to the model of optimal transaction costs of the company and information consumption the company should not aim at complete absence of transaction costs. The main aim of the company is to have such a level of costs that allows for functioning of all information production and consumption institutions.

As the result of mathematic transformations the author received a term:

$$\frac{\partial R}{\partial (TC_{ip} + TC_{sd} + TC_{nd})} = 1. \quad (2)$$

Term (2) is a *prerequisite of optimal product policy of the company working at the internet market*. This term shows that gross income of the company depends on which products are sold by the economic agent at the internet market. Ideal internet firm is a firm that sells perfect internet products.

As a result of empiric research the author received functions (2) for internet firms offering different types of goods (Fig. 1).

The novelty of this work is that such approach was used for the first time and can be broadened in the further research. Knowledge increase is in the development of internet firms product policy evaluation apparatus on the basis of synergy of institutional and marketing analysis. Practical importance of these instruments is that they can be used by economic agents acting at the internet market in order to evaluate efficacy of product policy.

3 Factor model of Internet firms product competition

Product competition acts as both natural stimulus and limiting factor for product policy. Thesis research conducted by the author identifies product competition factors influencing

this or that internet firm or internet product on the example of software as a product perfectly fit for internet market sales (ideal internet product):

1. Factors defining quality, price of the product and market share (works by D. Ariely (Ariely, 2007), J. Sacranie (Sacranie, 2010), etc.):

- Category and functional characteristics of internet product;
- Internet product price;
- Year when internet product was created;
- Physical peculiarities of the product (in our case the size, distributive and and other technical characteristics of software).

2. Factors defining instruments for promoting and supporting competitive advantages (works by M. Katz (Katz, 1994), D. Lee (Lee, 2008), etc.):

- Advertising activities of the firm;
- Network effects at the internet market.

3. Factors forming image, reputation and brand of manufacturer and internet product itself (works by S. Basurou (Basurou, 2003), F. Zhu (Zhu, 2009), etc.):

- Brand of manufacturer and internet product;
- Reviews and evaluation of experts and consumers.

The author shows interdependence between level of sales and these factors in the following model:

$$D = f(Cr, Us, Br, Adv, Fun, Comp, S, Y), \quad (3)$$

where D – quantity of downloads (sales), Cr – critics' reviews, Us – consumer reviews, Br – brand, Adv – advertising, Fun – functional, $Comp$ – competition, S – size of distributive, Y – year of manufacturing.

In order to present this model for free and paid internet products the author presents interdependence between the number of downloads (sales) and factors influencing them in the form of two linear regression equations:

$$S_{II} = a_0 + a_1 \cdot Cr + a_2 \cdot Us + a_3 \cdot Br + a_4 \cdot Adv + a_5 \cdot Fun + a_6 \cdot Comp + a_7 \cdot Sr + a_8 \cdot Y + \varepsilon, \quad (4)$$

$$S_{\sigma} = b_0 + b_1 \cdot Cr + b_2 \cdot Us + b_3 \cdot Br + b_4 \cdot Adv + b_5 \cdot Fun + b_6 \cdot Comp + b_7 \cdot Sr + b_8 \cdot Y + \varepsilon, \quad (5)$$

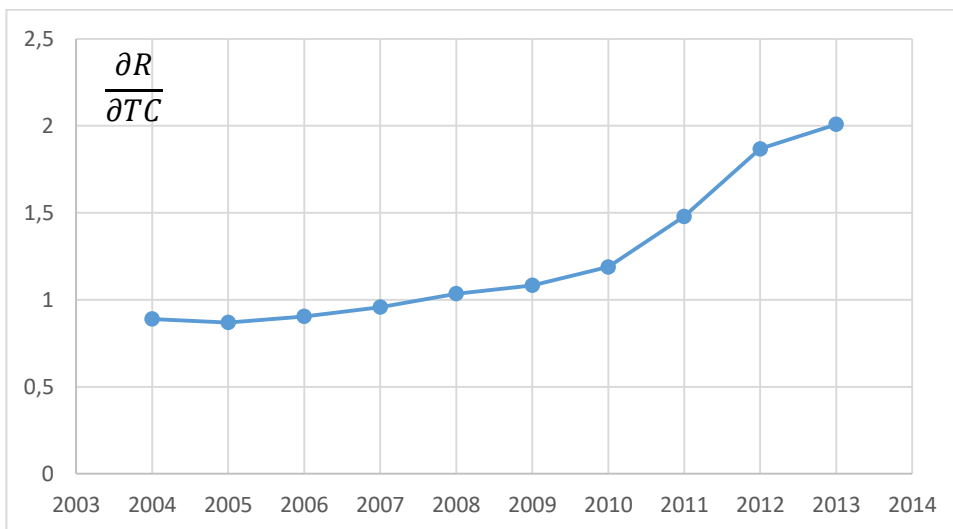
The author proves that coefficient vector for $\{a_0, \dots, a_8\}$ does not equal vector $\{b_0, \dots, b_8\}$. In other words by choosing this or that paid internet product the consumer takes into consideration a different set of external factor as compared to the case with choosing free internet product.

Fig. 1: Testing of internet firm product policy evaluation methods:

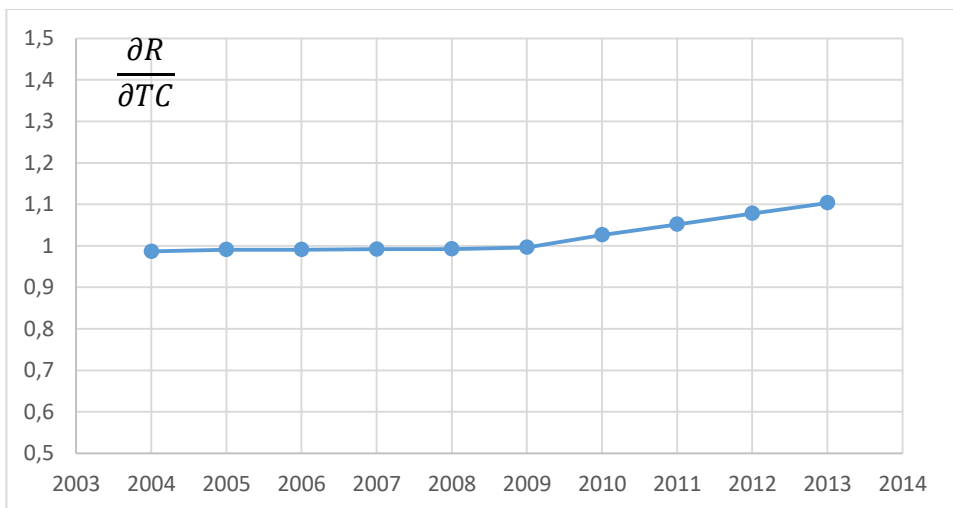
a – internet firm offering mostly ideal internet products;

b – internet firm offering internet products that stimulate demand;

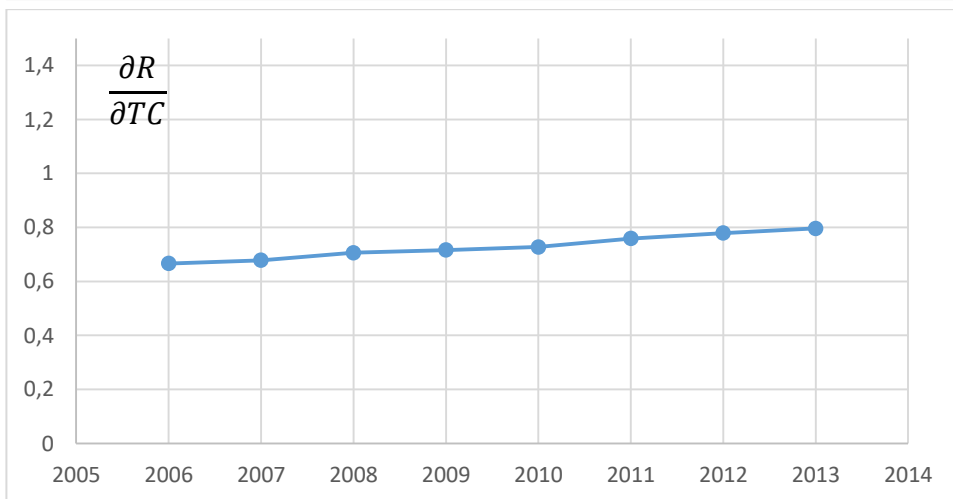
c – internet firm offering internet products that do not stimulate demand



a



b



c

Source: compiled by the author.

This data was taken for 15 categories of software sold via <http://download.cnet.com>. From each category 30 software products were chosen, 15 paid and 15 free. The choice was made from the list of software products in each category sorted by date of the latest review (or evaluation by consumer) on a certain product. This selection method allowed for obtaining the best coverage according to all variables present in regression model.

In order to check the hypotheses the author conducted separate regression analysis for free and paid products.

In his research the author demonstrates that in case of paid internet products expert evaluation and reviews play the most important role. The influence of consumer reviews and evaluation is also felt. Consumer reviews have negative effect on internet product popularity. Positive influence on internet products popularity is rendered by the popularity of other internet products. It proves the point that internet product market is highly competitive and consumers are oriented towards already popular products which creates network effects at the market.

The fact that in the most complete model price factor does not influence consumer preferences is rather unexpected. Author points out that popularity of paid software is influenced only by non-price factors of product competitiveness. The analysis also demonstrates neither year of manufacture nor size of the product have any influence over its popularity.

In case of free internet product analysis demonstrates that popularity of competing products has the largest influence over the consumer. Besides that success of free internet product is influenced by expert evaluations. However when compared with paid internet goods influence of other users' evaluation is minimal. The importance of the production year of product size remains insignificant as is in the case of paid internet products.

Academic novelty of forming factor model of product competition in the Internet is in the modernization of academic approaches to studying marketing effects related to product policy and happening at virtual markets. Knowledge increase is in the broadening of the understanding of internet market nature by means of factor analysis. Practical importance is in the development of applied model for defining interaction between competing economic agents acting at the internet market.

Conclusion

On the basis of conducted research the author formulated the following conclusions.

The author suggested the system of internet market institutions influencing internet firm. He identified internet firm marketing institutions, including institution of online marketing research, institutions of creating products for internet market, PR institution in the Internet, internet advertising institution. The results of theoretical and methodological research conducted by the author are used by the teaching and academic community in designing courses in the field of marketing and institutional economics.

The author suggested methodical support of internet firm product policy evaluation from the point of view of product portfolio informativity which includes internet products classification on the basis of informativity; methods of evaluating internet firm product policy evaluation based on the optimal mode of internet firm product policy. Obtained results are used by regional internet firms for improving product policy in their marketing activities.

Factor model of internet firm product competitiveness was built based on dividing approaches to product policy implementation for paid and free internet products. The results are used by internet firms in their marketing activities as well as by teaching and academic community in preparing courses in the field of marketing and management.

Acknowledgments

1. Research has been performed with the support of the Russian Foundation for Basic Research, grant No 16-36-00146.
2. The work was supported by Act 211 Government of the Russian Federation, contract № 02.A03.21.0006.

References

- Kulpin, S., & Popov, E. (2015). The effectiveness evaluating of online shop based on informativity of the product portfolio. In *The 9th International Days of Statistics and Economics*. Retrieved April 30, 2016, from https://msed.vse.cz/msed_2015/sbornik/toc.html
- North, D. (1990). *Institutions, institutional change, and economic performance*. Cambridge, UK: Cambridge University Press.
- Commons, J. R. (1931). Institutional Economics. *American Economic Review*, 648-657.
- Elsbach, K. D. (2002). Intra-organizational Institutions' In Companion to Organizations. In A. C. Baum (Ed.), *The Blackwell Companion to Organizations* (pp. 37-57). Oxford: Blackwell.

- Jensen, T. B., Kjærgaard, A., & Svejvig, P. (2008). Two Perspectives on Information System Adaptation: Using Institutional Theory with Sensemaking. *Informatics Research Group*. Retrieved April 30, 2016, from http://old-hha.asb.dk/bs/wp/inf/I_2008_06.pdf
- Salazar, A. J. (2009). Mapping the Scope of Information Technology Enabled Transformation: A Multi-Theoretical Framework and Review. *Manchester Metropolitan University Business School Working Paper Series*. Retrieved April 30, 2016, from <http://www.ribm.mmu.ac.uk/wps/papers/05-01.pdf>
- Thompson, S. H. (2004). Understanding online shopping behavior using a transaction cost economic approach. *International Journal Internet Marketing and Advertising*, 1(1), 62-84.
- Liang, T. P., & Huang, J. S. (1998). An empirical study on consumer acceptance of products in electronic markets: A transaction cost model. *Decision Support Systems*, 24(1), 29-43.
- Cordella, A. (2006). Transaction costs and information systems: Does IT add up? *Journal of Information Technology*, 21(3), 195-202.
- Sacranie, J. (2010). Consumer Perceptions & Video Game Sales: A Meeting of the Minds. *Honors Projects*, 108. Retrieved April 30, 2016, from http://digitalcommons.iwu.edu/econ_honproj/108
- Ariely, D. (2007). How Small is Zero Price? The True Value of Free Products. *Marketing Science*, 26(6), 742-757.
- Katz, M. (1994). Systems competition and network externalities. *Journal of Economic Perspectives*, 8, 93-115.
- Basrou, S. (2003). How critical are critical reviews: The box office effects of film critics, star power, and budgets. *Journal of Marketing*, 67, 103-117.
- Lee, D. (2008). Divide and conquer: Competing with free technology under network effects. *Production and Operations Management*, 17(1), 12-28.
- Zhu, F., & Zhang, X. (2009). Impact of online consumer reviews on sales: The moderating role of product and consumer characteristics. *Journal of Marketing*, 74, 133-148.

Contact

Sergey Kulpin

Institution: Institute of Public Administration and Entrepreneurship, Ural Federal University named after the first President of Russia B.N. Yeltsin.

Address of institution: 13b Lenina Str., Ekaterinburg, 620014, Russia

Mail: skulpin@yandex.ru